Master Selection Guide

Semiconductor Products, Circuit Design Tools and Support

1988

TEXAS INSTRUMENTS

Semiconductor Products, Circuit Design Tools and Support

Master Selection Guide

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Master Selection Guide

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Catalog of Semiconductor Products and Services

TEXAS INSTRUMENTS

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CONTENTS

Product Identification and Information 1

Application Specific Integrated Circuits (ASIC) 2

Digital Logic Products 3

Processors and Controllers 4

Military Products 5

Interface Circuits 6

Linear Circuits 7

Optoelectronics and Image Sensors 8

Telecommunications and Speech Products 9

Memory Products 10

General Information 11

Customer Support 12

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SystemCell	Texas Instruments Incorporated
ULTRIX	Digital Equipment Corporation
UNIX	AT&T Bell Laboratories
VAX	Digital Equipment Corporation
VMS	Digital Equipment Corporation
XDS	Texas Instruments Incorporated

INTRODUCTION

The purpose of this book is to facilitate identification of Texas Instruments products and services to fill customer needs. The 1988 Master Selection Guide contains both an alphanumeric (A/N) index and a functional index. To lend itself more toward "user-friendliness", the A/N index is sorted alphabetically to group like prefixes and arranged in ascending numerical order – rather than strictly alphanumeric (by column position starting leftmost) as a computer would do. All package options are shown for clarity. Technical literature references – data sheets or data books – are also provided. The key-word functional index easily matches function to the appropriate TI part numbers.

TI's objectives for the late 1980's and into the 1990's are focused on leading edge technology and products – along with quality, reliability, comprehensive product support, and innovative customer service programs. In the 1988 Master Selection Guide, designers can readily assess TI's broad semiconductor line by referring to the table of contents organized into nine main product sections. These include the following: application specific integrated circuits (ASIC); VLSI logic and digital logic products; application specific processors and controllers; military products; interface circuits; linear circuits; optoelectronics and image sensors; telecommunications and speech products; and memory products.

Advanced DRAM-driven process technology, the basis for TI's thrust products today, offers customers high performance ICs that are available in a broad range of packages – including surface mount technology (SMT) – to support all equipment configuration strategies.

Texas Instruments customers can be confident of the lowest cost-of-ownership, thereby keeping their overall equipment costs as low as possible. Programs such as ship-to-stock and just-in-time delivery support reduction of costly inventories.

To obtain referenced technical literature, including data sheets, data books, and application notes, complete and return the order forms incorporated in the last section of the Guide. For further convenience, a complete listing of TI field sales offices, authorized TI distributors, TI Regional Technology Centers (RTCs), and the TI Customer Response Center is included on the back page.

QUALITY, RELIABILITY AND SERVICE

The goal of Texas Instruments is to offer product quality, reliability, and service unequaled in the semiconductor industry. The foundation for this approach is to consistently ship outstanding quality – which allows the elimination of costly incoming inspection through ship-to-stock programs. Ship-to-stock product quality, coupled with performance quality and 100% on-time delivery to narrow shipping windows, supports manufacturing cost reduction through just-in-time (JIT) manufacturing technology. This combination of quality, reliability, and service can be measured by a single index called "the cost-of-ownership[1]." Very simply stated, the cost-of-ownership – which consists of the purchase price, inventory, quality and reliability cost adders – is the total cost to own a product over its lifetime.

In today's highly competitive electronics industry, it is critical to know what your costs are, where they are, and whether or not you can reduce or eliminate them to improve profits without degrading either quality or reliability. The cost-of-ownership concept provides this tool and clearly shows the value of making procurement decisions based on "total costs" rather than just "purchase price." An analysis of cost-of-ownership shows that reliability related costs are much more significant than is generally recognized. Contact your local field sales office and request the brochure "Texas Instruments Lowers Semiconductor Cost-of-Ownership, SSYB057," if you would like more information about the concept.

OUTSTANDING QUALITY AND DELIVERY, COUPLED WITH LEADERSHIP RELIABILITY, LEADS TO LOWERED COST OF OWNERSHIP FOR TI CUSTOMERS.

[1]TI defines the "cost-of-ownership" as being composed of the purchase price, quality adders (for incoming inspection and board rework), inventory adders (for maintenance of a buffer inventory for suppliers who cannot meet JIT delivery), in-house reliability adders (for in-house system burn-in and system rework), and field reliability adders (for warranty and post-warranty field repairs).

QUALITY

TI's quality goals are being achieved through significant improvement in product quality by:

- better definition of customer requirements
- greater emphasis on quality as a design criterion
- improved control of incoming materials
- intensive training of supervisors and operators
- extensive use of statistical process control
- more complete automation of operations to minimize operator related defects.

Between 1981 and first quarter 1987, electrical quality for Linear products has improved by 98% (from 4200 ppm to 76 ppm). Digital products have improved by 99% (3622 ppm to 11 ppm) and DRAMs by 98% (2786 ppm to 44 ppm). As evidenced by more than 70 major quality awards in the last three years, significant improvement in product quality has been publicly recognized by TI's customers. Included among these awards are Ford's Q-1 award, the Naval Quality Award, and the Deming Prize – Japan's most prestigous quality award.

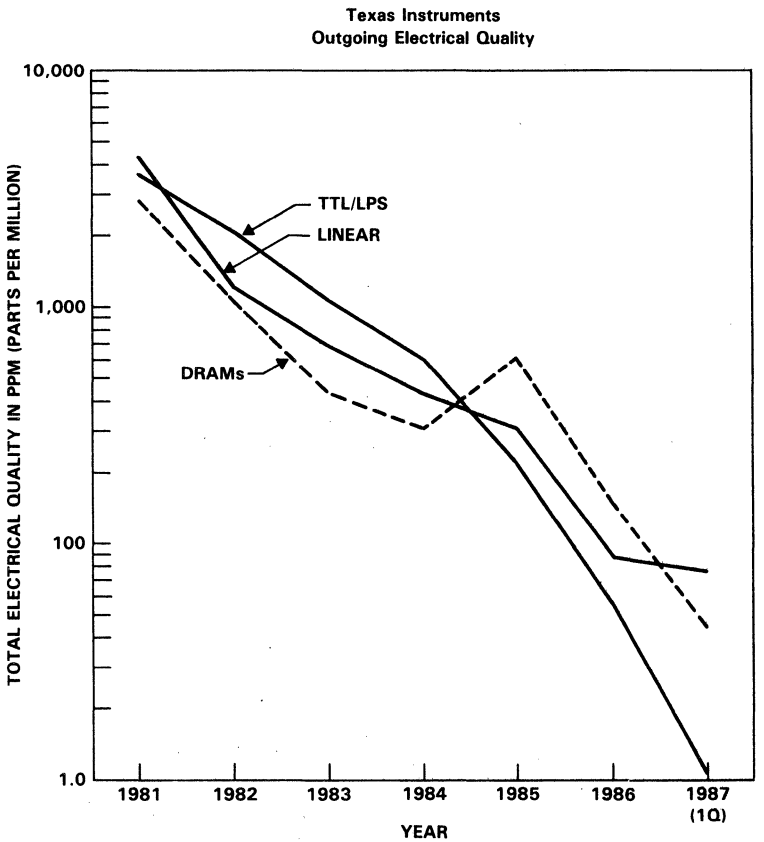


Figure 1

RELIABILITY

Recognizing the critical importance of low IC failure rates in system performance, TI continues in its goal to drive IC failure rates down through use of the following:

- rigid circuit design rules
- computer-aided-design (CAD) programs
- computer-aid programs to verify proper implementation of circuit design rules
- emphasis on statistical process control
- stringent qualification testing prior to product release
- routine reliability monitoring of released products
- extensive failure mode tracking/feedback system for IC failures.

Since the early 1980's, DRAMs, Linear ICs, and Bipolar Digital ICs have all exhibited a device failure rate improvement trend which approximately halves the failure rate every two years. However, since device complexity has also increased during this time period, the failure rate by function has improved (lowered) at an even faster pace. For example, the 1982 DRAM failure rate of 257 FITs[2] was on 64K DRAMs while the 1986 failure rate of 29 FITs is on 256K DRAMs. The 1986 failure rate estimate for Linear is 5 FITs, and for Bipolar Digital[3] is below 0.5 FITs. TI continues to emphasize reliability improvement as a major factor in reducing the total cost-of-ownership for its customers.

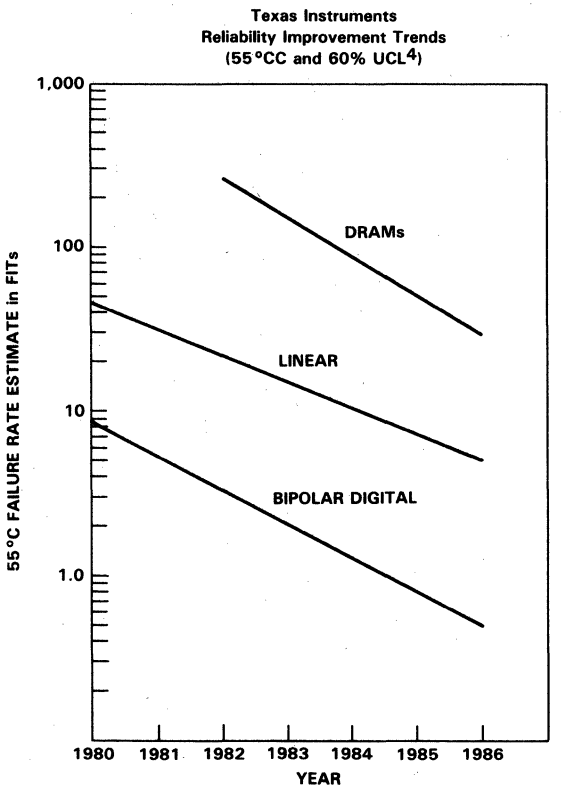


Figure 2

[2]One FIT is one failure per billion unit-hours

[3]Includes the following families: ACL, AS, ALS, 74F, LPS, STTL, TTL, PALs, and PROMs

[4]Upper Confidence Limit

SERVICE

Outstanding service is a key factor in achieving the lowest cost-of-ownership for TI customers. TI's efforts to provide outstanding service are focused on specific actions, programs, and systems which directly benefit its customers in the areas of delivery, responsiveness, ship-to-stock programs, and electronic data interchange, as delineated below.

- Delivery – to execute deliveries on committed dates with controlled transit times to assure customer receipt of product shipments in support of customer JIT programs.
- Responsiveness – to effect the timely response to special customer needs and situations, as exemplified by:
  1) short cycle times for:
     - print evaluations
     - disposition of returned material
     - analysis of failed devices
     - establishing test correlation
  2) timely technical assistance.
- Ship-to-stock Programs – to eliminate or at least minimize customer incoming product inspection.
- Electronic Data Interchange (EDI) – to provide a system approach for direct order entry and data exchange.

TI has also installed a fully integrated computer operating system to:

- provide automatic check of print and revision level approvals at time of order entry
- schedule capacity and material starts
- track orders through fabrication, test, and shipping.

TI's goals for service include: 100% on-time delivery, short lead times, reduction of customer inventory levels, and quick response to special customer needs and situations.

PRODUCT IDENTIFICATION AND INFORMATION

INTRODUCTION

This section provides the means of identifying TI semiconductor products and circuit design tools and support services. It includes an alphanumeric (A/N) index, sorted alphabetically to group like prefixes, and arranged in ascending numerical order, and a key-word functional index that matches functions to the appropriate TI part numbers. Both indexes are divided into two major segments — Application Specific Integrated Circuits (ASIC) and Catalog Products.

Contents **Page**

Alphanumeric Indexes 1-2
Application Specific Integrated Circuits (ASIC) Alphanumeric Index 1-2
Using the Alphanumeric Index 1-2
1-μm TGC100 Series CMOS Gate Arrays 1-4
1-μm TSC500 Series CMOS Standard Cells 1-7
2-μm SystemCell™ Series CMOS Standard Cells 1-13
Catalog Products Alphanumeric Index 1-19
Using the Alphanumeric Index 1-19
Section and Page Locator 1-19
TI Reference Document 1-19
Catalog Products 1-20
Functional Indexes 1-126
Application Specific Integrated Circuits (ASIC) Functional Index 1-126
Using the Functional Index 1-126
1-μm TGC100 Series CMOS Gate Arrays 1-128
1-μm TSC500 Series CMOS Standard Cells 1-133
2-μm SystemCell™ Series CMOS Standard Cells 1-142
Catalog Products Functional Index 1-151
Using the Functional Index 1-151
Catalog Products 1-152

ALPHANUMERIC INDEXES

Application Specific Integrated Circuits (ASIC) Alphanumeric Index

USING THE ALPHANUMERIC INDEX

The ASIC Alphanumeric Index begins with an explanation of TI's ASIC naming convention and an index of logic function prefixes. It is grouped into three categories:

- 1-μm TGC100 Series CMOS Gate Arrays
- 1-μm TSC500 Series CMOS Standard Cells
- 2-μm SystemCell Series CMOS Standard Cells

It lists and describes macros and cells within these categories as shown in the following example:

TSC500 SERIES 1-μm CMOS STANDARD CELLS

Cell Number	Description
AN510LJ	5-Input AND Gate
BU130LJ	Delay Buffer, 3X Drive
DE210LJ	2-Line to 4-Line Decoder
EN210LJ	2-Input Exclusive-NOR-Gate
EX210LJ	2-Input Exclusive-OR-Gate

The TI reference document, containing the most current technical data, is cited at the beginning of each category.

The naming convention for TI's gate array and standard cell functions is shown in Figure 1. An index of logic function prefixes is listed in Table 1.

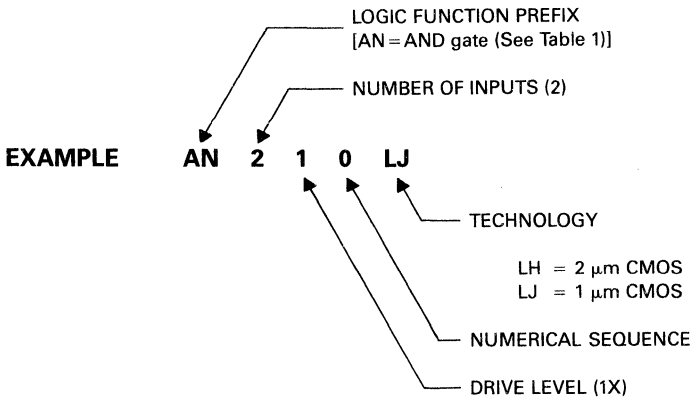


Figure 1. ASIC Naming Convention

Table 1. Index to Function Prefixes

PREFIX	DESCRIPTION	PREFIX	DESCRIPTION
AN	AND Gates	M	Microprocessor Bit-Slice Elements
AD	AND-OR Gates	MU	Multiplexers
BF	Multi-stage AND,NAND,NOR,OR Gates	MV	Multivibrator (One-Shot)
BU	Buffers	NA	NAND Gates
CO	Comparators	NO	NOR Gates
DE	Decoders/Demultiplexers	OP	Output Buffers
DF/DT	Flip-Flops, D-Type	OR	OR Gates
EN	Exclusive-NOR Gates	OS	Oscillators
EX	Exclusive-OR Gates	PD/PR	Pulldown/Pullup Terminators
FI	First-In, First-Out Memories	R	Shift Registers
GM/GS	S-R Latches, Gated Type	RA	Hardwired RAM Macro Cells
IO	Bidirectional I/O Buffers	RF	Register Files
IP	Input Buffers	S	Software Macros
IV	Inverters	TA	Flip-Flops, Toggle Type
JK	Flip-Flops, J-K Type	TD	Scan Flip-Flops
LA	Latches, D-Type and S-R	TO	Tie-Off Gate
LH	Bus Holder Latch		

1-μm TGC100 SERIES CMOS GATE ARRAYS*

*Technical data is contained in the TGC100 Series Family Data Sheet (SRGS006).

MACRO NUMBER	DESCRIPTION
AN210LJ	2-Input AND Gate
AN220LJ	2-Input AND Gate, 2X Drive
AN310LJ	3-Input AND Gate
AN320LJ	3-Input AND Gate, 2X Drive
AN410LJ	4-Input AND Gate
AN420LJ	4-Input AND Gate, 2X Drive
AN510LJ	5-Input AND Gate
AN810LJ	8-Input AND Gate
AO220LJ	AND-OR Gate, 2X Drive $Y=(A \cdot B)+(C \cdot D)$
AO221LJ	AND-NOR Gate, 2X Drive $Y=\overline{(A \cdot B)+(C \cdot D)}$
AO241LJ	2-Wide, 2-Input AND-OR Gate
BF001LJ	AND-NOR Gate $Y=\overline{A1+(B1 \cdot B2)}$
BF011LJ	AND-NOR Gate $Y=\overline{(A1 \cdot A2)+(B1 \cdot B2)+(C1 \cdot C2)}$
BF022LJ	OR-AND-NOR Gate $Y=A1 \cdot A2+[B1 \cdot B2 \cdot (C1+C2)]$
BF051LJ	OR-NAND Gate $Y=\overline{A1 \cdot (B1+B2)}$
BF053LJ	OR-NAND Gate $Y=\overline{(A1+A2) \cdot (B1+B2)}$
BU130LJ	Delay Buffer, 3X Drive
BU150LJ	Delay Buffer, 5X Drive
DFB20LJ	D-Type Flip-Flop with Preset, Clear, 2X Drive
DTB00LJ	D-Type Flip-Flop with Preset, Clear
DTB10LJ	D-Type Flip-Flop with Preset, Clear, 1X Drive
DTB20LJ	D-Type Flip-Flop with Preset, Clear, 2X Drive
DTC00LJ	D-Type Flip-Flop with Clear
DTC10LJ	D-Type Flip-Flop with Clear, 1X Drive
DTC20LJ	D-Type Flip-Flop with Clear, 2X Drive
DTN00LJ	D-Type Flip-Flop
DTN10LJ	D-Type Flip-Flop, 1X Drive
DTN20LJ	D-Type Flip-Flop, 2X Drive
DTP00LJ	D-Type Flip-Flop with Preset
DTP10LJ	D-Type Flip-Flop with Preset, 1X Drive
DTP20LJ	D-Type Flip-Flop with Preset, 2X Drive
EN210LJ	2-Input Exclusive-NOR Gate
EX210LJ	2-Input Exclusive-OR Gate
EX220LJ	2-Input Exclusive-OR Gate, 2X Drive
IO#21LJ	2-mA, 3-State I/O Buffer with CMOS Input
IO#24LJ	2-mA, 3-State I/O Buffer with TTL Input
IO#41LJ	4-mA, 3-State I/O Buffer with CMOS Input
IO#44LJ	4-mA, 3-State I/O Buffer with TTL Input
IO#81LJ	8-mA, 3-State I/O Buffer with CMOS Input
IO#84LJ	8-mA, 3-State I/O Buffer with TTL Input
IO#21LJ	2-mA, 3-State I/O Buffer with CMOS Input with Pull-Up
IO#24LJ	2-mA, 3-State I/O Buffer with TTL Input with Pull-Up
IO#41LJ	4-mA, 3-State I/O Buffer with CMOS Input with Pull-Up
IO#44LJ	4-mA, 3-State I/O Buffer with TTL Input with Pull-Up
IO#81LJ	8-mA, 3-State I/O Buffer with CMOS Input with Pull-Up
IO#84LJ	8-mA, 3-State I/O Buffer with TTL Input with Pull-Up
IO#21LJ	2-mA, 3-State I/O Buffer with CMOS Input with Pull-Down
IO#24LJ	2-mA, 3-State I/O Buffer with TTL Input with Pull-Down
IO#41LJ	4-mA, 3-State I/O Buffer with CMOS Input with Pull-Down
IO#44LJ	4-mA, 3-State I/O Buffer with TTL Input with Pull-Down
IO#81LJ	8-mA, 3-State I/O Buffer with CMOS Input with Pull-Down
IO#84LJ	8-mA, 3-State I/O Buffer with TTL Input with Pull-Down
IPI01LJ	CMOS-Compatible Input Buffer
IPI04LJ	TTL-Compatible Input Buffer
IPI06LJ	CMOS-Compatible Inverting Input Buffer with Hysteresis
IPL01LJ	CMOS-Compatible Input Buffer with Pullup Tap
IPL04LJ	TTL-Compatible Input Buffer with Pullup Tap
IPU01LJ	CMOS-Compatible Input Buffer with Pulldown Tap
IPU04LJ	TTL-Compatible Input Buffer with Pulldown Tap
IV110LJ	Inverter

Output buffers available with and without di/dt control. Output buffers with di/dt control reduce electromagnetic interference (EMI) and transient power requirements. Use of non-di/dt controlled buffers increases the number of power and ground pin requirements and should be limited to outputs with critical timing specifications.

MACRO NUMBER	DESCRIPTION
IV120LJ	Inverter, 2X Drive
IV140LJ	Inverter, 4X Drive
IV211LJ	Inverting 3-State Buffer with Low Enable
JKB20LJ	J-K Positive-Edge-Triggered Flip-Flop with Preset, Clear, 2X Drive
JKB21LJ	J-K Negative-Edge-Triggered Flip-Flop with Preset, Clear, 2X Drive
LAB20LJ	S-R Latch with 2X Drive
LAH20LJ	D-Type Latch with High Enable, 2X Drive
LAH22LJ	D-Type Latch with Low Enable and Clear, 2X Drive
LH110LJ	3-State Bus Holder
LH400LJ	4-Bit Latch
MU111LJ	2-Line to 1-Line Multiplexer
NA210LJ	2-Input NAND Gate
NA220LJ	2-Input NAND Gate, 2X Drive
NA310LJ	3-Input NAND Gate
NA320LJ	3-Input NAND Gate, 2X Drive
NA410LJ	4-Input NAND Gate
NA420LJ	4-Input NAND Gate, 2X Drive
NA510LJ	5-Input NAND Gate
NA520LJ	5-Input NAND Gate, 2X Drive
NA810LJ	8-Input NAND Gate
NA820LJ	8-Input NAND Gate, 2X Drive
NO210LJ	2-Input NOR Gate
NO220LJ	2-Input NOR Gate, 2X Drive
NO310LJ	3-Input NOR Gate
NO320LJ	3-Input NOR Gate, 2X Drive
NO410LJ	4-Input NOR Gate
NO420LJ	4-Input NOR Gate, 2X Drive
NO510LJ	5-Input NOR Gate
NO520LJ	5-Input NOR Gate, 2X Drive
NO810LJ	8-Input NOR Gate
NO820LJ	8-Input NOR Gate, 2X Drive
OA241LJ	2-Wide, 2-Input AND-OR Invert Gate
OP#20LJ	2-mA, Totem-Pole Output Buffer
OP#21LJ	2-mA, Open-Drain Output Buffer
OP#23LJ	2-mA, 3-State Output Buffer with Low Enable
OP#24LJ	2-mA, P-Channel Open-Drain Output Buffer
OP#40LJ	4-mA, Totem-Pole Output Buffer
OP#41LJ	4-mA, Open-Drain Output Buffer
OP#43LJ	4-mA, 3-State Output Buffer with Low Enable
OP#44LJ	4-mA, P-Channel Open-Drain Output Buffer
OP#80LJ	8-mA, Totem-Pole Output Buffer
OP#81LJ	8-mA, Open-Drain Output Buffer
OP#83LJ	8-mA, 3-State Output Buffer with Low Enable
OP#84LJ	8-mA, P-Channel Open-Drain Output Buffer
OR210LJ	2-Input OR Gate
OR220LJ	2-Input OR Gate, 2X Drive
OR310LJ	3-Input OR Gate
OR320LJ	3-Input OR Gate, 2X Drive
OR410LJ	4-Input OR Gate
OR420LJ	4-Input OR Gate, 2X Drive
OR510LJ	5-Input OR Gate
OR810LJ	8-Input OR Gate
R2405LJ	4-Bit Flip-Flops with Asynchronous Clear
R2406LJ	4-Bit Flip-Flops with Complementary Outputs
S085LJ	4-Bit Magnitude Comparator
S138LJ	3-Line to 8-Line Decoder/Demultiplexer
S139LJ	Dual 2-Line to 4-Line Decoder
S150LJ	16-Line to 1-Line Multiplexer
S151LJ	8-Line to 1-Line Multiplexer
S153LJ	Dual 4-Line to 1-Line Multiplexer

Output buffers available with and without di/dt control. Output buffers with di/dt control reduce electromagnetic interference (EMI) and transient power requirements. Use of non-di/dt controlled buffers increases the number of power and ground pin requirements and should be limited to outputs with critical timing specifications.

MACRO NUMBER	DESCRIPTION
S157LJ	Quad 2-Line to 1-Line Multiplexer
S161ALJ	Synchronous 4-Bit Binary Counter with Clear
S163ALJ	Synchronous 4-Bit Binary Counter
S164LJ	8-Bit Parallel-Out Serial Shift Register
S165LJ	Parallel-Load 8-Bit Shift Register
S173LJ	4-Bit D-Type Register with 3-State Outputs
S175LJ	Quad D-Type Flip-Flop with Complementary Outputs
S180XLJ	8-Bit Odd/Even Parity Tree
S181LJ	Arithmetic Logic Unit/Function Generator
S182LJ	4-Bit Look-Ahead Carry Generator
A191LJ	Synchronous Up/Down Bin Counter with Down/Up Mode Control
S193LJ	Synchronous 4-Bit Up/Down Counter (Dual Clock with Clear)
S194LJ	Bidirectional Universal Shift Register
S244LJ	Octal Internal Bus Buffer with 3-State Outputs
S273LJ	Octal D-Type Flip-Flop
S283LJ	4-Bit Binary Full Adder with Fast Carry
S373LJ	8-Bit D-Type Latch with 3-State Outputs
S374LJ	8-Bit D-Type Flip-Flop with 3-State Outputs
S375LJ	4-Bit Bistable Latch
S686LJ	8-Bit Magnitude Comparator
S688LJ	8-Bit Identity Comparator
TAB20LJ	Toggle Flip-Flop with Preset, Clear, 2X Drive
TO010LJ	High-Level and Low-Level Tie-Off Gate

1-μm TSC500 SERIES CMOS STANDARD CELLS*

*Technical data is contained in the TCS500 Series Family Data Sheet (SRSS033).

CELL NUMBER	DESCRIPTION
AN210LJ	2-Input AND Gate
AN220LJ	2-Input AND Gate, 2X Drive
AN240LJ	2-Input AND Gate, 4X Drive
AN260LJ	2-Input AND Gate, 6X Drive
AN310LJ	3-Input AND Gate
AN320LJ	3-Input AND Gate, 2X Drive
AN340LJ	3-Input AND Gate, 4X Drive
AN360LJ	3-Input AND Gate, 6X Drive
AN410LJ	4-Input AND Gate
AN420LJ	4-Input AND Gate, 2X Drive
AN440LJ	4-Input AND Gate, 4X Drive
AN460LJ	4-Input AND Gate, 6X Drive
AN510LJ	5-Input AND Gate
AN810LJ	8-Input AND Gate
AO220LJ	AND-OR Gate, 2X Drive $Y = (A \cdot B) + (C \cdot D)$
AO221LJ	AND-NOR Gate, 2X Drive $Y = \overline{(A \cdot B) + (C \cdot D)}$
BF001LJ	AND-NOR Gate $Y = \overline{A1 + (B1 \cdot B2)}$
BF002LJ	AND-NOR Gate $Y = \overline{A1 + (B1 \cdot B2 \cdot B3)}$
BF003LJ	AND-NOR Gate $Y = \overline{(A1 \cdot A2) + (B1 \cdot B2)}$
BF004LJ	AND-NOR Gate $Y = \overline{(A1 \cdot A2) + (B1 \cdot B2 \cdot B3)}$
BF005LJ	AND-NOR Gate $Y = \overline{(A1 \cdot A2 \cdot A3) + (B1 \cdot B2 \cdot B3)}$
BF006LJ	AND-NOR Gate $Y = \overline{A1 + A2 + (B1 \cdot B2)}$
BF007LJ	AND-NOR Gate $Y = \overline{A1 + A2 + (B1 \cdot B2 \cdot B3)}$
BF008LJ	AND-NOR Gate $Y = \overline{A1 + (B1 \cdot B2) + (C1 \cdot C2)}$
BF009LJ	AND-NOR Gate $Y = \overline{A1 + (B1 \cdot B2) + (C1 \cdot C2 \cdot C3)}$
BF010LJ	AND-NOR Gate $Y = \overline{A1 + (B1 \cdot B2 \cdot B3) + (C1 \cdot C2 \cdot C3)}$
BF011LJ	AND-NOR Gate $Y = \overline{(A1 \cdot A2) + (B1 \cdot B2) + (C1 \cdot C2)}$
BF012LJ	AND-NOR Gate $Y = \overline{(A1 \cdot A2) + (B1 \cdot B2) + (C1 \cdot C2 \cdot C3)}$
BF013LJ	AND-NOR Gate $Y = \overline{(A1 \cdot A2) + (B1 \cdot B2 \cdot B3) + (C1 \cdot C2 \cdot C3)}$
BF014LJ	AND-NOR Gate $Y = \overline{(A1 \cdot A2 \cdot A3) + (B1 \cdot B2 \cdot B3) + (C1 \cdot C2 \cdot C3)}$
BF015LJ	OR-AND-NOR Gate $Y = \overline{A1 + [B1 \cdot (C1 + C2)]}$
BF016LJ	AND-OR-NAND Gate $Y = \overline{A1 + [(B1 + B2) \cdot (C1 + C2)]}$
BF017LJ	OR-AND-NOR Gate $Y = \overline{A1 + [B1 \cdot B2 \cdot (C1 + C2)]}$
BF020LJ	OR-AND-NOR Gate $Y = \overline{A1 \cdot A2 + [B1 \cdot (C1 + C2)]}$
BF022LJ	OR-AND-NOR Gate $Y = \overline{A1 \cdot A2 + [B1 \cdot B2 \cdot (C1 + C2)]}$
BF025LJ	OR-AND-NOR Gate $Y = \overline{A1 \cdot A2 \cdot A3 + [B1 \cdot (C1 + C2)]}$
BF027LJ	OR-AND-NOR Gate $Y = \overline{A1 \cdot A2 \cdot A3 + [B1 \cdot B2 \cdot (C1 + C2)]}$
BF028LJ	OR-AND-NOR Gate $Y = \overline{A1 \cdot A2 \cdot A3 + [B1 \cdot (C1 + C2) \cdot (D1 + D2)]}$
BF030LJ	AND-OR-AND-NOR Gate $Y = \overline{A1 + \{B1 \cdot [C1 + (D1 \cdot D2)]\}}$
BF034LJ	AND-OR-AND-NOR Gate $Y = \overline{(A1 \cdot A2) + \{B1 \cdot [C1 + (D1 \cdot D2)]\}}$
BF035LJ	AND-OR-AND-NOR Gate $Y = \overline{(A1 \cdot A2) + \{B1 \cdot [(C1 \cdot C2) + (D1 \cdot D2)]\}}$
BF051LJ	OR-NAND Gate $Y = \overline{A1 \cdot (B1 + B2)}$
BF052LJ	OR-NAND Gate $Y = \overline{A1 \cdot (B1 + B2 + B3)}$
BF053LJ	OR-NAND Gate $Y = \overline{(A1 + A2) \cdot (B1 + B2)}$
BF054LJ	OR-NAND Gate $Y = \overline{(A1 + A2) \cdot (B1 + B2 + B3)}$
BF055LJ	OR-NAND Gate $Y = \overline{(A1 + A2 + A3) \cdot (B1 + B2 + B3)}$
BF056LJ	OR-NAND Gate $Y = \overline{A1 \cdot A2 \cdot (B1 + B2)}$
BF057LJ	OR-NAND Gate $Y = \overline{A1 \cdot A2 \cdot (B1 + B2 + B3)}$
BF058LJ	OR-NAND Gate $Y = \overline{A1 \cdot (B1 + B2) \cdot (C1 + C2)}$
BF059LJ	OR-NAND Gate $Y = \overline{A1 \cdot (B1 + B2) \cdot (C1 + C2 + C3)}$
BF060LJ	OR-NAND Gate $Y = \overline{A1 \cdot (B1 + B2 + B3) \cdot (C1 + C2 + C3)}$
BF062LJ	OR-NAND Gate $Y = \overline{(A1 + A2) \cdot (B1 + B2) \cdot (C1 + C2 + C3)}$
BF063LJ	OR-NAND Gate $Y = \overline{(A1 + A2) \cdot (B1 + B2 + B3) \cdot (C1 + C2 + C3)}$
BF064LJ	OR-NAND Gate $Y = \overline{(A1 + A2 + A3) \cdot (B1 + B2 + B3) \cdot (C1 + C2 + C3)}$
BF065LJ	AND-OR-NAND Gate $Y = \overline{A1 \cdot [B1 + (C1 \cdot C2)]}$
BF066LJ	AND-OR-NAND Gate $Y = \overline{A1 \cdot [(B1 \cdot B2) + (C1 \cdot C2)]}$
BF067LJ	AND-OR-NAND Gate $Y = \overline{A1 \cdot [B1 + B2 + (C1 \cdot C2)]}$
BF068LJ	AND-OR-NAND Gate $Y = \overline{A1 \cdot [B1 + (C1 \cdot C2) + (D1 \cdot D2)]}$
BF069LJ	AND-OR-NAND Gate $Y = \overline{A1 \cdot [(B1 \cdot B2) + (C1 \cdot C2) + (D1 \cdot D2)]}$
BF070LJ	AND-OR-NAND Gate $Y = \overline{(A1 + A2) \cdot [B1 + (C1 \cdot C2)]}$

CELL NUMBER	DESCRIPTION
BF071LJ	AND-OR-NAND Gate $Y=\overline{(A1+A2)\cdot[(B1\cdot B2)+(C1\cdot C2)]}$
BF072LJ	AND-OR-NAND Gate $Y=\overline{(A1+A2)\cdot[B1+B2+(C1\cdot C2)]}$
BF075LJ	AND-OR-NAND Gate $Y=\overline{(A1+A2+A3)\cdot[B1+(C1\cdot C2)]}$
BF080LJ	OR-AND-OR-NAND Gate $Y=\overline{A1\cdot\{B1+[C1\cdot(D1+D2)]\}}$
BF081LJ	OR-AND-OR-NAND Gate $Y=\overline{A1\cdot\{B1+[(C1+C2)\cdot(D1+D2)]\}}$
BF082LJ	OR-AND-OR-NAND Gate $Y=\overline{A1\cdot\{(B1\cdot B2)+[C1\cdot(D1+D2)]\}}$
BF088LJ	OR-AND-OR-NAND Gate $Y=\overline{(A1+A2+A3)\cdot\{B1+[C1\cdot(D1+D2)]\}}$
BU110LJ	Delay Buffer
BU111LJ	Inverting Delay Buffer
BU112LJ	Delay Buffer
BU120LJ	Delay Buffer, 2X Drive
BU130LJ	Delay Buffer, 3X Drive
BU221LJ	3-State Buffer with Low Enable, 2X Drive
BU222LJ	3-State Buffer with High Enable, 2X Drive
BU261LJ	3-State Buffer with Low Enable, 6X Drive
BU262LJ	3-State Buffer with High Enable, 6X Drive
DE210LJ	2-Line to 4-Line Decoder
DE212LJ	2-Line to 4-Line Decoder with High Enable
DFB20LJ	D-Type Flip-Flop with Preset, Clear, 2X Drive
DFC20LJ	D-Type Flip-Flop with Clear, 2X Drive
DFN20LJ	D-Type Flip-Flop, 2X Drive
DFP20LJ	D-Type Flip-Flop with Preset, 2X Drive
DFY20LJ	D-Type Flip-Flop with Grounded-D, Preset, 2X Drive
DFZ20LJ	D-Type Flip-Flop with Grounded-D Input, Preset, Clear, 2X Drive
DTB10LJ	D-Type Flip-Flop with Preset, Clear, 1X Drive
DTC10LJ	D-Type Flip-Flop with Clear, 1X Drive
DTN10LJ	D-Type Flip-Flop, 1X Drive
DTP10LJ	D-Type Flip-Flop with Preset, 1X Drive
EN210LJ	2-Input Exclusive-NOR Gate
EX210LJ	2-Input Exclusive-OR Gate
EX211LJ	2-Input Exclusive-OR Gate
EX220LJ	2-Input Exclusive-OR Gate, 2X Drive
EX221LJ	2-Input Exclusive-OR Gate, 2X Drive
EX240LJ	2-Input Exclusive-OR Gate, 4X Drive
EX241LJ	2-Input Exclusive-OR Gate, 4X Drive
FI503LJ	32-Word by 9-Bit FIFO with 3-State Outputs, Enhanced Flags
FI600LJ	64-Word by 8-Bit FIFO with 3-State Outputs
FI603LJ	64-Word by 9-Bit FIFO with 3-State Outputs, Enhanced Flags
FI703LJ	128-Word by 9-Bit FIFO with 3-State Outputs, Enhanced Flags
GMS10LJ	5-Input Gated S-R Latch with Separate Set
GM010LJ	4-Input Gated S-R Latch
GM110LJ	5-Input Gated S-R Latch with Separate Reset
GM210LJ	6-Input Gated S-R Latch with Separate Set, Reset
GM310LJ	6-Input Gated S-R Latch
GM410LJ	7-Input Gated S-R Latch with Separate Reset
GM510LJ	8-Input Gated S-R Latch with Separate Set, Reset
GSS10LJ	5-Input Gated S-R Latch with Separate Set
GS010LJ	4-Input Gated S-R Latch
GS110LJ	5-Input Gated S-R Latch with Separate Reset
GS210LJ	6-Input Gated S-R Latch with Separate Set, Reset
GS310LJ	6-Input Gated S-R Latch
GS410LJ	7-Input Gated S-R Latch with Separate Reset
GS510LJ	8-Input Gated S-R Latch with Separate Set, Reset
IO#21LJ	2-mA, Push-Pull I/O Buffer with CMOS Input
IO#41LJ	4-mA, Push-Pull I/O Buffer with CMOS Input
IO#61LJ	6-mA, Push-Pull I/O Buffer with CMOS Input
IO#01LJ	10-mA, Push-Pull I/O Buffer with CMOS Input
IO#A1LJ	16-mA, Push-Pull I/O Buffer with CMOS Input
IO#B1LJ	16/24-mA, Push-Pull I/O Buffer with CMOS Input
IO#E1LJ	16/48-mA, Push-Pull I/O Buffer with CMOS Input

Output buffers available with and without di/dt control. Output buffers with di/dt control reduce electromagnetic interference (EMI) and transient power requirements. Use of non-di/dt controlled buffers increases the number of power and ground pin requirements and should be limited to outputs with critical timing specifications.

CELL NUMBER	DESCRIPTION
IO#G1LJ	16/64-mA, Push-Pull I/O Buffer with CMOS Input
IO#24LJ	2-mA, Push-Pull I/O Buffer with TTL Input
IO#44LJ	4-mA, Push-Pull I/O Buffer with TTL Input
IO#64LJ	6-mA, Push-Pull I/O Buffer with TTL Input
IO#04LJ	10-mA, Push-Pull I/O Buffer with TTL Input
IO#A4LJ	16-mA, Push-Pull I/O Buffer with TTL Input
IO#B4LJ	16/24-mA, Push-Pull I/O Buffer with TTL Input
IO#E4LJ	16/48-mA, Push-Pull I/O Buffer with TTL Input
IO#G4LJ	16/64-mA, Push-Pull I/O Buffer with TTL Input
IO#2HLJ	2-mA, Open-Drain I/O Buffer with CMOS Input
IO#4HLJ	4-mA, Open-Drain I/O Buffer with CMOS Input
IO#6HLJ	6-mA, Open-Drain I/O Buffer with CMOS Input
IO#0HLJ	10-mA, Open-Drain I/O Buffer with CMOS Input
IO#AHLJ	16-mA, Open-Drain I/O Buffer with CMOS Input
IO#BHLJ	24-mA, Open-Drain I/O Buffer with CMOS Input
IO#EHLJ	48-mA, Open-Drain I/O Buffer with CMOS Input
IO#GHLJ	64-mA, Open-Drain I/O Buffer with CMOS Input
IO#2KLJ	2-mA, Open-Drain I/O Buffer with TTL Input
IO#4KLJ	4-mA, Open-Drain I/O Buffer with TTL Input
IO#6KLJ	6-mA, Open-Drain I/O Buffer with TTL Input
IO#0KLJ	10-mA, Open-Drain I/O Buffer with TTL Input
IO#AKLJ	16-mA, Open-Drain I/O Buffer with TTL Input
IO#BKLJ	24-mA, Open-Drain I/O Buffer with TTL Input
IO#EKLJ	48-mA, Open-Drain I/O Buffer with TTL Input
IO#GKLJ	64-mA, Open-Drain I/O Buffer with TTL Input
IPI01LJ	CMOS-Compatible Non-Inverting Input Buffer
IPI11LJ	CMOS-Compatible Non-Inverting Clock Buffer
IPI04LJ	TTL-Compatible Non-Inverting Input Buffer
IPI14LJ	TTL-Compatible Non-Inverting Clock Buffer
IPI07LJ	CMOS-Compatible Non-Inverting Input Buffer with Hysteresis
IPI09LJ	TTL-Compatible Non-Inverting Input Buffer with Hysteresis
IV101LJ	Inverter, 10X Drive
IV110LJ	Inverter
IV120LJ	Inverter, 2X Drive
IV130LJ	Inverter, 3X Drive
IV140LJ	Inverter, 4X Drive
IV160LJ	Inverter, 6X Drive
IV180LJ	Inverter, 8X Drive
IV211LJ	Inverting 3-State Buffer with Low Enable
IV212LJ	Inverting 3-State Buffer with High Enable
IV221LJ	Inverting 3-State Buffer with Low Enable, 2X Drive
IV222LJ	Inverting 3-State Buffer with High Enable, 2X Drive
IV241LJ	Inverting 3-State Buffer with Low Enable, 4X Drive
IV242LJ	Inverting 3-State Buffer with High Enable, 4X Drive
JKB20LJ	J-K Positive-Edge-Triggered Flip-Flop with Preset, Clear, 2X Drive
JKB21LJ	J-K Negative-Edge-Triggered Flip-Flop with Preset, Clear, 2X Drive
LAB10LJ	S-R Latch
LAB20LJ	S-R Latch, 2X Drive
LAH10LJ	D-Type Latch with High Enable
LAH11LJ	D-Type Latch with High Enable
LAH20LJ	D-Type Latch with High Enable, 2X Drive
LAH21LJ	D-Type Latch with High Enable, 2X Drive
LAL20LJ	D-Type Latch with Low Enable
LH110LJ	3-State Bus Holder
M01MPLJ	4-Bit Microprocessor Slice (2901)
M02CGLJ	Look-Ahead Carry Generator (2902)
M04SSLJ	Status and Shift Controller (2904)
M10MCLJ	Microprogram Controller (2910)
MU110LJ	2-Line to 1-Line Multiplexer with 3-State Output
MU111LJ	2-Line to 1-Line Multiplexer

Output buffers available with and without di/dt control. Output buffers with di/dt control reduce electromagnetic interference (EMI) and transient power requirements. Use of non-di/dt controlled buffers increases the number of power and ground pin requirements and should be limited to outputs with critical timing specifications.

CELL NUMBER	DESCRIPTION
MU210LJ	4-Line to 1-Line Multiplexer
MU211LJ	4-Line to 1-Line Multiplexer
MU310LJ	8-Line to 1-Line Multiplexer with 3-State Output
MU320LJ	8-Line to 1-Line Multiplexer, 2X Drive
NA210LJ	2-Input NAND Gate
NA220LJ	2-Input NAND Gate, 2X Drive
NA230LJ	2-Input NAND Gate, 3X Drive
NA240LJ	2-Input NAND Gate, 4X Drive
NA260LJ	2-Input NAND Gate, 6X Drive
NA310LJ	3-Input NAND Gate
NA320LJ	3-Input NAND Gate, 2X Drive
NA330LJ	3-Input NAND Gate, 3X Drive
NA340LJ	3-Input NAND Gate, 4X Drive
NA410LJ	4-Input NAND Gate
NA420LJ	4-Input NAND Gate, 2X Drive
NA430LJ	4-Input NAND Gate, 3X Drive
NA510LJ	5-Input NAND Gate
NA520LJ	5-Input NAND Gate, 2X Drive
NA810LJ	8-Input NAND Gate
NA820LJ	8-Input NAND Gate, 2X Drive
NO210LJ	2-Input NOR Gate
NO220LJ	2-Input NOR Gate, 2X Drive
NO230LJ	2-Input NOR Gate, 3X Drive
NO240LJ	2-Input NOR Gate, 4X Drive
NO310LJ	3-Input NOR Gate
NO320LJ	3-Input NOR Gate, 2X Drive
NO330LJ	3-Input NOR Gate, 3X Drive
NO410LJ	4-Input NOR Gate
NO420LJ	4-Input NOR Gate, 2X Drive
NO510LJ	5-Input NOR Gate
NO520LJ	5-Input NOR Gate, 2X Drive
NO810LJ	8-Input NOR Gate
NO820LJ	8-Input NOR Gate, 2X Drive
OP#20LJ	2-mA, Push-Pull Output Buffer
OP#40LJ	4-mA, Push-Pull Output Buffer
OP#60LJ	6-mA, Push-Pull Output Buffer
OP#00LJ	10-mA, Push-Pull Output Buffer
OP#A0LJ	16-mA, Push-Pull Output Buffer
OP#B0LJ	16/24-mA, Push-Pull Output Buffer
OP#E0LJ	16/48-mA, Push-Pull Output Buffer
OP#G0LJ	16/64-mA, Push-Pull Output Buffer
OP#21LJ	2-mA, Open-Drain Output Buffer
OP#41LJ	4-mA, Open-Drain Output Buffer
OP#61LJ	6-mA, Open-Drain Output Buffer
OP#01LJ	10-mA, Open-Drain Output Buffer
OP#A1LJ	16-mA, Open-Drain Output Buffer
OP#B1LJ	24-mA, Open-Drain Output Buffer
OP#E1LJ	48-mA, Open-Drain Output Buffer
OP#G1LJ	64-mA, Open-Drain Output Buffer
OP#23LJ	2-mA, 3-State Output Buffer
OP#43LJ	4-mA, 3-State Output Buffer
OP#63LJ	6-mA, 3-State Output Buffer
OP#03LJ	10-mA, 3-State Output Buffer
OP#A3LJ	16-mA, 3-State Output Buffer
OP#B3LJ	16/24-mA, 3-State Output Buffer
OP#E3LJ	16/48-mA, 3-State Output Buffer
OP#G3LJ	16/64-mA, 3-State Output Buffer
OR210LJ	2-Input OR Gate
OR220LJ	2-Input OR Gate, 2X Drive
OR240LJ	2-Input OR Gate, 4X Drive

Output buffers available with and without di/dt control. Output buffers with di/dt control reduce electromagnetic interference (EMI) and transient power requirements. Use of non-di/dt controlled buffers increases the number of power and ground pin requirements and should be limited to outputs with critical timing specifications.

CELL NUMBER	DESCRIPTION
OR260LJ	2-Input OR Gate, 6X Drive
OR310LJ	3-Input OR Gate
OR320LJ	3-Input OR Gate, 2X Drive
OR340LJ	3-Input OR Gate, 4X Drive
OR360LJ	3-Input OR Gate, 6X Drive
OR410LJ	4-Input OR Gate
OR420LJ	4-Input OR Gate, 2X Drive
OR440LJ	4-Input OR Gate, 4X Drive
OR460LJ	4-Input OR Gate, 6X Drive
OR510LJ	5-Input OR Gate
OR810LJ	8-Input OR Gate
OSI01LJ	75 MHz (MAX) Crystal-Controlled Oscillator
OSI02LJ	55 MHz (MAX) Crystal-Controlled Oscillator
OSI03LJ	35 MHz (MAX) Crystal-Controlled Oscillator
OSI04LJ	20 MHz (MAX) Crystal-Controlled Oscillator
PD095LJ	95-μA, Pulldown Active Terminator
PR005LJ	5-μA, Pullup Active Terminator
PR095LJ	95-μA, Pullup Active Terminator
PR250LJ	250-μA, Pullup Active Terminator
PR400LJ	5-μA, Pullup Active Terminator
PUC00LJ	Power-Up Clear One-Shot
R2401LJ	4-Bit Shift Register with Serial Inputs, Asynchronous Clear
R2402LJ	4-Bit Shift Register with Serial Inputs, Complementary Outputs
R2403LJ	4-Bit Shift Register with Serial and Parallel Inputs
R2404LJ	4-Bit Shift Register with Serial/Parallel Inputs, Complementary Outputs
R2405LJ	4-Bit Flip-Flops with Asynchronous Clear
R2406LJ	4-Bit Flip-Flops with Complementary Outputs
R2407LJ	4-Bit Flip-Flops with 3-State Outputs
R2408LJ	4-Bit Ripple Counter
RF400LJ	16-Word by 8-Bit 3-Port Register File with 3-State Outputs
RF401LJ	16-Word by 8-Bit 4-Port Register File with 3-State Outputs
RF402LJ	16-Word by 9-Bit 3-Port Register File with 3-State Outputs
RF600LJ	64-Word by 8-Bit 3-Port Register File with 3-State Outputs
RF601LJ	64-Word by 8-Bit 4-Port Register File with 3-State Outputs
RF602LJ	64-Word by 9-Bit 3-Port Register File with 3-State Outputs
S085LJ	4-Bit Magnitude Comparator
S137LJ	3-Line to 8-Line Decoder with Address Latches
S138LJ	3-Line to 8-Line Decoder/Demultiplexer
S139LJ	Dual 2-Line to 4-Line Decoder
S151LJ	8-Line to 1-Line Multiplexer
S153LJ	Dual 4-Line to 1-Line Multiplexer
S155LJ	Dual 2-Line to 4-Line Decoder with Data, Enable
S157LJ	Quad 2-Line to 1-Line Multiplexer
S158LJ	Quad 2-Line to 1-Line Inverting Multiplexer
S161ALJ	Synchronous 4-Bit Binary Counter with Clear
S163ALJ	Synchronous 4-Bit Binary Counter
S164LJ	8-Bit Parallel-Out Serial Shift Register
S165LJ	Parallel-Load 8-Bit Shift Register
S166LJ	Parallel-Load 8-Bit Shift Register with Clear
S173LJ	4-Bit D-Type Register with 3-State Outputs
S174LJ	Hex D-Type Flip-Flop
S175LJ	Quad D-Type Flip-Flop with Complementary Outputs
S177LJ	1-Bit and 3-Bit Binary Ripple Counters
S181LJ	Arithmetic Logic Unit/Function Generator
S191LJ	Synchronous 4-Bit Up/Down Binary Counter with Down/Up Mode Control
S193LJ	Synchronous 4-Bit Up/Down Counter (Dual Clock with Clear)
S194ALJ	Bidirectional Universal Shift Register
S195ALJ	4-Bit Parallel-Access Shift Register
S244LJ	Octal Internal Bus Buffer with 3-State Outputs
S245LJ	Octal Internal 3-State Bus Transceiver

CELL NUMBER	DESCRIPTION
S251LJ	8-Line to 1-Line Multiplexer with 3-State Outputs
S257ALJ	Quad 2-Line to 1-Line Multiplexer with 3-State Outputs
S258ALJ	Quad 2-Line to 1-Line Inverting Multiplexer with 3-State Outputs
S259LJ	8-Bit Addressable Latch
S273LJ	Octal D-Type Flip-Flop
S280LJ	9-Bit Odd/Even Parity Generator/Checker
S283LJ	4-Bit Binary Full Adder, Fast Carry
S298LJ	Quad 2-Input Multiplexer with Negative-Edge-Triggered Register
S299LJ	8-Bit Bidirectional Shift/Storage Register
S299XLJ	8-Bit Bidirectional Shift Register
S373LJ	8-Bit D-Type Latch with 3-State Outputs
S374LJ	8-Bit D-Type Flip-Flop with 3-State Outputs
S375LJ	4-Bit Bistable Latch
S393LJ	Dual 4-Bit Ripple Counters
S398LJ	Quad 2-Input Multiplexer with Complementary Output Register
S399LJ	Quad 2-Input Multiplexer with Edge-Triggered Register
S590LJ	8-Bit Binary Counter with 3-State Output Register
S593XLJ	8-Bit Binary Counter with Input Register
S595LJ	8-Bit Shift Register with 3-State Output Register
S598XLJ	8-Bit Shift Register with Input Register
S651LJ	8-Bit Bidirectional Register with Inverting Data Path
S652LJ	8-Bit Bidirectional Transceiver Register
S669LJ	Synchronous 4-Bit Up/Down Binary Counter with Look-Ahead
S686LJ	8-Bit Magnitude Comparator
S688LJ	8-Bit Identity Comparator
TAB20LJ	Toggle Flip-Flop with Preset, Clear, 2X Drive
TAC20LJ	Toggle Flip-Flop with Clear, 2X Drive
TAP20LJ	Toggle Flip-Flop with Preset, 2X Drive
TDC10LJ	D-Type Scan Flip-Flop with Clear
TDN10LJ	D-Type Scan Flip-Flop
TO010LJ	High-Level and Low-Level Tie-Off Gate

2-μm SystemCell™ SERIES CMOS STANDARD CELLS*

*Technical data is contained in the 2-μm CMOS StandardCell Databook (SRSD001).

CELL NUMBER	DESCRIPTION
AN210LH	2-Input AND Gate
AN220LH	2-Input AND Gate, 2X Drive
AN240LH	2-Input AND Gate, 4X Drive
AN260LH	2-Input AND Gate, 6X Drive
AN310LH	3-Input AND Gate
AN320LH	3-Input AND Gate, 2X Drive
AN340LH	3-Input AND Gate, 4X Drive
AN360LH	3-Input AND Gate, 6X Drive
AN410LH	4-Input AND Gate
AN420LH	4-Input AND Gate, 2X Drive
AN440LH	4-Input AND Gate, 4X Drive
AN460LH	4-Input AND Gate, 6X Drive
AN510LH	5-Input AND Gate
AN810LH	8-Input AND Gate
AO220LH	AND-OR Gate, 2X Drive $Y = (A \cdot B) + (C \cdot D)$
AO221LH	AND-NOR Gate, 2X Drive $Y = \overline{(A \cdot B) + (C \cdot D)}$
BF001LH	AND-NOR Gate $Y = \overline{A1 + (B1 \cdot B2)}$
BF002LH	AND-NOR Gate $Y = \overline{A1 + (B1 \cdot B2 \cdot B3)}$
BF003LH	AND-NOR Gate $Y = \overline{(A1 \cdot A2) + (B1 \cdot B2)}$
BF004LH	AND-NOR Gate $Y = \overline{(A1 \cdot A2) + (B1 \cdot B2 \cdot B3)}$
BF005LH	AND-NOR Gate $Y = \overline{(A1 \cdot A2 \cdot A3) + (B1 \cdot B2 \cdot B3)}$
BF006LH	AND-NOR Gate $Y = \overline{A1 + A2 + (B1 \cdot B2)}$
BF007LH	AND-NOR Gate $Y = \overline{A1 + A2 + (B1 \cdot B2 \cdot B3)}$
BF008LH	AND-NOR Gate $Y = \overline{A1 + (B1 \cdot B2) + (C1 \cdot C2)}$
BF009LH	AND-NOR Gate $Y = \overline{A1 + (B1 \cdot B2) + (C1 \cdot C2 \cdot C3)}$
BF010LH	AND-NOR Gate $Y = \overline{A1 + (B1 \cdot B2 \cdot B3) + (C1 \cdot C2 \cdot C3)}$
BF011LH	AND-NOR Gate $Y = \overline{(A1 \cdot A2) + (B1 \cdot B2) + (C1 \cdot C2)}$
BF012LH	AND-NOR Gate $Y = \overline{(A1 \cdot A2) + (B1 \cdot B2) + (C1 \cdot C2 \cdot C3)}$
BF013LH	AND-NOR Gate $Y = \overline{(A1 \cdot A2) + (B1 \cdot B2 \cdot B3) + (C1 \cdot C2 \cdot C3)}$
BF014LH	AND-NOR Gate $Y = \overline{(A1 \cdot A2 \cdot A3) + (B1 \cdot B2 \cdot B3) + (C1 \cdot C2 \cdot C3)}$
BF015LH	OR-AND-NOR Gate $Y = \overline{A1 + [B1 \cdot (C1 + C2)]}$
BF016LH	AND-OR-NAND Gate $Y = \overline{A1 + [(B1 + B2) \cdot (C1 + C2)]}$
BF017LH	OR-AND-NOR Gate $Y = \overline{A1 + [B1 \cdot B2 \cdot (C1 + C2)]}$
BF020LH	OR-AND-NOR Gate $Y = \overline{A1 \cdot A2 + [B1 \cdot (C1 + C2)]}$
BF022LH	OR-AND-NOR Gate $Y = \overline{A1 \cdot A2 + [B1 \cdot B2 \cdot (C1 + C2)]}$
BF025LH	OR-AND-NOR Gate $Y = \overline{A1 \cdot A2 \cdot A3 + [B1 \cdot (C1 + C2)]}$
BF027LH	OR-AND-NOR Gate $Y = \overline{A1 \cdot A2 \cdot A3 + [B1 \cdot B2 \cdot (C1 + C2)]}$
BF028LH	OR-AND-NOR Gate $Y = \overline{A1 \cdot A2 \cdot A3 + [B1 \cdot (C1 + C2) \cdot (D1 + D2)]}$
BF030LH	AND-OR-AND-NOR Gate $Y = \overline{A1 + \{B1 \cdot [C1 + (D1 \cdot D2)]\}}$
BF034LH	AND-OR-AND-NOR Gate $Y = \overline{(A1 \cdot A2) + \{B1 \cdot [C1 + (D1 \cdot D2)]\}}$
BF035LH	AND-OR-AND-NOR Gate $Y = \overline{(A1 \cdot A2) + \{B1 \cdot [(C1 \cdot C2) + (D1 \cdot D2)]\}}$
BF051LH	OR-NAND Gate $Y = \overline{A1 \cdot (B1 + B2)}$
BF052LH	OR-NAND Gate $Y = \overline{A1 \cdot (B1 + B2 + B3)}$
BF053LH	OR-NAND Gate $Y = \overline{(A1 + A2) \cdot (B1 + B2)}$
BF054LH	OR-NAND Gate $Y = \overline{(A1 + A2) \cdot (B1 + B2 + B3)}$
BF055LH	OR-NAND Gate $Y = \overline{(A1 + A2 + A3) \cdot (B1 + B2 + B3)}$
BF056LH	OR-NAND Gate $Y = \overline{A1 \cdot A2 \cdot (B1 + B2)}$
BF057LH	OR-NAND Gate $Y = \overline{A1 \cdot A2 \cdot (B1 + B2 + B3)}$
BF058LH	OR-NAND Gate $Y = \overline{A1 \cdot (B1 + B2) \cdot (C1 + C2)}$
BF059LH	OR-NAND Gate $Y = \overline{A1 \cdot (B1 + B2) \cdot (C1 + C2 + C3)}$
BF060LH	OR-NAND Gate $Y = \overline{A1 \cdot (B1 + B2 + B3) \cdot (C1 + C2 + C3)}$
BF062LH	OR-NAND Gate $Y = \overline{(A1 + A2) \cdot (B1 + B2) \cdot (C1 + C2 + C3)}$
BF063LH	OR-NAND Gate $Y = \overline{(A1 + A2) \cdot (B1 + B2 + B3) \cdot (C1 + C2 + C3)}$
BF064LH	OR-NAND Gate $Y = \overline{(A1 + A2 + A3) \cdot (B1 + B2 + B3) \cdot (C1 + C2 + C3)}$
BF065LH	AND-OR-NAND Gate $Y = \overline{A1 \cdot [B1 + (C1 \cdot C2)]}$
BF066LH	AND-OR-NAND Gate $Y = \overline{A1 \cdot [(B1 \cdot B2) + (C1 \cdot C2)]}$
BF067LH	AND-OR-NAND Gate $Y = \overline{A1 \cdot [B1 + B2 + (C1 \cdot C2)]}$
BF068LH	AND-OR-NAND Gate $Y = \overline{A1 \cdot [B1 + (C1 \cdot C2) + (D1 \cdot D2)]}$
BF069LH	AND-OR-NAND Gate $Y = \overline{A1 \cdot [(B1 \cdot B2) + (C1 \cdot C2) + (D1 \cdot D2)]}$
BF070LH	AND-OR-NAND Gate $Y = \overline{(A1 + A2) \cdot [B1 + (C1 \cdot C2)]}$

CELL NUMBER	DESCRIPTION
BF071LH	AND-OR-NAND Gate $Y=\overline{(A1+A2)\cdot[(B1\cdot B2)+(C1\cdot C2)]}$
BF072LH	AND-OR-NAND Gate $Y=\overline{(A1+A2)\cdot[B1+B2+(C1\cdot C2)]}$
BF075LH	AND-OR-NAND Gate $Y=\overline{(A1+A2+A3)\cdot[B1+(C1\cdot C2)]}$
BF080LH	OR-AND-OR-NAND Gate $Y=\overline{A1\cdot\{B1+[C1\cdot(D1+D2)]\}}$
BF081LH	OR-AND-OR-NAND Gate $Y=\overline{A1\cdot\{B1+[(C1+C2)\cdot(D1+D2)]\}}$
BF082LH	OR-AND-OR-NAND Gate $Y=\overline{A1\cdot\{(B1\cdot B2)+[C1\cdot(D1+D2)]\}}$
BF088LH	OR-AND-OR-NAND Gate $Y=\overline{(A1+A2+A3)\cdot\{B1+[C1\cdot(D1+D2)]\}}$
BU110LH	Delay Buffer
BU111LH	Inverting Delay Buffer
BU112LH	Delay Buffer
BU120LH	Delay Buffer, 2X Drive
BU130LH	Delay Buffer, 3X Drive
BU221LH	3-State Buffer with Low Enable, 2X Drive
BU222LH	3-State Buffer with High Enable, 2X Drive
BU261LH	3-State Buffer with Low Enable, 6X Drive
BU262LH	3-State Buffer with High Enable, 6X Drive
DE210LH	2-Line to 4-Line Decoder
DE212LH	2-Line to 4-Line Decoder with High Enable
DFB20LH	D-Type Flip-Flop with Preset, Clear, 2X Drive
DFC20LH	D-Type Flip-Flop with Clear, 2X Drive
DFN20LH	D-Type Flip-Flop, 2X Drive
DFP20LH	D-Type Flip-Flop with Preset, 2X Drive
DFY20LH	D-Type Flip-Flop with Grounded-D, Preset, 2X Drive
DFZ20LH	D-Type Flip-Flop with Grounded-D Input, Preset, Clear, 2X Drive
DTB10LH	D-Type Flip-Flop with Preset, Clear, 1X Drive
DTC10LH	D-Type Flip-Flop with Clear, 1X Drive
DTN10LH	D-Type Flip-Flop, 1X Drive
DTP10LH	D-Type Flip-Flop with Preset, 1X Drive
EN210LH	2-Input Exclusive-NOR Gate
EX210LH	2-Input Exclusive-OR Gate
EX211LH	2-Input Exclusive-OR Gate
EX220LH	2-Input Exclusive-OR Gate, 2X Drive
EX221LH	2-Input Exclusive-OR Gate, 2X Drive
EX240LH	2-Input Exclusive-OR Gate, 4X Drive
EX241LH	2-Input Exclusive-OR Gate, 4X Drive
GMS10LH	5-Input Gated S-R Latch with Separate Set
GM010LH	4-Input Gated S-R Latch
GM110LH	5-Input Gated S-R Latch with Separate Reset
GM210LH	6-Input Gated S-R Latch with Separate Set, Reset
GM310LH	6-Input Gated S-R Latch
GM410LH	7-Input Gated S-R Latch with Separate Reset
GM510LH	8-Input Gated S-R Latch with Separate Set, Reset
GSS10LH	5-Input Gated S-R Latch with Separate Set
GS010LH	4-Input Gated S-R Latch
GS110LH	5-Input Gated S-R Latch with Separate Reset
GS210LH	Input Gated S-R Latch with Separate Set, Reset
GS310LH	6-Input Gated S-R Latch
GS410LH	7-Input Gated S-R Latch with Separate Reset
GS510LH	8-Input Gated S-R Latch with Separate Set, Reset
IOFB4LH	24-mA, 3-State I/O Buffer with TTL Input
IOFB8LH	24-mA, 3-State I/O Buffer with TTL Input
IOFD8LH	44-mA, 3-State I/O Buffer with Inverting TTL Input
IOFE8LH	48-mA, Open-Drain I/O Buffer with Inverting TTL Input, Hysteresis
IOF00LH	10-mA, 3-State I/O Buffer with Inverting CMOS Input
IOF01LH	10-mA, 3-State I/O Buffer with CMOS Input
IOF03LH	10-mA, 3-State I/O Buffer with Inverting TTL Input
IOF04LH	10-mA, 3-State I/O Buffer with TTL Input
IOF21LH	2-mA, 3-State I/O Buffer with CMOS Input
IOF24LH	2-mA, 3-State I/O Buffer with TTL Input
IOF40LH	4-mA, 3-State I/O Buffer with Inverting CMOS Input

CELL NUMBER	DESCRIPTION
IOF41LH	4-mA, 3-State I/O Buffer with CMOS Input
IOF43LH	4-mA, 3-State I/O Buffer with Inverting TTL Input
IOF44LH	4-mA, 3-State I/O Buffer with TTL Input
IOF47LH	4-mA, 3-State I/O Buffer with Inverting CMOS Input with Hysteresis
IOF48LH	4-mA, 3-State I/O Buffer with Inverting TTL Input with Hysteresis
IOF64LH	6-mA, 3-State I/O Buffer with TTL Input
IPF00LH	CMOS-Compatible Inverting Input Buffer
IPF01LH	CMOS-Compatible Input Buffer
IPF02LH	CMOS-Compatible Inverting Input Buffer with Pullup Tap
IPF03LH	TTL-Compatible Inverting Input Buffer
IPF04LH	TTL-Compatible Input Buffer
IPF05LH	TTL-Compatible Inverting Input Buffer with Pullup Tap
IPF06LH	CMOS Inverting Input Buffer with Hysteresis
IPF08LH	TTL Inverting Input Buffer with Hysteresis, Pullup Tap
IPF10LH	TTL Input Buffer with Hysteresis, Pullup Tap
IPF12LH	TTL-Compatible Input Buffer
IPF13LH	TTL-Compatible Inverting Input Buffer with Pullup Tap
IV101LH	Inverter, 10X Drive
IV110LH	Inverter
IV120LH	Inverter, 2X Drive
IV130LH	Inverter, 3X Drive
IV140LH	Inverter, 4X Drive
IV160LH	Inverter, 6X Drive
IV180LH	Inverter, 8X Drive
IV211LH	Inverting 3-State Buffer with Low Enable
IV212LH	Inverting 3-State Buffer with High Enable
IV221LH	Inverting 3-State Buffer with Low Enable, 2X Drive
IV222LH	Inverting 3-State Buffer with High Enable, 2X Drive
IV241LH	Inverting 3-State Buffer with Low Enable, 4X Drive
IV242LH	Inverting 3-State Buffer with High Enable, 4X Drive
JKB20LH	J-K Positive-Edge-Triggered Flip-Flop with Preset, Clear, 2X Drive
JKB21LH	J-K Negative-Edge-Triggered Flip-Flop with Preset, Clear, 2X Drive
LAB10LH	S-R Latch
LAB20LH	S-R Latch, 2X Drive
LAH10LH	D-Type Latch with High Enable
LAH11LH	D-Type Latch with High Enable
LAH20LH	D-Type Latch with High Enable, 2X Drive
LAH21LH	D-Type Latch with High Enable, 2X Drive
LAL20LH	D-Type Latch with Low Enable
LH110LH	3-State Bus Holder
MU110LH	2-Line to 1-Line Multiplexer with 3-State Output
MU111LH	2-Line to 1-Line Multiplexer
MU210LH	4-Line to 1-Line Multiplexer
MU211LH	4-Line to 1-Line Multiplexer
MU310LH	8-Line to 1-Line Multiplexer with 3-State Output
MU320LH	8-Line to 1-Line Multiplexer, 2X Drive
MVF00LH	Retriggerable Monostable Multivibrator
NA210LH	2-Input NAND Gate
NA220LH	2-Input NAND Gate, 2X Drive
NA230LH	2-Input NAND Gate, 3X Drive
NA240LH	2-Input NAND Gate, 4X Drive
NA260LH	2-Input NAND Gate, 6X Drive
NA310LH	3-Input NAND Gate
NA320LH	3-Input NAND Gate, 2X Drive
NA330LH	3-Input NAND Gate, 3X Drive
NA340LH	3-Input NAND Gate, 4X Drive
NA410LH	4-Input NAND Gate
NA420LH	4-Input NAND Gate, 2X Drive
NA430LH	4-Input NAND Gate, 3X Drive
NA510LH	5-Input NAND Gate

CELL NUMBER	DESCRIPTION
NA520LH	5-Input NAND Gate, 2X Drive
NA810LH	8-Input NAND Gate
NA820LH	8-Input NAND Gate, 2X Drive
NO210LH	2-Input NOR Gate
NO220LH	2-Input NOR Gate, 2X Drive
NO230LH	2-Input NOR Gate, 3X Drive
NO240LH	2-Input NOR Gate, 4X Drive
NO310LH	3-Input NOR Gate
NO320LH	3-Input NOR Gate, 2X Drive
NO330LH	3-Input NOR Gate, 3X Drive
NO410LH	4-Input NOR Gate
NO420LH	4-Input NOR Gate, 2X Drive
NO510LH	5-Input NOR Gate
NO520LH	5-Input NOR Gate, 2X Drive
NO810LH	8-Input NOR Gate
NO820LH	8-Input NOR Gate, 2X Drive
OPFB0LH	24-mA, Totem-Pole Output Buffer
OPFB3LH	24-mA, 3-State Output Buffer with Low Enable
OPFD3LH	44-mA, 3-State Output Buffer with Low Enable
OPFE1LH	48-mA, Open-Drain Output Buffer
OPF00LH	10-mA, Totem-Pole Output Buffer
OPF01LH	10-mA, Open-Drain Output Buffer
OPF03LH	10-mA, 3-State Output Buffer with Low Enable
OPF20LH	2-mA, Totem-Pole Output Buffer
OPF23LH	2-mA, 3-State Output Buffer with Low Enable
OPF40LH	4-mA, Totem-Pole Output Buffer
OPF41LH	4-mA, Open-Drain Output Buffer
OPF43LH	4-mA, 3-State Output Buffer with Low Enable
OPF60LH	6-mA, Totem-Pole Output Buffer
OPF61LH	6-mA, Open-Drain Output Buffer
OPF63LH	6-mA, 3-State Output Buffer with Low Enable
OR210LH	2-Input OR Gate
OR220LH	2-Input OR Gate, 2X Drive
OR240LH	2-Input OR Gate, 4X Drive
OR260LH	2-Input OR Gate, 6X Drive
OR310LH	3-Input OR Gate
OR320LH	3-Input OR Gate, 2X Drive
OR340LH	3-Input OR Gate, 4X Drive
OR360LH	3-Input OR Gate, 6X Drive
OR410LH	4-Input OR Gate
OR420LH	4-Input OR Gate, 2X Drive
OR440LH	4-Input OR Gate, 4X Drive
OR460LH	4-Input OR Gate, 6X Drive
OR510LH	5-Input OR Gate
OR810LH	8-Input OR Gate
OSF00LH	5-MHz (MAX) Crystal-Controlled Oscillator
OSF01LH	100-kHz (MAX) RC Oscillator
OSF06LH	800-kHz (MAX) Crystal-Controlled Oscillator
OSF07LH	200-kHz (MAX) RC Oscillator
PD095LH	95-μA, Pulldown Active Terminator
PR005LH	5-μA, Pullup Active Terminator
PR095LH	95-μA, Pullup Active Terminator
PR250LH	250-μA, Pullup Active Terminator
PR400LH	5-μA, Pullup Active Terminator
PUC00LH	Power-Up Clear One-Shot
RA408LH	16-Word by 8-Bit Static Read/Write RAM with 3-State Outputs
RA608LH	64-Word by 8-Bit Static Read/Write RAM with 3-State Outputs
RA708LH	128-Word by 8-Bit Static Read/Write RAM with 3-State Outputs
RA802LH	256-Word by 2-Bit Static Read/Write RAM with 3-State Outputs
RF408LH	16-Word by 8-Bit 3-Port Register File

CELL NUMBER	DESCRIPTION
R2401LH	4-Bit Shift Register with Serial Input, Asynchronous Clear
R2402LH	4-Bit Shift Register with Serial Input, Complementary Outputs
R2403LH	4-Bit Shift Register with Serial and Parallel Inputs
R2404LH	4-Bit Shift Register with Serial/Parallel Inputs, Complementary Outputs
R2405LH	4-Bit Flip-Flops with Asynchronous Clear
R2406LH	4-Bit Flip-Flops with Complementary Outputs
R2407LH	4-Bit Flip-Flops with 3-State Outputs
R2408LH	4-Bit Ripple Counter
S085LH	4-Bit Magnitude Comparator
S137LH	3-Line to 8-Line Decoder with Address Latches
S138LH	3-Line to 8-Line Decoder/Demultiplexer
S139LH	Dual 2-Line to 4-Line Decoder
S151LH	8-Line to 1-Line Multiplexer
S153LH	Dual 4-Line to 1-Line Multiplexer
S155LH	Dual 2-Line to 4-Line Decoder with Data, Enable
S157LH	Quad 2-Line to 1-Line Multiplexer
S158LH	Quad 2-Line to 1-Line Inverting Multiplexer
S161ALH	Synchronous 4-Bit Binary Counter with Clear
S163ALH	Synchronous 4-Bit Binary Counter
S164LH	8-Bit Parallel-Out Serial Shift Register
S165LH	Parallel-Load 8-Bit Shift Register
S166LH	Parallel-Load 8-Bit Shift Register with Clear
S173LH	4-Bit D-Type Register with 3-State Outputs
S174LH	Hex D-Type Flip-Flop
S175LH	Quad D-Type Flip-Flop with Complementary Outputs
S177LH	1-Bit and 3-Bit Binary Ripple Counters
S181LH	Arithmetic Logic Unit/Function Generator
S191LH	Synchronous 4-bit Up/Down Binary Counter with Down/Up Mode Control
S193LH	Synchronous 4-Bit Up/Down Counter (Dual Clock with Clear)
S194ALH	Bidirectional Universal Shift Register
S195ALH	4-Bit Parallel-Access Shift Register
S244LH	Octal Internal Bus Buffer with 3-State Outputs
S245LH	Octal Internal 3-State Bus Transceiver
S251LH	8-Line to 1-Line Multiplexer with 3-State Outputs
S257ALH	Quad 2-Line to 1-Line Multiplexer with 3-State Outputs
S258ALH	Quad 2-Line to 1-Line Inverting Multiplexer with 3-State Outputs
S259LH	8-Bit Addressable Latch
S273LH	Octal D-Type Flip-Flop
S280LH	9-Bit Odd/Even Parity Generator/Checker
S283LH	4-Bit Binary Full Adder, Fast Carry
S298LH	Quad 2-Input Multiplexer with Negative-Edge-Triggered Register
S299LH	8-Bit Bidirectional Shift/Storage Register
S299XLH	8-Bit Bidirectional Shift Register
S373LH	8-Bit D-Type Latch with 3-State Outputs
S374LH	8-Bit D-Type Flip-Flop with 3-State Outputs
S375LH	4-Bit Bistable Latch
S393LH	Dual 4-Bit Ripple Counters
S398LH	Quad 2-Input Multiplexer with Complementary Output Register
S399LH	Quad 2-Input Multiplexer with Edge-Triggered Register
S590LH	8-Bit Binary Counter with 3-State Output Register
S593XLH	8-Bit Binary Counter with Input Register
S595LH	8-Bit Shift Register with 3-State Out Register
S598XLH	8-Bit Shift Register with Input Register
S651LH	8-Bit Bidirectional Register with Inverting Data Path
S652LH	8-Bit Bidirectional Transceiver Register
S669LH	Synchronous 4-Bit Up/Down Binary Counter with Look-Ahead
S686LH	8-Bit Magnitude Comparator
S688LH	8-Bit Identity Comparator
TAB20LH	Toggle Flip-Flop with Preset, Clear, 2X Drive
TAC20LH	Toggle Flip-Flop with Clear, 2X Drive

CELL NUMBER	DESCRIPTION
TAP20LH	Toggle Flip-Flop with Preset, 2X Drive
TO010LH	High-Level and Low-Level Tie-Off Gate

Catalog Products Alphanumeric Index

USING THE ALPHANUMERIC INDEX

The Catalog Products Alphanumeric Index lists and describes all other TI semiconductor products and services — all products-package options are shown for clarity. The index references the section and page, within the Guide, containing additional information on a particular product or circuit design tool and support service, and cites the TI reference document containing the most current technical data. An example follows:

Product Number	General Description	Section and Page	TI Reference Document
SN74ALS2541DW	Octal Buffer and Line Driver	3-17	SDAD001B
SN74ALS2541FN	Octal Buffer and Line Driver	3-17	SDAD001B
SN74ALS2541N	Octal Buffer and Line Driver	3-17	SDAD001B
SN74ALS2967JD	Dynamic Memory Controller	3-33	SDAS121A
SN74ALS2968JD	Dynamic Memory Controller	3-33	SDAS121A
SN74ALS6301JD	Dynamic Memory Controller	3-33	SDAS120A
SN74ALS8003AP	Dual 2-Input NAND Gate	3-4	SDAD001B

SECTION AND PAGE LOCATOR

Column headings 'Section and Page' reference the section(s) and page(s) within the Guide containing additional information on specific products or circuit design tools and support services.

Familiarity with the numbering sequence makes the Product Identification and Information Section of the Master Selection Guide easy to use.

TI REFERENCE DOCUMENT

Column headings 'TI Reference Document' provides the latest available technical source for a particular product. TI's technical literature is identified by a seven- or eight-character product source code consisting of four (4) alpha characters, three (3) numeric characters, and a revision letter if applicable. The fourth alpha character designates a particular document as follows:

CODES	DESCRIPTION
D	Data Books
S	Data Sheets, Data Manuals on single products

For example, literature code SDLD001 identifies a data book, code SPRT036 a data sheet, and code SLNS003A a revised data sheet. The code is printed at the upper right-hand corner on the front cover and the lower left-hand corner on the back cover of a data book, and at the lower left-hand corner on the back page of a data sheet.

Section 12 of the Guide provides the reader with instructions for obtaining technical literature from Texas Instruments.

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
ADC0803CN	A/D Converter	7-14	SLYD002
ADC0803IN	A/D Converter	7-14	SLYD002
ADC0804CN	A/D Converter	7-14	SLYD002
ADC0804IN	A/D Converter	7-14	SLYD002
ADC0805CN	A/D Converter	7-14	SLYD002
ADC0805IN	A/D Converter	7-14	SLYD002
ADC0808FN	A/D Converter	7-14	SLYD002
ADC0808MFK	A/D Converter	7-14	SLYD002
ADC0808MJ	A/D Converter	7-14	SLYD002
ADC0808N	A/D Converter	7-14	SLYD002
ADC0809FN	A/D Converter	7-14	SLYD002
ADC0809N	A/D Converter	7-14	SLYD002
ADC0831ACP	A/D Converter Peripheral	7-14	SLYD002
ADC0831AIP	A/D Converter Peripheral	7-14	SLYD002
ADC0831BCP	A/D Converter Peripheral	7-14	SLYD002
ADC0831BIP	A/D Converter Peripheral	7-14	SLYD002
ADC0832ACP	A/D Converter Peripheral	7-14	SLYD002
ADC0832AIP	A/D Converter Peripheral	7-14	SLYD002
ADC0832BCP	A/D Converter Peripheral	7-14	SLYD002
ADC0832BIP	A/D Converter Peripheral	7-14	SLYD002
ADC0834ACN	A/D Converter Peripheral	7-14	SLYD002
ADC0834AIN	A/D Converter Peripheral	7-14	SLYD002
ADC0834BCN	A/D Converter Peripheral	7-14	SLYD002
ADC0834BIN	A/D Converter Peripheral	7-14	SLYD002
ADC0838ACN	A/D Converter Peripheral	7-14	SLYD002
ADC0838AIN	A/D Converter Peripheral	7-14	SLYD002
ADC0838BCN	A/D Converter Peripheral	7-14	SLYD002
ADC0838BIN	A/D Converter Peripheral	7-14	SLYD002
AM26LS31CD	Line Driver	6-2	SLYD002
AM26LS31CJ	Line Driver	6-2	SLYD002
AM26LS31CN	Line Driver	6-2	SLYD002
AM26LS32ACD	Line Receiver	6-3	SLYD002
AM26LS32ACJ	Line Receiver	6-3	SLYD002
AM26LS32ACN	Line Receiver	6-3	SLYD002
AM26LS32AMFK	Line Receiver	6-3	SLYD002
AM26LS32AMJ	Line Receiver	6-3	SLYD002
AM26LS33ACD	Line Receiver	6-4	SLYD002
AM26LS33ACJ	Line Receiver	6-4	SLYD002
AM26LS33ACN	Line Receiver	6-4	SLYD002
AM26LS33AMFK	Line Receiver	6-4	SLYD002
AM26LS33AMJ	Line Receiver	6-4	SLYD002
AM26S10CD	Bus Transceiver	6-5	SLYD002
AM26S10CJ	Bus Transceiver	6-5	SLYD002
AM26S10CN	Bus Transceiver	6-5	SLYD002
AM26S11CD	Bus Transceiver	6-5	SLYD002
AM26S11CJ	Bus Transceiver	6-5	SLYD002
AM26S11CN	Bus Transceiver	6-5	SLYD002
DS3680D	Telephone Relay Driver	6-10,9-5	SLYD002
DS3680J	Telephone Relay Driver	6-10,9-5	SLYD002
DS3680N	Telephone Relay Driver	6-10,9-5	SLYD002
DS7831FK	Quad Transceiver	—	LCC5921
DS7831J	Quad Transceiver	—	LCC5921
DS7831W	Quad Transceiver	—	LCC5921
DS7832FK	Quad Transceiver	—	LCC5921
DS7832J	Quad Transceiver	—	LCC5921
DS7832W	Quad Transceiver	—	LCC5921
HCPL2502	Optocoupler	8-5	SOYD002
HCPL2601	Optocoupler	8-6	SOYD002
HCPL2630	Optocoupler	8-6	SOYD002
JANTXV4N22	Optocoupler	—	SOYD002

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
JANTXV4N23	Optocoupler	—	SOYD002
JANTXV4N24	Optocoupler	—	SOYD002
JANTXV4N47	Optocoupler	—	SOYD002
JANTXV4N48	Optocoupler	—	SOYD002
JANTXV4N49	Optocoupler	—	SOYD002
JANTX4N22	Optocoupler	—	SOYD002
JANTX4N23	Optocoupler	—	SOYD002
JANTX4N24	Optocoupler	—	SOYD002
JANTX4N47	Optocoupler	—	SOYD002
JANTX4N48	Optocoupler	—	SOYD002
JANTX4N49	Optocoupler	—	SOYD002
JAN4N22	Optocoupler	—	SOYD002
JAN4N23	Optocoupler	—	SOYD002
JAN4N24	Optocoupler	—	SOYD002
JAN4N47	Optocoupler	—	SOYD002
JAN4N48	Optocoupler	—	SOYD002
JAN4N49	Optocoupler	—	SOYD002
JBP18S030J	256 Bits PROM with 3-State Outputs	—	SDZD001B
JBP24S10J	Standard & Low Power PROM	—	SDZD001B
JBP28L22J	Low Power PROM with 3-State Outputs	—	SDZD001B
JBP28L42J	Low Power PROM with 3-State Outputs	—	SDZD001B
JBP28L86AJ	Low Power PROM with 3-State Outputs	—	SDZD001B
JBP28S42J	Low Power PROM with 3-State Outputs	—	SDZD001B
JBP38L165JT	Low Power PROM with 3-State Outputs	—	SDZD001B
JBP38L167FK	Low Power PROM with 3-State Outputs	—	SDZD001B
JBP38S165JT	Standard PROM with 3-State Outputs	—	SDZD001B
JBP38S167FK	Standard PROM with 3-State Outputs	—	SDZD001B
LF347BN	Operational Amplifier	7-9	SLOS013
LF347D	Operational Amplifier	7-9	SLOS013
LF347N	Operational Amplifier	7-9	SLOS013
LF351D	Operational Amplifier	7-4	SLOS014
LF351P	Operational Amplifier	7-4	SLOS014
LF353D	Operational Amplifier	7-6	SLOS012
LF353P	Operational Amplifier	7-6	SLOS012
LF411CD	Operational Amplifier	7-4	SLOS011
LF411CP	Operational Amplifier	7-4	SLOS011
LF412CD	Operational Amplifier	7-6	SLOS010
LF412CP	Operational Amplifier	7-6	SLOS010
LM124FK	Operational Amplifier	—	SLYD001
LM124J	Operational Amplifier	—	SLYD001
LM124W	Operational Amplifier	—	SLYD001
LM139AFK	Voltage Comparator	—	SLYD001
LM139AJ	Voltage Comparator	—	SLYD001
LM139AW	Voltage Comparator	—	SLYD001
LM139FK	Voltage Comparator	—	SLYD001
LM139J	Voltage Comparator	—	SLYD001
LM139W	Voltage Comparator	—	SLYD001
LM148FK	Operational Amplifier	—	SLYD001
LM148J	Operational Amplifier	—	SLYD001
LM158FK	Operational Amplifier	—	SLYD001
LM158JG	Operational Amplifier	—	SLYD001
LM193FK	Voltage Comparator	—	SLYD001
LM193JG	Voltage Comparator	—	SLYD001
LM201AJG	Operational Amplifier	7-2	SLYD001
LM201AP	Operational Amplifier	7-2	SLYD001
LM206D	Voltage Comparator	7-11	SLYD001
LM206J	Voltage Comparator	7-11	SLYD001
LM206JG	Voltage Comparator	7-11	SLYD001
LM206N	Voltage Comparator	7-11	SLYD001
LM206P	Voltage Comparator	7-11	SLYD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
LM207D	Operational Amplifier	7-3	SLYD001
LM207J	Operational Amplifier	7-3	SLYD001
LM207JG	Operational Amplifier	7-3	SLYD001
LM207N	Operational Amplifier	7-3	SLYD001
LM207P	Operational Amplifier	7-3	SLYD001
LM208D	Operational Amplifier	7-2	SLYD001
LM208JG	Operational Amplifier	7-2	SLYD001
LM208P	Operational Amplifier	7-2	SLYD001
LM210JG	Operational Amplifier	7-3	SLYD001
LM210P	Operational Amplifier	7-3	SLYD001
LM211D	Voltage Comparator	7-11	SLYD001
LM211JG	Voltage Comparator	7-11	SLYD001
LM211P	Voltage Comparator	7-11	SLYD001
LM218D	Operational Amplifier	7-3	SLYD001
LM218JG	Operational Amplifier	7-3	SLYD001
LM218P	Operational Amplifier	7-3	SLYD001
LM224D	Operational Amplifier	7-8	SLYD001
LM224J	Operational Amplifier	7-8	SLYD001
LM224N	Operational Amplifier	7-8	SLYD001
LM239AD	Voltage Comparator	7-11	SLYD001
LM239AJ	Voltage Comparator	7-11	SLYD001
LM239AN	Voltage Comparator	7-11	SLYD001
LM239D	Voltage Comparator	7-11	SLYD001
LM239J	Voltage Comparator	7-11	SLYD001
LM239N	Voltage Comparator	7-11	SLYD001
LM248D	Operational Amplifier	7-8	SLYD001
LM248J	Operational Amplifier	7-8	SLYD001
LM248N	Operational Amplifier	7-8	SLYD001
LM258D	Operational Amplifier	7-6	SLYD001
LM258JG	Operational Amplifier	7-6	SLYD001
LM258P	Operational Amplifier	7-6	SLYD001
LM293AD	Voltage Comparator	7-11	SLYD001
LM293AJG	Voltage Comparator	7-11	SLYD001
LM293AP	Voltage Comparator	7-11	SLYD001
LM293D	Voltage Comparator	7-11	SLYD001
LM293JG	Voltage Comparator	7-11	SLYD001
LM293P	Voltage Comparator	7-11	SLYD001
LM301AD	Operational Amplifier	7-2	SLYD001
LM301AJG	Operational Amplifier	7-2	SLYD001
LM301AP	Operational Amplifier	7-2	SLYD001
LM306D	Voltage Comparator	7-12	SLYD001
LM306J	Voltage Comparator	7-12	SLYD001
LM306JN	Voltage Comparator	7-12	SLYD001
LM306N	Voltage Comparator	7-12	SLYD001
LM306P	Voltage Comparator	7-12	SLYD001
LM307D	Operational Amplifier	7-4	SLYD001
LM307JG	Operational Amplifier	7-4	SLYD001
LM307P	Operational Amplifier	7-4	SLYD001
LM308	Operational Amplifier	7-2	SLYD001
LM310JG	Operational Amplifier	7-4	SLYD001
LM310P	Operational Amplifier	7-4	SLYD001
LM311D	Voltage Comparator	7-12	SLYD001
LM311JG	Voltage Comparator	7-12	SLYD001
LM311P	Voltage Comparator	7-12	SLYD001
LM317KC	Voltage Regulator	7-16	SLYD001
LM318D	Operational Amplifier	7-4	SLYD001
LM318JG	Operational Amplifier	7-4	SLYD001
LM318P	Operational Amplifier	7-4	SLYD001
LM324AD	Operational Amplifier	7-9	SLYD001
LM324AJ	Operational Amplifier	7-9	SLYD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
LM324AN	Operational Amplifier	7-9	SLYD001
LM324D	Operational Amplifier	7-9	SLYD001
LM324J	Operational Amplifier	7-9	SLYD001
LM324N	Operational Amplifier	7-9	SLYD001
LM324W	Operational Amplifier	7-9	SLYD001
LM330-5KC	Voltage Regulator	7-17	SLYD001
LM337KC	Voltage Regulator	7-16	SLYD001
LM339AD	Voltage Comparator	7-12	SLYD001
LM339AJ	Voltage Comparator	7-12	SLYD001
LM339AN	Voltage Comparator	7-12	SLYD001
LM339D	Voltage Comparator	7-12	SLYD001
LM339J	Voltage Comparator	7-12	SLYD001
LM339N	Voltage Comparator	7-12	SLYD001
LM340-5KC	Voltage Regulator	7-17	SLYD001
LM340-12KC	Voltage Regulator	7-17	SLYD001
LM340-15KC	Voltage Regulator	7-17	SLYD001
LM348D	Operational Amplifier	7-9	SLYD001
LM348J	Operational Amplifier	7-9	SLYD001
LM348N	Operational Amplifier	7-9	SLYD001
LM358AD	Operational Amplifier	7-6	SLYD001
LM358AP	Operational Amplifier	7-6	SLYD001
LM358D	Operational Amplifier	7-6	SLYD001
LM358JG	Operational Amplifier	7-6	SLYD001
LM358P	Operational Amplifier	7-6	SLYD001
LM393AD	Voltage Comparator	7-12	SLYD001
LM393AP	Voltage Comparator	7-12	SLYD001
LM393D	Voltage Comparator	7-12	SLYD001
LM393JG	Voltage Comparator	7-12	SLYD001
LM393P	Voltage Comparator	7-12	SLYD001
LM2900D	Operational Amplifier	7-8	SLYD001
LM2900J	Operational Amplifier	7-8	SLYD001
LM2900N	Operational Amplifier	7-8	SLYD001
LM2901D	Voltage Comparator	7-11	SLYD001
LM2901J	Voltage Comparator	7-11	SLYD001
LM2901N	Voltage Comparator	7-11	SLYD001
LM2902D	Operational Amplifier	7-8	SLYD001
LM2902J	Operational Amplifier	7-8	SLYD001
LM2902N	Operational Amplifier	7-8	SLYD001
LM2903D	Voltage Comparator	7-11	SLYD001
LM2903JG	Voltage Comparator	7-11	SLYD001
LM2903P	Voltage Comparator	7-11	SLYD001
LM2904D	Operational Amplifier	7-5	SLYD001
LM2904JG	Operational Amplifier	7-5	SLYD001
LM2904P	Operational Amplifier	7-5	SLYD001
LM2907D8	Frequency-to-Voltage Converter	7-21	SLFS011
LM2907D14	Frequency-to-Voltage Converter	7-21	SLFS011
LM2907N	Frequency-to-Voltage Converter	7-21	SLFS011
LM2907P	Frequency-to-Voltage Converter	7-21	SLFS011
LM2917D8	Frequency-to-Voltage Converter	7-21	SLFS011
LM2917D14	Frequency-to-Voltage Converter	7-21	SLFS011
LM2917N	Frequency-to-Voltage Converter	7-21	SLFS011
LM2917P	Frequency-to-Voltage Converter	7-21	SLFS011
LM2930-5KC	Voltage Regulator	7-17	SLYD001
LM2930-8KC	Voltage Regulator	7-17	SLYD001
LM3302D	Voltage Comparator	7-11	SLYD001
LM3302J	Voltage Comparator	7-11	SLYD001
LM3302N	Voltage Comparator	7-11	SLYD001
LM3900D	Operational Amplifier	7-9	SLYD001
LM3900J	Operational Amplifier	7-9	SLYD001
LM3900N	Operational Amplifier	7-9	SLYD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
LP111	Differential Comparator	—	SLCS003
LP211	Differential Comparator	7-11	SLCS003
LP239D	Differential Comparator	7-11	SLCS004
LP239J	Differential Comparator	7-11	SLCS004
LP239JG	Differential Comparator	7-11	SLCS004
LP239N	Differential Comparator	7-11	SLCS004
LP239P	Differential Comparator	7-11	SLCS004
LP311	Differential Comparator	7-12	SLCS003
LP339	Differential Comparator	7-12	SLCS004
LP2901	Differential Comparator	7-11	SLCS004
LS600	Phototransistor	8-7	SOYD002
LTC1044CD	Voltage Converter	7-18	SLAS013
LTC1044CL	Voltage Converter	7-18	SLAS013
LTC1044CP	Voltage Converter	7-18	SLAS013
LTC7660	Voltage Converter	7-18	SLAS013
LT1007AC	Operational Amplifier	7-4	SLOS017
LT1007CL	Operational Amplifier	7-4	SLOS017
LT1007CP	Operational Amplifier	7-4	SLOS017
LT1009CD	Voltage Reference, 2.5 V	7-16	SLVS013
LT1009CLD	Voltage Reference, 2.5 V	7-16	SLVS013
LT1009CLP	Voltage Reference, 2.5 V	7-16	SLVS013
LT1011ACL	Voltage Comparator	7-12	SLVS014
LT1011ACP	Voltage Comparator	7-12	SLVS014
LT1011CP	Voltage Comparator	7-12	SLVS014
LT1037ACL	Operational Amplifier	7-2,7-4	SLOS017
LT1037ACP	Operational Amplifier	7-2,7-4	SLOS017
LT1037CL	Operational Amplifier	7-2,7-4	SLOS017
LT1037CP	Operational Amplifier	7-2,7-4	SLOS017
LT1070CKJ	Switching Voltage Regulator	7-19	SLVS015
LT1070CKV	Switching Voltage Regulator	7-19	SLVS015
L293DNE	Motor Driver	6-10	SLYD002
L293NE	Motor Driver	6-10	SLYD002
L298KV	Motor Driver	6-10	SLRS011
MCT2	Optocoupler	8-4	SOYD002
MCT2E	Optocoupler	8-4	SOYD002
MC79L05ACD	Voltage Regulator	7-18	SLYD001
MC79L05ACLP	Voltage Regulator	7-18	SLYD001
MC79L05CD	Voltage Regulator	7-18	SLYD001
MC79L05CLP	Voltage Regulator	7-18	SLYD001
MC79L12ACD	Voltage Regulator	7-18	SLYD001
MC79L12ACLP	Voltage Regulator	7-18	SLYD001
MC79L12CD	Voltage Regulator	7-18	SLYD001
MC79L12CLP	Voltage Regulator	7-18	SLYD001
MC79L15ACD	Voltage Regulator	7-18	SLYD001
MC79L15ACLP	Voltage Regulator	7-18	SLYD001
MC79L15CD	Voltage Regulator	7-18	SLYD001
MC79L15CLP	Voltage Regulator	7-18	SLYD001
MC1445N	Video Amplifier	7-10	SLYD001
MC1458D	Operational Amplifier	7-6	SLYD001
MC1458JG	Operational Amplifier	7-6	SLYD001
MC1458P	Operational Amplifier	7-6	SLYD001
MC3303J	Operational Amplifier	7-8	SLYD001
MC3303N	Operational Amplifier	7-8	SLYD001
MC3403D	Operational Amplifier	7-9	SLYD001
MC3403J	Operational Amplifier	7-9	SLYD001
MC3403N	Operational Amplifier	7-9	SLYD001
MC3423D	Power Supply Monitor, Overvoltage	7-16	SLYD001
MC3423JG	Power Supply Monitor, Overvoltage	7-16	SLYD001
MC3423P	Power Supply Monitor, Overvoltage	7-16	SLYD001
MC3446D	Bus Transceiver	6-5	SLYD002

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
MC3446J	Bus Transceiver	6-5	SLYD002
MC3446N	Bus Transceiver	6-5	SLYD002
MC3450D	Line Receiver	6-4	SLYD002
MC3450J	Line Receiver	6-4	SLYD002
MC3450N	Line Receiver	6-4	SLYD002
MC3452D	Line Receiver	6-4	SLYD002
MC3452J	Line Receiver	6-4	SLYD002
MC3452N	Line Receiver	6-4	SLYD002
MC3453D	Line Driver	6-2	SLYD002
MC3453J	Line Driver	6-2	SLYD002
MC3453N	Line Driver	6-2	SLYD002
MC3470N	Floppy Disk Read-Amplifier	7-10	SLYD001
MC3486D	Line Receiver	6-3	SLYD002
MC3486J	Line Receiver	6-3	SLYD002
MC3486N	Line Receiver	6-3	SLYD002
MC3487D	Line Driver	6-2	SLYD002
MC3487J	Line Driver	6-2	SLYD002
MC3487N	Line Driver	6-2	SLYD002
MC3503J	Operational Amplifier	—	SLYD001
MC3550FK	Line Receiver (SN55107)	—	SLLSO12*
MC3550J	Line Receiver (SN55107)	—	SLLSO12*
MC3552FK	Line Receiver (SN55108)	—	SLLSO12*
MC3552J	Line Receiver (SN55108)	—	SLLSO12*
MC3553FK	Line Driver (SN55110)	—	SLLSO12*
MC3553J	Line Driver (SN55110)	—	SLLSO12*
MC34060D	PWM Controller	7-19	SLYD001
MC34060N	PWM Controller	7-19	SLYD001
MOC3009	Optocoupler	8-6	SOYD002
MOC3010	Optocoupler	8-6	SOYD002
MOC3011	Optocoupler	8-6	SOYD002
MOC3012	Optocoupler	8-6	SOYD002
MOC3020	Optocoupler	8-6	SOYD002
MOC3021	Optocoupler	8-6	SOYD002
MOC3022	Optocoupler	8-6	SOYD002
MOC3023	Optocoupler	8-6	SOYD002
NE555D	Timer	7-20	SLYD001
NE555JG	Timer	7-20	SLYD001
NE555P	Timer	7-20	SLYD001
NE556D	Timer	7-20	SLYD001
NE556J	Timer	7-20	SLYD001
NE556N	Timer	7-20	SLYD001
NE592AD	Video Amplifier	7-10	SLYD001
NE592AN	Video Amplifier	7-10	SLYD001
NE592D	Video Amplifier	7-10	SLYD001
NE592N	Video Amplifier	7-10	SLYD001
NE5532AJG	Operational Amplifier	7-6	SLYD001
NE5532AP	Operational Amplifier	7-6	SLYD001
NE5532JG	Operational Amplifier	7-6	SLYD001
NE5532P	Operational Amplifier	7-6	SLYD001
NE5534AD	Operational Amplifier	7-4	SLYD001
NE5534AJG	Operational Amplifier	7-4	SLYD001
NE5534AP	Operational Amplifier	7-4	SLYD001
NE5534D	Operational Amplifier	7-4	SLYD001
NE5534JG	Operational Amplifier	7-4	SLYD001
NE5534P	Operational Amplifier	7-4	SLYD001
OPI8012	Optocoupler	8-6	SOYD002
OPI8013	Optocoupler	8-6	SOYD002
OPI8014	Optocoupler	8-6	SOYD002
OPI8015	Optocoupler	8-6	SOYD002
OP07CD	Operational Amplifier	7-4	SLYD001

*Use TI Reference Document for Electrical Parameters.

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
OP07CP	Operational Amplifier	7-4	SLYD001
OP07DD	Operational Amplifier	7-4	SLYD001
OP07DP	Operational Amplifier	7-4	SLYD001
OP07ED	Operational Amplifier	7-4	SLYD001
OP07EP	Operational Amplifier	7-4	SLYD001
OP27EL	Operational Amplifier	7-4	SLOS016
OP27EP	Operational Amplifier	7-4	SLOS016
OP27GP	Operational Amplifier	7-4	SLOS016
OP37E	Operational Amplifier	7-2,7-4	SLOS016
OP37GP	Operational Amplifier	7-2,7-4	SLOS016
PAL16L4AFK	Field Programmable Logic Array	—	SDZD001B
PAL16L4AJ	Field Programmable Logic Array	—	SDZD001B
PAL16L4AW	Field Programmable Logic Array	—	SDZD001B
PAL16L6AFK	Field Programmable Logic Array	—	SDZD001B
PAL16L6AJ	Field Programmable Logic Array	—	SDZD001B
PAL16L6AW	Field Programmable Logic Array	—	SDZD001B
PAL16L8ACFN	Field Programmable Logic Array	3-35	SDZD001B
PAL16L8ACN	Field Programmable Logic Array	3-35	SDZD001B
PAL16L8AFK	Field Programmable Logic Array	3-35	SDZD001B
PAL16L8AJ	Field Programmable Logic Array	3-35	SDZD001B
PAL16L8AW	Field Programmable Logic Array	3-35	SDZD001B
PAL16L8A-2CFN	Field Programmable Logic Array	3-35	SDZD001B
PAL16L8A-2CN	Field Programmable Logic Array	3-35	SDZD001B
PAL16L8A-2FK	Field Programmable Logic Array	3-35	SDZD001B
PAL16L8A-2J	Field Programmable Logic Array	3-35	SDZD001B
PAL16R4ACFN	Field Programmable Logic Array	3-35	SDZD001B
PAL16R4ACN	Field Programmable Logic Array	3-35	SDZD001B
PAL16R4A-2CFN	Field Programmable Logic Array	3-35	SDZD001B
PAL16R4A-2CN	Field Programmable Logic Array	3-35	SDZD001B
PAL16R4A-2FK	Field Programmable Logic Array	3-35	SDZD001B
PAL16R4A-2J	Field Programmable Logic Array	3-35	SDZD001B
PAL16R6ACFN	Field Programmable Logic Array	3-35	SDZD001B
PAL16R6ACN	Field Programmable Logic Array	3-35	SDZD001B
PAL16R6A-2CFN	Field Programmable Logic Array	3-35	SDZD001B
PAL16R6A-2CN	Field Programmable Logic Array	3-35	SDZD001B
PAL16R6A-2FK	Field Programmable Logic Array	3-35	SDZD001B
PAL16R6A-2J	Field Programmable Logic Array	3-35	SDZD001B
PAL16R8ACFN	Field Programmable Logic Array	3-35	SDZD001B
PAL16R8ACN	Field Programmable Logic Array	3-35	SDZD001B
PAL16R8AJ	Field Programmable Logic Array	3-35	SDZD001B
PAL16R8AFK	Field Programmable Logic Array	3-35	SDZD001B
PAL16R8AW	Field Programmable Logic Array	3-35	SDZD001B
PAL16R8A-2CFN	Field Programmable Logic Array	3-35	SDZD001B
PAL16R8A-2CN	Field Programmable Logic Array	3-35	SDZD001B
PAL16R8A-2FK	Field Programmable Logic Array	3-35	SDZD001B
PAL16R8A-2J	Field Programmable Logic Array	3-35	SDZD001B
PAL20L8ACFN	Field Programmable Logic Array	3-35	SDZD001B
PAL20L8ACNT	Field Programmable Logic Array	3-35	SDZD001B
PAL20R4ACFN	Field Programmable Logic Array	3-35	SDZD001B
PAL20R4ACNT	Field Programmable Logic Array	3-35	SDZD001B
PAL20R6ACFN	Field Programmable Logic Array	3-35	SDZD001B
PAL20R6ACNT	Field Programmable Logic Array	3-35	SDZD001B
PAL20R8ACFN	Field Programmable Logic Array	3-35	SDZD001B
PAL20R8ACNT	Field Programmable Logic Array	3-35	SDZD001B
PBL3717ANE	Motor Driver	6-10	SLYD002
PC401	Image Sensor Evaluation Board	8-2	SOYD002
PC402	Image Sensor Evaluation Board	8-2	SOYD002
RC4136D	Operational Amplifier	7-9	SLYD001
RC4136J	Operational Amplifier	7-9	SLYD001
RC4136N	Operational Amplifier	7-9	SLYD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
RC4558D	Operational Amplifier	7-6	SLYD001
RC4558JG	Operational Amplifier	7-6	SLYD001
RC4558P	Operational Amplifier	7-6	SLYD001
RC4559P	Operational Amplifier	7-6	SLYD001
RM4136FK	Operational Amplifier	7-8	SLYD001
RM4136J	Operational Amplifier	7-8	SLYD001
RTC/EVM7000C-1	TMS7000 Evaluation Module (EVM)	4-28,4-29	SND001B
RTCWS-ASIC1	Application Specific IC (ASIC) Design Workshop	12-4	SSRC007
RTCWS-AS888	'AS888/890 Bit-Slice Design Workshop	12-5	SSRC007
RTCWS-FPL	Field Programmable Logic (FPL) Design Workshop	12-5	SSRC007
RTCWS-320DSP1	TMS320C1X DSP Design Workshop	12-4	SSRC007
RTCWS-320DSP2	TMS320C2X DSP Design Workshop	12-4	SSRC007
RTCWS-34010	TMS34010 Graphics System Processor Design Workshop	12-5	SSRC007
RTCWS-34061	TMS34061 Graphics System Design Workshop	12-5	SSRC007
RTCWS-380LAN1	TMS380 IBM Token-Ring Network Design Workshop	4-25,12-4	SSRC007
RV4558D	Operational Amplifier	7-5	SLYD001
RV4558JG	Operational Amplifier	7-5	SLYD001
RV4558P	Operational Amplifier	7-5	SLYD001
SA555D	Timer	7-20	SLYD001
SA555P	Timer	7-20	SLYD001
SA556D	Timer	7-20	SLYD001
SA556J	Timer	7-20	SLYD001
SE70CP160JD	Prototyping Device (TMS70C40A/20A)	4-28,4-30	SND001B
SE70CP162JD	Prototyping Device (TMS70C42)	4-28,4-30	SND001B
SE555FK	Timer	—	SLYD001
SE555JG	Timer	—	SLYD001
SE556FK	Timer	—	SLNS008
SE556J	Timer	—	SLNS008
SG2524J	PWM Controller	7-19	SLYD001
SG2524N	PWM Controller	7-19	SLYD001
SG2525A	PWM Controller	7-19	SLYD001
SG2527A	PWM Controller	7-19	SLYD001
SG3524D	PWM Controller	7-19	SLYD001
SG3524J	PWM Controller	7-19	SLYD001
SG3524N	PWM Controller	7-19	SLYD001
SG3525AJ	PWM Controller	7-19	SLYD001
SG3525AN	PWM Controller	7-19	SLYD001
SG3527AN	PWM Controller	7-19	SLYD001
SMJ27C128J	CMOS Erasable PROM	—	SGMS006A
SMJ27C256J	CMOS Erasable PROM	—	SGMS005A
SMJ4161JD	65,536-Bit Multiport Video RAM	—	SMYD006
SMJ4164FG	54,536-Bit Dynamic RAM	—	SMYDOO6
SMJ4164JD	54,536-Bit Dynamic RAM	—	SMYD006
SMJ4256JD	262,144-Bit Dynamic RAM	—	SGMS256A
SMJ4416JD	16,384-Word by 4-Bit Dynamic RAM	—	SMYD006
SMJ4464JD	65,356-Word by 4-Bit Dynamic RAM	—	SGMS020
SMJ9914AJD	GPIB Controller	—	SGMS007
SMJ32010FD	CMOS 1st-Generation DSP (20 MHz)	4-5	SPRS009
SMJ32010JD	CMOS 1st-Generation DSP (20 MHz)	4-5	SPRS009
SMJ32020FJ	NMOS 2nd-Generation DSP (20 MHz)	4-5	SPRS010
SMJ32020GB	NMOS 2nd-Generation DSP (20 MHz)	4-5	SPRS010
SN54ALS00AJ	Quad 2-Input NAND Gate	3-4	SDAD001B
SN54ALS00AW	Quad 2-Input NAND Gate	3-4	SDAD001B
SN54ALS00FK	Quad 2-Input NAND Gate	3-4	SDAD001B
SN54ALS01FK	Quad 2-Input NAND Gate OC	3-5	SDAD001B
SN54ALS01J	Quad 2-Input NAND Gate OC	3-5	SDAD001B
SN54ALS02FK	Quad 2-Input NOR Gate	3-6	SDAD001B
SN54ALS02J	Quad 2-Input NOR Gate	3-6	SDAD001B
SN54ALS02W	Quad 2-Input NOR Gate	3-6	SDAD001B
SN54ALS03BD	Quad 2-Input NAND Gate OC	3-5	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN54ALS03BFK	Quad 2-Input NAND Gate OC	3-5	SDAD001B
SN54ALS03BJ	Quad 2-Input NAND Gate OC	3-5	SDAD001B
SN54ALS04BFK	Hex Inverter	3-9	SDAD001B
SN54ALS04BJ	Hex Inverter	3-9	SDAD001B
SN54ALS04BW	Hex Inverter	3-9	SDAD001B
SN54ALS05AFK	Hex Inverter OC	3-9	SDAD001B
SN54ALS05AJ	Hex Inverter OC	3-9	SDAD001B
SN54ALS08FK	Quad 2-Input AND Gate	3-5	SDAD001B
SN54ALS08J	Quad 2-Input AND Gate	3-5	SDAD001B
SN54ALS08W	Quad 2-Input AND Gate	3-5	SDAD001B
SN54ALS09FK	Quad 2-Input AND Gate OC	3-5	SDAD001B
SN54ALS09J	Quad 2-Input AND Gate OC	3-5	SDAD001B
SN54ALS10AFK	Triple 3-Input NAND Gate	3-4	SDAD001B
SN54ALS10AJ	Triple 3-Input NAND Gate	3-4	SDAD001B
SN54ALS10AW	Triple 3-Input NAND Gate	3-4	SDAD001B
SN54ALS11AFK	Triple 3-Input AND Gate	3-5	SDAD001B
SN54ALS11AJ	Triple 3-Input AND Gate	3-5	SDAD001B
SN54ALS11AW	Triple 3-Input AND Gate	3-5	SDAD001B
SN54ALS12AFK	Triple 3-Input NAND Gate OC	3-5	SDAD001B
SN54ALS12AJ	Triple 3-Input NAND Gate OC	3-5	SDAD001B
SN54ALS15AJ	Triple 3-Input AND Gate OC	3-5	SDAD001B
SN54ALS20AFK	Dual 4-Input NAND Gate	3-4	SDAD001B
SN54ALS20AJ	Dual 4-Input NAND Gate	3-4	SDAD001B
SN54ALS20AW	Dual 4-Input NAND Gate	3-4	SDAD001B
SN54ALS21AFK	Dual 4-Input AND Gate	3-5	SDAD001B
SN54ALS21AJ	Dual 4-Input AND Gate	3-5	SDAD001B
SN54ALS21AW	Dual 4-Input AND Gate	3-5	SDAD001B
SN54ALS22BFK	Dual 4-Input NAND Gate OC	3-5	SDAD001B
SN54ALS22BJ	Dual 4-Input NAND Gate OC	3-5	SDAD001B
SN54ALS22BN	Dual 4-Input NAND Gate OC	3-5	SDAD001B
SN54ALS27FK	Triple 3-Input NOR Gate	3-6	SDAD001B
SN54ALS27J	Triple 3-Input NOR Gate	3-6	SDAD001B
SN54ALS27W	Triple 3-Input NOR Gate	3-6	SDAD001B
SN54ALS28AFK	Quad 2-Input NOR Buffer	3-6	SDAD001B
SN54ALS28AJ	Quad 2-Input NOR Buffer	3-6	SDAD001B
SN54ALS30AFK	8-Input NAND Gate	3-4	SDAD001B
SN54ALS30AJ	8-Input NAND Gate	3-4	SDAD001B
SN54ALS30AW	8-Input NAND Gate	3-4	SDAD001B
SN54ALS32FK	Quad 2-Input OR Gate	3-6	SDAD001B
SN54ALS32J	Quad 2-Input OR Gate	3-6	SDAD001B
SN54ALS32W	Quad 2-Input OR Gate	3-6	SDAD001B
SN54ALS33AFK	Quad 2-Input NOR Buffer	3-6	SDAD001B
SN54ALS33AJ	Quad 2-Input NOR Buffer	3-6	SDAD001B
SN54ALS37AFK	Quad 2-Input NAND Buffer	3-4	SDAD001B
SN54ALS37AJ	Quad 2-Input NAND Buffer	3-4	SDAD001B
SN54ALS37AW	Quad 2-Input NAND Buffer	3-4	SDAD001B
SN54ALS38AFK	Quad 2-Input NAND Buffer	3-4	SDAD001B
SN54ALS38AJ	Quad 2-Input NAND Buffer	3-4	SDAD001B
SN54ALS38AW	Quad 2-Input NAND Buffer	3-4	SDAD001B
SN54ALS74AFK	Dual D-Type Flip-Flop	3-17	SDAD001B
SN54ALS74AJ	Dual D-Type Flip-Flop	3-17	SDAD001B
SN54ALS74AW	Dual D-Type Flip-Flop	3-17	SDAD001B
SN54ALS109AFK	Dual J-K Flip-Flop	3-17	SDAD001B
SN54ALS109AJ	Dual J-K Flip-Flop	3-17	SDAD001B
SN54ALS112AFK	Dual J-K Flip-Flop	3-17	SDAD001B
SN54ALS112AJ	Dual J-K Flip-Flop	3-17	SDAD001B
SN54ALS112AW	Dual J-K Flip-Flop	3-17	SDAD001B
SN54ALS113AFK	Dual J-K Flip-Flop	3-17	SDAD001B
SN54ALS113AJ	Dual J-K Flip-Flop	3-17	SDAD001B
SN54ALS114AFK	Dual J-K Flip-Flop	3-17	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN54ALS133FK	13-Input NAND Gate	3-4	SDAD001B
SN54ALS133J	13-Input NAND Gate	3-4	SDAD001B
SN54ALS133W	13-Input NAND Gate	3-4	SDAD001B
SN54ALS138FK	3-8 Line Decoder/Demultiplexer	3-30	SDAD001B
SN54ALS138J	3-8 Line Decoder/Demultiplexer	3-30	SDAD001B
SN54ALS138W	3-8 Line Decoder/Demultiplexer	3-30	SDAD001B
SN54ALS139FK	Dual 2-4 Decoder/Demultiplexer	3-30	SDAD001B
SN54ALS139J	Dual 2-4 Decoder/Demultiplexer	3-30	SDAD001B
SN54ALS139W	Dual 2-4 Decoder/Demultiplexer	3-30	SDAD001B
SN54ALS151FK	8-1 Data Selector/Multiplexer	3-29	SDAD001B
SN54ALS151J	8-1 Data Selector/Multiplexer	3-29	SDAD001B
SN54ALS151W	8-1 Data Selector/Multiplexer	3-29	SDAD001B
SN54ALS153FK	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN54ALS153J	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN54ALS153W	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN54ALS157FK	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN54ALS157J	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN54ALS157W	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN54ALS158FK	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN54ALS158J	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN54ALS158W	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN54ALS161BFK	4-Bit Synchronous Binary Counter	3-25	SDAD001B
SN54ALS161BJ	4-Bit Synchronous Binary Counter	3-25	SDAD001B
SN54ALS161BW	4-Bit Synchronous Binary Counter	3-25	SDAD001B
SN54ALS162BFK	4-Bit Synchronous Decade Counter	3-25	SDAD001B
SN54ALS162BJ	4-Bit Synchronous Decade Counter	3-25	SDAD001B
SN54ALS162BW	4-Bit Synchronous Decade Counter	3-25	SDAD001B
SN54ALS163BFK	4-Bit Synchronous Binary Counter	3-25	SDAD001B
SN54ALS163BJ	4-Bit Synchronous Binary Counter	3-25	SDAD001B
SN54ALS169BFK	4-Bit Up/Down Synchronous Binary Counter	3-26	SDAD001B
SN54ALS169BJ	4-Bit Up/Down Synchronous Binary Counter	3-26	SDAD001B
SN54ALS169BW	4-Bit Up/Down Synchronous Binary Counter	3-26	SDAD001B
SN54ALS174FK	Hex D-Type Flip-Flop	3-18	SDAD001B
SN54ALS174J	Hex D-Type Flip-Flop	3-18	SDAD001B
SN54ALS174W	Hex D-Type Flip-Flop	3-18	SDAD001B
SN54ALS175FK	Quad D-Type Flip-Flop	3-18	SDAD001B
SN54ALS175J	Quad D-Type Flip-Flop	3-18	SDAD001B
SN54ALS175W	Quad D-Type Flip-Flop	3-18	SDAD001B
SN54ALS191FK	Synchronous Up/Down Binary Counter	3-26	SDAD001B
SN54ALS191J	Synchronous Up/Down Binary Counter	3-26	SDAD001B
SN54ALS191W	Synchronous Up/Down Binary Counter	3-26	SDAD001B
SN54ALS193FK	Synchronous Up/Down Binary Counter	3-26	SDAD001B
SN54ALS193J	Synchronous Up/Down Binary Counter	3-26	SDAD001B
SN54ALS240AFK	Octal Buffer/Line Driver	3-12	SDAD001B
SN54ALS240AJ	Octal Buffer/Line Driver	3-12	SDAD001B
SN54ALS240AW	Octal Buffer/Line Driver	3-12	SDAD001B
SN54ALS241AFK	Octal Buffer/Line Driver	3-12	SDAD001B
SN54ALS241AJ	Octal Buffer/Line Driver	3-12	SDAD001B
SN54ALS241AW	Octal Buffer/Line Driver	3-12	SDAD001B
SN54ALS242BFK	Quad Bus Transceiver	3-13	SDAD001B
SN54ALS242BJ	Quad Bus Transceiver	3-13	SDAD001B
SN54ALS243AFK	Quad Bus Transceiver	3-13	SDAD001B
SN54ALS243AJ	Quad Bus Transceiver	3-13	SDAD001B
SN54ALS243AW	Quad Bus Transceiver	3-13	SDAD001B
SN54ALS244AFK	Octal Buffer/Line Driver	3-12	SDAD001B
SN54ALS244AJ	Octal Buffer/Line Driver	3-12	SDAD001B
SN54ALS244AW	Octal Buffer/Line Driver	3-12	SDAD001B
SN54ALS245AFK	Octal Bus Transceiver	3-13	SDAD001B
SN54ALS245AJ	Octal Bus Transceiver	3-13	SDAD001B
SN54ALS245AW	Octal Bus Transceiver	3-13	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN54ALS251FK	8-1 Data Selector/Multiplexer	3-29	SDAD001B
SN54ALS251J	8-1 Data Selector/Multiplexer	3-29	SDAD001B
SN54ALS251W	8-1 Data Selector/Multiplexer	3-29	SDAD001B
SN54ALS253FK	4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN54ALS253J	4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN54ALS253W	4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN54ALS257FK	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN54ALS257J	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN54ALS257W	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN54ALS258FK	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN54ALS258J	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN54ALS258W	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN54ALS259FK	8-Bit Addressable Latch	3-21	SDAD001B
SN54ALS259J	8-Bit Addressable Latch	3-21	SDAD001B
SN54ALS273FK	Octal D-Type Flip-Flop	3-18	SDAD001B
SN54ALS273J	Octal D-Type Flip-Flop	3-18	SDAD001B
SN54ALS273W	Octal D-Type Flip-Flop	3-18	SDAD001B
SN54ALS299FK	8-Bit Shift Register	3-22	SDAD001B
SN54ALS299J	8-Bit Shift Register	3-22	SDAD001B
SN54ALS299W	8-Bit Shift Register	3-22	SDAD001B
SN54ALS323FK	8-Bit Shift/Storage Register	3-22	SDAD001B
SN54ALS323J	8-Bit Shift/Storage Register	3-22	SDAD001B
SN54ALS352J	Dual Data Selector/Multiplexer	3-28	SDAD001B
SN54ALS353FK	Dual 4-1 Selector/Multiplexer	3-28	SDAD001B
SN54ALS353J	Dual 4-1 Selector/Multiplexer	3-28	SDAD001B
SN54ALS373FK	Octal D-Type Latch	3-21	SDAD001B
SN54ALS373J	Octal D-Type Latch	3-21	SDAD001B
SN54ALS373W	Octal D-Type Latch	3-21	SDAD001B
SN54ALS374FK	Octal D-Type Flip-Flop	3-18	SDAD001B
SN54ALS374J	Octal D-Type Flip-Flop	3-18	SDAD001B
SN54ALS374W	Octal D-Type Flip-Flop	3-18	SDAD001B
SN54ALS520FK	8-Bit Identity Comparator	3-32	SDAD001B
SN54ALS520J	8-Bit Identity Comparator	3-32	SDAD001B
SN54ALS534FK	Octal D-Type Flip-Flop	3-19	SDAD001B
SN54ALS534J	Octal D-Type Flip-Flop	3-19	SDAD001B
SN54ALS534W	Octal D-Type Flip-Flop	3-19	SDAD001B
SN54ALS541FK	Octal Buffer/Line Driver	3-12	SDAD001B
SN54ALS541J	Octal Buffer/Line Driver	3-12	SDAD001B
SN54ALS563AFK	Octal D-Type Transparent Latch	3-21	SDAD001B
SN54ALS563AJ	Octal D-Type Transparent Latch	3-21	SDAD001B
SN54ALS564AFK	Octal Edge-Triggered Flip-Flop	3-19	SDAD001B
SN54ALS564AJ	Octal Edge-Triggered Flip-Flop	3-19	SDAD001B
SN54ALS569AFK	4-Bit Up/Down Binary Counter	3-26	SDAD001B
SN54ALS569AJ	4-Bit Up/Down Binary Counter	3-26	SDAD001B
SN54ALS569AW	4-Bit Up/Down Binary Counter	3-26	SDAD001B
SN54ALS573BFK	Octal D-Type Latch	3-21	SDAD001B
SN54ALS573BJ	Octal D-Type Latch	3-21	SDAD001B
SN54ALS574AFK	Octal D-Type Flip-Flop	3-18	SDAD001B
SN54ALS574AJ	Octal D-Type Flip-Flop	3-18	SDAD001B
SN54ALS574AW	Octal D-Type Flip-Flop	3-18	SDAD001B
SN54ALS576AFK	Octal D-Type Flip-Flop	3-19	SDAD001B
SN54ALS576AJ	Octal D-Type Flip-Flop	3-19	SDAD001B
SN54ALS580AFK	Octal D-Type Latch	3-21	SDAD001B
SN54ALS580AJ	Octal D-Type Latch	3-21	SDAD001B
SN54ALS580AW	Octal D-Type Latch	3-21	SDAD001B
SN54ALS632AJD	Error Detection and Correction Circuit	3-33	SDAD001B
SN54ALS640AFK	Octal Bus Transceiver	3-13	SDAD001B
SN54ALS640AJ	Octal Bus Transceiver	3-13	SDAD001B
SN54ALS640AW	Octal Bus Transceiver	3-13	SDAD001B
SN54ALS645AFK	Octal Bus Transceiver	3-15	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN54ALS645AJ	Octal Bus Transceiver	3-15	SDAD001B
SN54ALS688FK	8-Bit Identity Comparator	3-32	SDAD001B
SN54ALS688J	8-Bit Identity Comparator	3-32	SDAD001B
SN54ALS804AFK	Hex 2-Input NAND Driver	3-4	SDAD001B
SN54ALS805AJ	Hex 2-Input NOR Driver	3-6	SDAD001B
SN54ALS808FK	Hex 2-Input AND Driver	3-10	SDAD001B
SN54ALS832J	Hex 2-Input OR Driver	3-6	SDAD001B
SN54ALS857FK	Hex 2-to-1 Multiplexer	3-29	SDAD001B
SN54ALS857JT	Hex 2-to-1 Multiplexer	3-29	SDAD001B
SN54ALS873BFK	Dual 4-Bit D-Type Latch	3-21	SDAD001B
SN54ALS873BJT	Dual 4-Bit D-Type Latch	3-21	SDAD001B
SN54ALS874BFK	Dual 4-Bit D-Type Flip-Flop	3-18	SDAD001B
SN54ALS874BJT	Dual 4-Bit D-Type Flip-Flop	3-18	SDAD001B
SN54ALS1010AFK	Triple 3-Input NAND Buffer	3-4	SDAD001B
SN54ALS1010AJ	Triple 3-Input NAND Buffer	3-4	SDAD001B
SN54ALS1034FK	Triple 3-Input AND Buffer	3-10	SDAD001B
SN54ALS1034J	Triple 3-Input AND Buffer	3-10	SDAD001B
SN54ALS1035FK	Hex Noninverting Buffer	3-10	SDAD001B
SN54ALS1035J	Hex Noninverting Buffer	3-10	SDAD001B
SN54ALS1244AFK	Octal Buffer/Driver	3-12	SDAD001B
SN54ALS1244AJ	Octal Buffer/Driver	3-12	SDAD001B
SN54ALS1245AFK	Octal Bus Transceiver	3-14	SDAD001B
SN54ALS1245AJ	Octal Bus Transceiver	3-14	SDAD001B
SN54AS00FK	Quad 2-Input NAND Gate	3-4	SDAD001B
SN54AS00J	Quad 2-Input NAND Gate	3-4	SDAD001B
SN54AS02FK	Quad 2-Input NOR Gate	3-6	SDAD001B
SN54AS02J	Quad 2-Input NOR Gate	3-6	SDAD001B
SN54AS02W	Quad 2-Input NOR Gate	3-6	SDAD001B
SN54AS04FK	Hex Inverter	3-9	SDAD001B
SN54AS04J	Hex Inverter	3-9	SDAD001B
SN54AS04W	Hex Inverter	3-9	SDAD001B
SN54AS08FK	Quad 2-Input AND Gate	3-5	SDAD001B
SN54AS08J	Quad 2-Input AND Gate	3-5	SDAD001B
SN54AS08WD	Quad 2-Input AND Gate	3-5	SDAD001B
SN54AS10FK	Triple 3-Input NAND Gate	3-4	SDAD001B
SN54AS10J	Triple 3-Input NAND Gate	3-4	SDAD001B
SN54AS10W	Triple 3-Input NAND Gate	3-4	SDAD001B
SN54AS11J	Triple 3-Input AND Gate	3-5	SDAD001B
SN54AS20J	Dual 4-Input NAND Gate	3-4	SDAD001B
SN54AS21FK	Dual 4-Input AND Gate	3-5	SDAD001B
SN54AS21J	Dual 4-Input AND Gate	3-5	SDAD001B
SN54AS27FK	Triple 3-Input NOR Gate	3-6	SDAD001B
SN54AS27J	Triple 3-Input NOR Gate	3-6	SDAD001B
SN54AS30FK	8-Input NAND Gate	3-4	SDAD001B
SN54AS30J	8-Input NAND Gate	3-4	SDAD001B
SN54AS32FK	Quad 2-Input OR Gate	3-6	SDAD001B
SN54AS32J	Quad 2-Input OR Gate	3-6	SDAD001B
SN54AS32W	Quad 2-Input OR Gate	3-6	SDAD001B
SN54AS74FK	Dual D-Type Flip-Flop	3-17	SDAD001B
SN54AS74J	Dual D-Type Flip-Flop	3-17	SDAD001B
SN54AS74W	Dual D-Type Flip-Flop	3-17	SDAD001B
SN54AS109FK	Dual J-K Flip-Flop	3-17	SDAD001B
SN54AS109J	Dual J-K Flip-Flop	3-17	SDAD001B
SN54AS109W	Dual J-K Flip-Flop	3-17	SDAD001B
SN54AS138FK	3-8 Line Decoder/Demultiplexer	3-30	SDAD001B
SN54AS138J	3-8 Line Decoder/Demultiplexer	3-30	SDAD001B
SN54AS138W	3-8 Line Decoder/Demultiplexer	3-30	SDAD001B
SN54AS161FK	4-Bit Synchronous Binary Counter	3-25	SDAD001B
SN54AS161J	4-Bit Synchronous Binary Counter	3-25	SDAD001B
SN54AS161W	4-Bit Synchronous Binary Counter	3-25	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN54AS163FK	4-Bit Synchronous Binary Counter	3-25	SDAD001B
SN54AS163J	4-Bit Synchronous Binary Counter	3-25	SDAD001B
SN54AS174FK	Hex D-Type Flip-Flop	3-18	SDAD001B
SN54AS174J	Hex D-Type Flip-Flop	3-18	SDAD001B
SN54AS174W	Hex D-Type Flip-Flop	3-18	SDAD001B
SN54AS181BJT	4-Bit Arithmetic Logic Unit	3-34	SDAD001B
SN54AS181BW	4-Bit Arithmetic Logic Unit	3-34	SDAD001B
SN54AS194J	Universal Shift Register	3-22	SDAD001B
SN54AS194W	Universal Shift Register	3-22	SDAD001B
SN54AS240J	Octal Buffer/Line Driver	3-12	SDAD001B
SN54AS240W	Octal Buffer/Line Driver	3-12	SDAD001B
SN54AS241J	Octal Buffer/Line Driver	3-12	SDAD001B
SN54AS242FK	Quad Bus Transceiver	3-13	SDAD001B
SN54AS242J	Quad Bus Transceiver	3-13	SDAD001B
SN54AS242W	Quad Bus Transceiver	3-13	SDAD001B
SN54AS244FK	Octal Buffer/Line Driver	3-12	SDAD001B
SN54AS244J	Octal Buffer/Line Driver	3-12	SDAD001B
SN54AS244W	Octal Buffer/Line Driver	3-12	SDAD001B
SN54AS373FK	Octal D-Type Latch	3-21	SDAD001B
SN54AS373J	Octal D-Type Latch	3-21	SDAD001B
SN54AS373W	Octal D-Type Latch	3-21	SDAD001B
SN54AS374FK	Octal D-Type Flip-Flop	3-18	SDAD001B
SN54AS374J	Octal D-Type Flip-Flop	3-18	SDAD001B
SN54AS374W	Octal D-Type Flip-Flop	3-18	SDAD001B
SN54AS573FK	Octal D-Type Latch	3-21	SDAD001B
SN54AS573J	Octal D-Type Latch	3-21	SDAD001B
SN54AS573W	Octal D-Type Latch	3-21	SDAD001B
SN54AS574FK	Octal D-Type Flip-Flop	3-18	SDAD001B
SN54AS574J	Octal D-Type Flip-Flop	3-18	SDAD001B
SN54AS574W	Octal D-Type Flip-Flop	3-18	SDAD001B
SN54AS575FK	Octal D-Type Flip-Flop	3-18	SDAD001B
SN54AS575JT	Octal D-Type Flip-Flop	3-18	SDAD001B
SN54AS575W	Octal D-Type Flip-Flop	3-18	SDAD001B
SN54AS576FK	Octal D-Type Flip-Flop	3-19	SDAD001B
SN54AS576J	Octal D-Type Flip-Flop	3-19	SDAD001B
SN54AS576W	Octal D-Type Flip-Flop	3-19	SDAD001B
SN54AS640J	Octal Bus Transceiver	3-13	SDAD001B
SN54AS645FK	Octal Bus Transceiver	3-15	SDAD001B
SN54AS645J	Octal Bus Transceiver	3-15	SDAD001B
SN54AS645W	Octal Bus Transceiver	3-15	SDAD001B
SN54AS646FK	Octal Bus Transceiver and Register	3-14	SDAD001B
SN54AS646JT	Octal Bus Transceiver and Register	3-14	SDAD001B
SN54AS646W	Octal Bus Transceiver and Register	3-14	SDAD001B
SN54AS651FK	Octal Bus Transceiver and Register	3-14	SDAD001B
SN54AS651JT	Octal Bus Transceiver and Register	3-14	SDAD001B
SN54AS652FK	Octal Bus Transceiver and Register	3-14	SDAD001B
SN54AS652JT	Octal Bus Transceiver and Register	3-14	SDAD001B
SN54AS652W	Octal Bus Transceiver and Register	3-14	SDAD001B
SN54AS804BFK	Hex 2-Input NAND Driver	3-4	SDAD001B
SN54AS804BJ	Hex 2-Input NAND Driver	3-4	SDAD001B
SN54AS805BFK	Hex 2-Input NOR Driver	3-6	SDAD001B
SN54AS805BJ	Hex 2-Input NOR Driver	3-6	SDAD001B
SN54AS805BW	Hex 2-Input NOR Driver	3-6	SDAD001B
SN54AS808BFK	Hex 2-Input AND Driver	3-10	SDAD001B
SN54AS808BJ	Hex 2-Input AND Driver	3-10	SDAD001B
SN54AS821FK	10-Bit Bus Interface Flip-Flop	3-19	SDAD001B
SN54AS821JT	10-Bit Bus Interface Flip-Flop	3-19	SDAD001B
SN54AS821W	10-Bit Bus Interface Flip-Flop	3-19	SDAD001B
SN54AS832BFK	Hex 2-Input OR Driver	3-6	SDAD001B
SN54AS832BJ	Hex 2-Input OR Driver	3-6	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN54AS832BW	Hex 2-Input OR Driver	3-6	SDAD001B
SN54AS867FK	8-Bit Synchronous Up/Down Counter	3-26	SDAD001B
SN54AS867JT	8-Bit Synchronous Up/Down Counter	3-26	SDAD001B
SN54AS867W	8-Bit Synchronous Up/Down Counter	3-26	SDAD001B
SN54AS869FK	8-Bit Synchronous Up/Down Counter	3-26	SDAD001B
SN54AS869JT	8-Bit Synchronous Up/Down Counter	3-26	SDAD001B
SN54AS873FK	Dual 4-Bit D-Type Latch	3-21	SDAD001B
SN54AS873JT	Dual 4-Bit D-Type Latch	3-21	SDAD001B
SN54AS873W	Dual 4-Bit D-Type Latch	3-21	SDAD001B
SN54AS874FK	Dual 4-Bit Flip-Flop	3-18	SDAD001B
SN54AS874JT	Dual 4-Bit Flip-Flop	3-18	SDAD001B
SN54AS874W	Dual 4-Bit Flip-Flop	3-18	SDAD001B
SN54AS885FK	8-Bit Magnitude Comparator	3-32	SDAD001B
SN54AS885JT	8-Bit Magnitude Comparator	3-32	SDAD001B
SN54AS885W	8-Bit Magnitude Comparator	3-32	SDAD001B
SN54AS1004AFK	Hex Inverting Driver	3-9	SDAD001B
SN54AS1004AJ	Hex Inverting Driver	3-9	SDAD001B
SN54AS1004AW	Hex Inverting Driver	3-9	SDAD001B
SN54AS1032AFK	Quad OR Buffer/Driver	3-6	SDAD001B
SN54AS1032AJ	Quad OR Buffer/Driver	3-6	SDAD001B
SN54AS1034AFK	Hex Driver	3-10	SDAD001B
SN54AS1034AJ	Hex Driver	3-10	SDAD001B
SN54AS1034AW	Hex Driver	3-10	SDAD001B
SN54F00FK	Quad 2-Input-NAND Gate	3-4	SDFD001
SN54F00J	Quad 2-Input-NAND Gate	3-4	SDFD001
SN54F02FK	Quad 2-Input NOR Gate	3-6	SDFD001
SN54F02J	Quad 2-Input NOR Gate	3-6	SDFD001
SN54F04FK	Hex Inverter	3-9	SDFD001
SN54F04J	Hex Inverter	3-9	SDFD001
SN54F10FK	Triple 3-Input NAND Gate	3-4	SDFD001
SN54F10J	Triple 3-Input NAND Gate	3-4	SDFD001
SN54F27FK	Triple 3-Input NOR Gate	3-6	SDFD001
SN54F27J	Triple 3-Input NOR Gate	3-6	SDFD001
SN54F27W	Triple 3-Input NOR Gate	3-6	SDFD001
SN54F30FK	8-Input NAND Gate	3-4	SDFD001
SN54F30J	8-Input NAND Gate	3-4	SDFD001
SN54F36FK	Quad 2-Input NOR Gate	3-6	SDFD001
SN54F36J	Quad 2-Input NOR Gate	3-6	SDFD001
SN54F74FK	Dual D-Type Flip-Flop	3-17	SDFD001
SN54F74J	Dual D-Type Flip-Flop	3-17	SDFD001
SN54F153FK	Dual 4-1 Data Selector/Multiplexer	3-28	SDFD001
SN54F153J	Dual 4-1 Data Selector/Multiplexer	3-28	SDFD001
SN54F153W	Dual 4-1 Data Selector/Multiplexer	3-28	SDFD001
SN54F241FK	Octal Buffer/Line Driver	3-12	SDFD001
SN54F241J	Octal Buffer/Line Driver	3-12	SDFD001
SN54F241W	Octal Buffer/Line Driver	3-12	SDFD001
SN54F244FK	Octal Buffer/Line Driver	3-12	SDFD001
SN54F244J	Octal Buffer/Line Driver	3-12	SDFD001
SN54F518FK	8-Bit Identity Comparator	3-32	SDFD001
SN54F518J	8-Bit Identity Comparator	3-32	SDFD001
SN54F518W	8-Bit Identity Comparator	3-32	SDFD001
SN54F519FK	8-Bit Identity Comparator	3-32	SDFD001
SN54F519J	8-Bit Identity Comparator	3-32	SDFD001
SN54F519W	8-Bit Identity Comparator	3-32	SDFD001
SN54F520FK	8-Bit Identity Comparator	3-32	SDFD001
SN54F520J	8-Bit Identity Comparator	3-32	SDFD001
SN54F521FK	8-Bit Identity Comparator	3-32	SDFD001
SN54F521J	8-Bit Identity Comparator	3-32	SDFD001
SN54F521W	8-Bit Identity Comparator	3-32	SDFD001
SN54LS00FK	Quad 2-Input NAND Gate	3-4	SDLD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN54LS00J	Quad 2-Input NAND Gate	3-4	SDLD001
SN54LS00W	Quad 2-Input NAND Gate	3-4	SDLD001
SN54LS01FK	Quad 2-Input NAND Gate OC	3-5	SDLD001
SN54LS01J	Quad 2-Input NAND Gate OC	3-5	SDLD001
SN54LS01W	Quad 2-Input NAND Gate OC	3-5	SDLD001
SN54LS02FK	Quad 2-Input NOR Gate	3-6	SDLD001
SN54LS02J	Quad 2-Input NOR Gate	3-6	SDLD001
SN54LS02W	Quad 2-Input NOR Gate	3-6	SDLD001
SN54LS03FK	Quad 2-Input NAND Gate OC	3-5	SDLD001
SN54LS03J	Quad 2-Input NAND Gate OC	3-5	SDLD001
SN54LS03W	Quad 2-Input NAND Gate OC	3-5	SDLD001
SN54LS04FK	Hex Inverter	3-9	SDLD001
SN54LS04J	Hex Inverter	3-9	SDLD001
SN54LS04W	Hex Inverter	3-9	SDLD001
SN54LS05FK	Hex Inverter OC	3-9	SDLD001
SN54LS05J	Hex Inverter OC	3-9	SDLD001
SN54LS05W	Hex Inverter OC	3-9	SDLD001*
SN54LS08FK	Quad 2-Input AND Gate	3-5	SDLD001
SN54LS08J	Quad 2-Input AND Gate	3-5	SDLD001
SN54LS08W	Quad 2-Input AND Gate	3-5	SDLD001
SN54LS09FK	Quad 2-Input AND Gate OC	3-5	SDLD001
SN54LS09J	Quad 2-Input AND Gate OC	3-5	SDLD001
SN54LS09W	Quad 2-Input AND Gate OC	3-5	SDLD001
SN54LS10FK	Triple 3-Input NAND Gate	3-4	SDLD001
SN54LS10J	Triple 3-Input NAND Gate	3-4	SDLD001
SN54LS10W	Triple 3-Input NAND Gate	3-4	SDLD001
SN54LS11FK	Triple 3-Input AND Gate	3-5	SDLD001
SN54LS11J	Triple 3-Input AND Gate	3-5	SDLD001
SN54LS11W	Triple 3-Input AND Gate	3-5	SDLD001
SN54LS12FK	Triple 3-Input NAND Gate OC	3-5	SDLD001
SN54LS12J	Triple 3-Input NAND Gate OC	3-5	SDLD001
SN54LS12W	Triple 3-Input NAND Gate OC	3-5	SDLD001
SN54LS13J	Dual NAND Schmitt-Trigger	3-4	SDLD001
SN54LS13W	Dual NAND Schmitt-Trigger	3-4	SDLD001
SN54LS14FK	Hex Schmitt-Trigger Inverter	3-9	SDLD001
SN54LS14J	Hex Schmitt-Trigger Inverter	3-9	SDLD001
SN54LS14W	Hex Schmitt-Trigger Inverter	3-9	SDLD001
SN54LS15J	Triple 3-Input AND Gate OC	3-5	SDLD001
SN54LS15W	Triple 3-Input AND Gate OC	3-5	SDLD001
SN54LS20FK	Dual 4-Input NAND Gate	3-4	SDLD001
SN54LS20J	Dual 4-Input NAND Gate	3-4	SDLD001
SN54LS20W	Dual 4-Input NAND Gate	3-4	SDLD001
SN54LS21FK	Dual 4-Input AND Gate	3-5	SDLD001
SN54LS21J	Dual 4-Input AND Gate	3-5	SDLD001
SN54LS21W	Dual 4-Input AND Gate	3-5	SDLD001
SN54LS22FK	Dual 4-Input NAND Gate	—	SDLD001
SN54LS22J	Dual 4-Input NAND Gate	—	SDLD001
SN54LS22W	Dual 4-Input NAND Gate	—	SDLD001
SN54LS26FK	Quad 2-Input NAND Gate	3-4	SDLD001
SN54LS26J	Quad 2-Input NAND Gate	3-4	SDLD001
SN54LS26W	Quad 2-Input NAND Gate	3-4	SDLD001
SN54LS27FK	Triple 3-Input NOR Gate	3-6	SDLD001
SN54LS27J	Triple 3-Input NOR Gate	3-6	SDLD001
SN54LS27W	Triple 3-Input NOR Gate	3-6	SDLD001
SN54LS28J	Quad 2-Input NOR Buffer	3-6	SDLD001
SN54LS28W	Quad 2-Input NOR Buffer	3-6	SDLD001
SN54LS30FK	8-Input NAND Gate	3-4	SDLD001
SN54LS30J	8-Input NAND Gate	3-4	SDLD001
SN54LS30W	8-Input NAND Gate	3-4	SDLD001
SN54LS32FK	Quad 2-Input OR Gate	3-6	SDLD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN54LS32J	Quad 2-Input OR Gate	3-6	SDLD001
SN54LS32W	Quad 2-Input OR Gate	3-6	SDLD001
SN54LS33J	Quad 2-Input NOR Buffer OC	3-6	SDLD001
SN54LS33W	Quad 2-Input NOR Buffer OC	3-6	SDLD001
SN54LS37FK	Quad 2-Input NAND Buffer	3-4	SDLD001
SN54LS37J	Quad 2-Input NAND Buffer	3-4	SDLD001
SN54LS37W	Quad 2-Input NAND Buffer	3-4	SDLD001
SN54LS38FK	Quad 2-Input NAND Buffer OC	3-4	SDLD001
SN54LS38J	Quad 2-Input NAND Buffer OC	3-4	SDLD001
SN54LS38W	Quad 2-Input NAND Buffer OC	3-4	SDLD001
SN54LS40FK	Dual 4-Input NAND Buffer	3-4	SDLD001
SN54LS40J	Dual 4-Input NAND Buffer	3-4	SDLD001
SN54LS40W	Dual 4-Input NAND Buffer	3-4	SDLD001
SN54LS42FK	BCD-to-Decimal Decoder	3-30	SDLD001
SN54LS42J	BCD-to-Decimal Decoder	3-30	SDLD001
SN54LS42W	BCD-to-Decimal Decoder	3-30	SDLD001
SN54LS47FK	BCD-7-Segment Decoder/Driver	3-33	SDLD001
SN54LS47J	BCD-7-Segment Decoder/Driver	3-33	SDLD001
SN54LS47W	BCD-7-Segment Decoder/Driver	3-33	SDLD001
SN54LS48J	BCD-7-Segment Decoder/Driver	—	SDLD001
SN54LS48W	BCD-7-Segment Decoder/Driver	—	SDLD001
SN54LS49J	BCD-7-Segment Decoder/Driver	—	SDLD001
SN54LS51FK	Dual AND/OR Invert Gate	3-7	SDLD001*
SN54LS51J	Dual AND/OR Invert Gate	3-7	SDLD001
SN54LS51W	Dual AND/OR Invert Gate	3-7	SDLD001
SN54LS54FK	AND-OR-Invert Gate	3-7	SDLD001
SN54LS54J	AND-OR-Invert Gate	3-7	SDLD001
SN54LS54W	AND-OR-Invert Gate	3-7	SDLD001
SN54LS63J	Hex Current-Sensing Gate	—	SDLD001
SN54LS73AJ	Dual J-K Flip-Flop	3-17	SDLD001
SN54LS73AW	Dual J-K Flip-Flop	3-17	SDLD001
SN54LS74AFK	Dual D-Type Flip-Flop	3-17	SDLD001
SN54LS74AJ	Dual D-Type Flip-Flop	3-17	SDLD001
SN54LS74AW	Dual D-Type Flip-Flop	3-17	SDLD001
SN54LS75J	4-Bit Latch	3-20	SDLD001
SN54LS75W	4-Bit Latch	3-20	SDLD001
SN54LS76AJ	Dual J-K Flip-Flop	3-17	SDLD001
SN54LS76AW	Dual J-K Flip-Flop	3-17	SDLD001
SN54LS78AJ	Dual J-K Flip-Flop	3-17	SDLD001
SN54LS78AW	Dual J-K Flip-Flop	3-17	SDLD001
SN54LS83AJ	4-Bit Binary Adder	3-34	SDLD001
SN54LS83AW	4-Bit Binary Adder	3-34	SDLD001
SN54LS85FK	4-Bit Magnitude Comparator	3-32	SDLD001
SN54LS85J	4-Bit Magnitude Comparator	3-32	SDLD001
SN54LS85W	4-Bit Magnitude Comparator	3-32	SDLD001
SN54LS86AFK	Quad 2-Input Exclusive OR Gate	3-7	SDLD001
SN54LS86AJ	Quad 2-Input Exclusive OR Gate	3-7	SDLD001
SN54LS86AW	Quad 2-Input Exclusive OR Gate	3-7	SDLD001
SN54LS90J	Decade Counter	3-26	SDLD001
SN54LS90W	Decade Counter	3-26	SDLD001
SN54LS91J	8-Bit Shift Register	3-22	SDLD001
SN54LS91W	8-Bit Shift Register	3-22	SDLD001
SN54LS92J	Divide-by-12 Counter	3-26	SDLD001
SN54LS92W	Divide-by-12 Counter	3-26	SDLD001
SN54LS93J	4-Bit Binary Counter	3-26	SDLD001
SN54LS93W	4-Bit Binary Counter	3-26	SDLD001
SN54LS95BFK	4-Bit Shift Register	3-22	SDLD001
SN54LS95BJ	4-Bit Shift Register	3-22	SDLD001
SN54LS95BW	4-Bit Shift Register	3-22	SDLD001
SN54LS96J	5-Bit Shift Register	3-22	SDLD001

*Use TI Reference Document for Electrical Parameters.

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN54LS96W	5-Bit Shift Register	3-22	SDLD001
SN54LS107AFK	Dual J-K Flip-Flop	3-17	SDLD001
SN54LS107AJ	Dual J-K Flip-Flop	3-17	SDLD001
SN54LS107AW	Dual J-K Flip-Flop	3-17	SDLD001*
SN54LS109AFK	Dual J-K Flip-Flop	3-17	SDLD001
SN54LS109AJ	Dual J-K Flip-Flop	3-17	SDLD001
SN54LS109AW	Dual J-K Flip-Flop	3-17	SDLD001
SN54LS122J	One Shot Multivibrator	3-20	SDLD001
SN54LS122W	One Shot Multivibrator	3-20	SDLD001
SN54LS123FK	Dual Monostable Multivibrator	3-20	SDLD001
SN54LS123J	Dual Monostable Multivibrator	3-20	SDLD001
SN54LS123W	Dual Monostable Multivibrator	3-20	SDLD001
SN54LS125AFK	Quad 3-State Buffer	3-12	SDLD001
SN54LS125AJ	Quad 3-State Buffer	3-12	SDLD001
SN54LS125AW	Quad 3-State Buffer	3-12	SDLD001
SN54LS126AFK	Quad 3-State Buffer	3-12	SDLD001
SN54LS126AJ	Quad 3-State Buffer	3-12	SDLD001
SN54LS126AW	Quad 3-State Buffer	3-12	SDLD001
SN54LS132FK	Quad 2-Input NAND Schmitt-Trigger	3-4	SDLD001
SN54LS132J	Quad 2-Input NAND Schmitt-Trigger	3-4	SDLD001
SN54LS132W	Quad 2-Input NAND Schmitt-Trigger	3-4	SDLD001
SN54LS136FK	Quad Exclusive OR Gate OC	3-7	SDLD001
SN54LS136J	Quad Exclusive OR Gate OC	3-7	SDLD001
SN54LS136W	Quad Exclusive OR Gate OC	3-7	SDLD001
SN54LS137FK	3-8 Line Decoder/Demultiplexer	3-30	SDLD001
SN54LS137J	3-8 Line Decoder/Demultiplexer	3-30	SDLD001
SN54LS137W	3-8 Line Decoder/Demultiplexer	3-30	SDLD001
SN54LS138FK	3-8 Line Decoder/Demultiplexer	3-30	SDLD001
SN54LS138J	3-8 Line Decoder/Demultiplexer	3-30	SDLD001
SN54LS138W	3-8 Line Decoder/Demultiplexer	3-30	SDLD001
SN54LS139AFK	Dual 1-4 Decoder/Demultiplexer	3-30	SDLD001
SN54LS139AJ	Dual 1-4 Decoder/Demultiplexer	3-30	SDLD001
SN54LS139AW	Dual 1-4 Decoder/Demultiplexer	3-30	SDLD001
SN54LS145FK	BCD-to-Decimal Decoder/Driver	3-30	SDLD001
SN54LS145J	BCD-to-Decimal Decoder/Driver	3-30	SDLD001
SN54LS145W	BCD-to-Decimal Decoder/Driver	3-30	SDLD001
SN54LS147J	10-4 Line Encoder	3-29	SDLD001
SN54LS148FK	8-3 Line Encoder	3-29	SDLD001
SN54LS148J	8-3 Line Encoder	3-29	SDLD001
SN54LS148W	8-3 Line Encoder	3-29	SDLD001
SN54LS151FK	8-1 Data Selector/Multiplexer	3-29	SDLD001
SN54LS151J	8-1 Data Selector/Multiplexer	3-29	SDLD001
SN54LS151W	8-1 Data Selector/Multiplexer	3-29	SDLD001
SN54LS153FK	Dual 4-1 Data Selector/Multiplexer	3-28	SDLD001
SN54LS153J	Dual 4-1 Data Selector/Multiplexer	3-28	SDLD001
SN54LS153W	Dual 4-1 Data Selector/Multiplexer	3-28	SDLD001
SN54LS155AJ	Dual 1-4 Decoder	3-30	SDLD001
SN54LS155AW	Dual 1-4 Decoder	3-30	SDLD001
SN54LS156FK	Dual 1-4 Decoder OC	3-30	SDLD001
SN54LS156J	Dual 1-4 Decoder OC	3-30	SDLD001
SN54LS156W	Dual 1-4 Decoder OC	3-30	SDLD001
SN54LS157FK	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN54LS157J	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN54LS157W	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN54LS158FK	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN54LS158J	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN54LS158W	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN54LS160AFK	4-Bit Synchronous Decade Counter	3-25	SDLD001
SN54LS160AJ	4-Bit Synchronous Decade Counter	3-25	SDLD001
SN54LS160AW	4-Bit Synchronous Decade Counter	3-25	SDLD001

*Use TI Reference Document for Electrical Parameters.

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN54LS161AFK	4-Bit Synchronous Binary Counter	3-25	SDLD001
SN54LS161AJ	4-Bit Synchronous Binary Counter	3-25	SDLD001
SN54LS161AW	4-Bit Synchronous Binary Counter	3-25	SDLD001
SN54LS162AFK	4-Bit Synchronous Decade Counter	3-25	SDLD001
SN54LS162AJ	4-Bit Synchronous Decade Counter	3-25	SDLD001
SN54LS162AW	4-Bit Synchronous Decade Counter	3-25	SDLD001
SN54LS163AFK	4-Bit Binary Counter	3-25	SDLD001
SN54LS163AJ	4-Bit Binary Counter	3-25	SDLD001
SN54LS163AW	4-Bit Binary Counter	3-25	SDLD001
SN54LS164FK	8-Bit Shift Register	3-22	SDLD001
SN54LS164J	8-Bit Shift Register	3-22	SDLD001
SN54LS164W	8-Bit Shift Register	3-22	SDLD001
SN54LS165AFK	8-Bit Shift Register	3-22	SDLD001
SN54LS165AJ	8-Bit Shift Register	3-22	SDLD001
SN54LS165AW	8-Bit Shift Register	3-22	SDLD001
SN54LS166AFK	8-Bit Shift Register	3-22	SDLD001
SN54LS166AJ	8-Bit Shift Register	3-22	SDLD001
SN54LS166AW	8-Bit Shift Register	3-22	SDLD001
SN54LS169BFK	4-Bit Synchronous Binary Counter	3-26	SDLD001
SN54LS169BJ	4-Bit Synchronous Binary Counter	3-26	SDLD001
SN54LS169BW	4-Bit Synchronous Binary Counter	3-26	SDLD001
SN54LS170J	4-by-4 Register File	3-23	SDLD001
SN54LS170W	4-by-4 Register File	3-23	SDLD001
SN54LS173AFK	Quad D-Type Register	3-24	SDLD001
SN54LS173AJ	Quad D-Type Register	3-24	SDLD001
SN54LS173AW	Quad D-Type Register	3-24	SDLD001
SN54LS174FK	Hex D-Type Flip-Flop	3-18	SDLD001
SN54LS174J	Hex D-Type Flip-Flop	3-18	SDLD001
SN54LS174W	Hex D-Type Flip-Flop	3-18	SDLD001
SN54LS175FK	Quad D-Type Flip-Flop	3-18	SDLD001
SN54LS175J	Quad D-Type Flip-Flop	3-18	SDLD001
SN54LS175W	Quad D-Type Flip-Flop	3-18	SDLD001
SN54LS181FK	4-Bit ALU	3-34	SDLD001
SN54LS181J	4-Bit ALU	3-34	SDLD001
SN54LS181W	4-Bit ALU	3-34	SDLD001
SN54LS183J	Dual Carry-Save Full Adder	—	SDLD001
SN54LS183W	Dual Carry-Save Full Adder	—	SDLD001
SN54LS189AFK	64-Bit RAM Code Converter	—	SDZD001B
SN54LS189AJ	64-Bit RAM Code Converter	—	SDZD001B
SN54LS190FK	Synchronous Up/Down Decade Counter	3-25	SDLD001
SN54LS190J	Synchronous Up/Down Decade Counter	3-25	SDLD001
SN54LS190W	Synchronous Up/Down Decade Counter	3-25	SDLD001
SN54LS191FK	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN54LS191J	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN54LS191W	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN54LS192J	Synchronous Up/Down Decade Counter	3-25	SDLD001
SN54LS192W	Synchronous Up/Down Decade Counter	3-25	SDLD001
SN54LS193FK	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN54LS193J	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN54LS193W	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN54LS194AFK	4-Bit Universal Shift Register	3-22	SDLD001
SN54LS194AJ	4-Bit Universal Shift Register	3-22	SDLD001
SN54LS194AW	4-Bit Universal Shift Register	3-22	SDLD001
SN54LS195AFK	4-Bit Shift Register	3-22	SDLD001*
SN54LS195AJ	4-Bit Shift Register	3-22	SDLD001
SN54LS195AW	4-Bit Shift Register	3-22	SDLD001
SN54LS196FK	4-Bit BCD Counter	3-26	SDLD001
SN54LS196J	4-Bit BCD Counter	3-26	SDLD001
SN54LS196W	4-Bit BCD Counter	3-26	SDLD001
SN54LS197FK	4-Bit Binary Counter	3-26	SDLD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN54LS197J	4-Bit Binary Counter	3-26	SDLD001
SN54LS197W	4-Bit Binary Counter	3-26	SDLD001
SN54LS219AFK	64-Bit RAM Code Converter	—	SDZD001B
SN54LS219AJ	64-Bit RAM Code Converter	—	SDZD001B
SN54LS221FK	Dual Monostable Multivibrator	3-20	SDLD001
SN54LS221J	Dual Monostable Multivibrator	3-20	SDLD001
SN54LS221W	Dual Monostable Multivibrator	3-20	SDLD001
SN54LS222FK	FIFO Memory 16 × 4	10-9	SDVD001*
SN54LS222J	FIFO Memory 16 × 4	10-9	SDVD001
SN54LS224FK	FIFO Memory 16 × 4	10-9	SDVD001*
SN54LS224J	FIFO Memory 16 × 4	10-9	SDVD001
SN54LS240FK	Octal Buffer/Line Driver	3-12	SDLD001
SN54LS240J	Octal Buffer/Line Driver	3-12	SDLD001
SN54LS240W	Octal Buffer/Line Driver	3-12	SDLD001*
SN54LS241FK	Octal Buffer/Line Driver	3-12	SDLD001
SN54LS241J	Octal Buffer/Line Driver	3-12	SDLD001
SN54LS241W	Octal Buffer/Line Driver	3-12	SDLD001*
SN54LS242FK	Octal Bus Transceiver	3-13	SDLD001
SN54LS242J	Octal Bus Transceiver	3-13	SDLD001
SN54LS242W	Octal Bus Transceiver	3-13	SDLD001
SN54LS243FK	Octal Bus Transceiver	3-13	SDLD001
SN54LS243J	Octal Bus Transceiver	3-13	SDLD001
SN54LS243W	Octal Bus Transceiver	3-13	SDLD001
SN54LS244FK	Octal Buffer/Line Driver	3-12	SDLD001
SN54LS244J	Octal Buffer/Line Driver	3-12	SDLD001
SN54LS244W	Octal Buffer/Line Driver	3-12	SDLD001*
SN54LS245FK	Octal Bus Transceiver	3-13	SDLD001
SN54LS245J	Octal Bus Transceiver	3-13	SDLD001
SN54LS245W	Octal Bus Transceiver	3-13	SDLD001*
SN54LS247J	BCD-to-7-Segment Decoder	3-30	SDLD001
SN54LS248J	BCD-to-7-Segment Decoder	—	SDLD001
SN54LS249J	BCD-to-7-Segment Decoder	—	SDLD001
SN54LS251FK	8-Input Data Selector/Multiplexer	3-29	SDLD001
SN54LS251J	8-Input Data Selector/Multiplexer	3-29	SDLD001
SN54LS251W	8-Input Data Selector/Multiplexer	3-29	SDLD001
SN54LS253FK	4-1 Data Selector/Multiplexer	3-28	SDLD001
SN54LS253J	4-1 Data Selector/Multiplexer	3-28	SDLD001
SN54LS253W	4-1 Data Selector/Multiplexer	3-28	SDLD001
SN54LS257BFK	Quad 2-Input Data Selector/Multiplexer	3-28	SDLD001
SN54LS257BJ	Quad 2-Input Data Selector/Multiplexer	3-28	SDLD001
SN54LS257BW	Quad 2-Input Data Selector/Multiplexer	3-28	SDLD001
SN54LS258BFK	Quad 2-Input Data Selector/Multiplexer	3-28	SDLD001
SN54LS258BJ	Quad 2-Input Data Selector/Multiplexer	3-28	SDLD001
SN54LS258BW	Quad 2-Input Data Selector/Multiplexer	3-28	SDLD001
SN54LS259BFK	8-Bit Addressable Latch	3-21	SDLD001
SN54LS259BJ	8-Bit Addressable Latch	3-21	SDLD001
SN54LS259BW	8-Bit Addressable Latch	3-21	SDLD001
SN54LS261J	2-Bit by 4-Bit Parallel Multiplexer	—	SDLD001
SN54LS261W	2-Bit by 4-Bit Parallel Multiplexer	—	SDLS001
SN54LS266FK	Quad Exclusive OR Gate OC	3-7	SDLD001
SN54LS266J	Quad Exclusive OR Gate OC	3-7	SDLD001
SN54LS266W	Quad Exclusive OR Gate OC	3-7	SDLD001
SN54LS273FK	Octal D-Type Flip-Flop	3-18	SDLD001
SN54LS273J	Octal D-Type Flip-Flop	3-18	SDLD001
SN54LS273W	Octal D-Type Flip-Flop	3-18	SDLD001
SN54LS279AFK	Quad Set/Reset Latch	3-20	SDLD001
SN54LS279AJ	Quad Set/Reset Latch	3-20	SDLD001
SN54LS279AW	Quad Set/Reset Latch	3-20	SDLD001
SN54LS280FK	9-Bit Parity Generator/Checker	3-33	SDLD001
SN54LS280J	9-Bit Parity Generator/Checker	3-33	SDLD001

*Use TI Reference Document for Electrical Parameters.

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN54LS280W	9-Bit Parity Generator/Checker	3-33	SDLD001
SN54LS283FK	4-Bit Full Adder	3-34	SDLD001
SN54LS283J	4-Bit Full Adder	3-34	SDLD001
SN54LS283W	4-Bit Full Adder	3-34	SDLD001
SN54LS289AFK	64-Bit RAM	—	SDZD001B
SN54LS289AJ	64-Bit RAM	—	SDZD001B
SN54LS290J	Decade Counter	3-26	SDLD001
SN54LS290W	Decade Counter	3-26	SDLD001
SN54LS293J	4-Bit Binary Counter	3-26	SDLD001
SN54LS293W	4-Bit Binary Counter	3-26	SDLD001
SN54LS295BJ	4-Bit Shift Register	3-22	SDLD001
SN54LS295BW	4-Bit Shift Register	3-22	SDLD001
SN54LS298FK	Quad 2-Input Multiplexer	3-28	SDLD001
SN54LS298J	Quad 2-Input Multiplexer	3-28	SDLD001
SN54LS298W	Quad 2-Input Multiplexer	3-28	SDLD001
SN54LS299FK	8-Bit Shift Register	3-22	SDLD001
SN54LS299J	8-Bit Shift Register	3-22	SDLD001
SN54LS299W	8-Bit Shift Register	3-22	SDLD001
SN54LS319AFK	64-Bit RAM	—	SDZD001B
SN54LS319AJ	64-Bit RAM	—	SDZD001B
SN54LS320J	Crystal-Controlled Oscillator	—	SDLD001
SN54LS320W	Crystal-Controlled Oscillator	—	SDLD001*
SN54LS321J	Crystal Controlled Oscillator	3-31	SDLD001
SN54LS322AJ	8-Bit Shift Register	3-22	SDLD001
SN54LS322AW	8-Bit Shift Register	3-22	SDLD001*
SN54LS323FK	8-Bit Shift/Storage Register	3-22	SDLD001
SN54LS323J	8-Bit Shift/Storage Register	3-22	SDLD001
SN54LS323W	8-Bit Shift/Storage Register	3-22	SDLD001*
SN54LS347J	BCD-to-7-Segment Decoder	—	SDLD001
SN54LS348FK	8-3 Line Encoder	3-29	SDLD001
SN54LS348J	8-3 Line Encoder	3-29	SDLD001
SN54LS348W	8-3 Line Encoder	3-29	SDLD001
SN54LS352J	Dual Data Selector/Multiplexer	3-28	SDLD001
SN54LS352W	Dual Data Selector/Multiplexer	3-28	SDLD001
SN54LS353FK	Dual Data Selector/Multiplexer	3-28	SDLD001
SN54LS353J	Dual Data Selector/Multiplexer	3-28	SDLD001
SN54LS353W	Dual Data Selector/Multiplexer	3-28	SDLD001
SN54LS356FK	8-1 Selector/Multiplexer Register	3-24	SDLD001
SN54LS356J	8-1 Selector/Multiplexer Register	3-24	SDLD001
SN54LS365AFK	Hex Bus Driver	3-10	SDLD001
SN54LS365AJ	Hex Bus Driver	3-10	SDLD001
SN54LS365AW	Hex Bus Driver	3-10	SDLD001*
SN54LS366AFK	Hex Bus Driver	3-10	SDLD001
SN54LS366AJ	Hex Bus Driver	3-10	SDLD001
SN54LS366AW	Hex Bus Driver	3-10	SDLD001*
SN54LS367AFK	Hex Bus Driver	3-10	SDLD001
SN54LS367AJ	Hex Bus Driver	3-10	SDLD001
SN54LS367AW	Hex Bus Driver	3-10	SDLD001*
SN54LS368AFK	Hex Bus Driver	3-10	SDLD001
SN54LS368AJ	Hex Bus Driver	3-10	SDLD001
SN54LS368AW	Hex Bus Driver	3-10	SDLD001*
SN54LS373FK	Octal D-Type Latch	3-21	SDLD001
SN54LS373J	Octal D-Type Latch	3-21	SDLD001
SN54LS373W	Octal D-Type Latch	3-21	SDLD001*
SN54LS374FK	Octal D-Type Flip-Flop	3-18	SDLD001
SN54LS374J	Octal D-Type Flip-Flop	3-18	SDLD001
SN54LS374W	Octal D-Type Flip-Flop	3-18	SDLD001*
SN54LS375FK	4-Bit Bistable Latch	3-20	SDLD001
SN54LS375J	4-Bit Bistable Latch	3-20	SDLD001
SN54LS375W	4-Bit Bistable Latch	3-20	SDLD001

*Use TI Reference Document for Electrical Parameters.

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN54LS377FK	Octal D-Type Flip-Flop	3-18	SDLD001
SN54LS377J	Octal D-Type Flip-Flop	3-18	SDLD001
SN54LS377W	Octal D-Type Flip-Flop	3-18	SDLD001
SN54LS378FK	Hex D-Type Flip-Flop	3-18	SDLD001
SN54LS378J	Hex D-Type Flip-Flop	3-18	SDLD001
SN54LS378W	Hex D-Type Flip-Flop	3-18	SDLD001
SN54LS379FK	Quad D-Type Flip-Flop	3-18	SDLD001
SN54LS379J	Quad D-Type Flip-Flop	3-18	SDLD001
SN54LS379W	Quad D-Type Flip-Flop	3-18	SDLD001
SN54LS381AFK	ALU/Function Generator	3-34	SDLD001
SN54LS381AJ	ALU/Function Generator	3-34	SDLD001
SN54LS382J	ALU/Function Generator	3-34	SDLD001
SN54LS385FK	Quad Serial Adder/Subtractor	—	SDLD001
SN54LS385J	Quad Serial Adder/Subtractor	—	SDLD001
SN54LS386AJ	Quad 2-Input Exclusive-OR Gate	—	SDLD001
SN54LS386AW	Quad 2-Input Exclusive-OR Gate	—	SDLD001
SN54LS390FK	4-Bit Decade Counter	3-26	SDLD001
SN54LS390J	4-Bit Decade Counter	3-26	SDLD001
SN54LS390W	4-Bit Decade Counter	3-26	SDLD001
SN54LS393FK	4-Bit Binary Counter	3-26	SDLD001
SN54LS393J	4-Bit Binary Counter	3-26	SDLD001
SN54LS393W	4-Bit Binary Counter	3-26	SDLD001
SN54LS395AFK	4-Bit Cascadable Shift Register	3-22	SDLD001
SN54LS395AJ	4-Bit Cascadable Shift Register	3-22	SDLD001
SN54LS395AW	4-Bit Cascadable Shift Register	3-22	SDLD001
SN54LS396J	Octal Storage Register	—	SDLD001
SN54LS398J	Quad 2-Input Multiplexer with Storage	—	SDLD001
SN54LS399FK	Quad 2-Input Multiplexer with Storage	3-28	SDLD001
SN54LS399J	Quad 2-Input Multiplexer with Storage	3-28	SDLD001
SN54LS399W	Quad 2-Input Multiplexer with Storage	3-28	SDLD001
SN54LS442FK	Bus Transceiver	3-13	SDLD001
SN54LS442J	Bus Transceiver	3-13	SDLD001
SN54LS490J	Dual 4-Bit Decade Counter	—	SDLD001
SN54LS490W	Dual 4-Bit Decade Counter	—	SDLD001
SN54LS540J	Octal Buffer/Line Driver	3-12	SDLD001
SN54LS541FK	Octal Buffer/Line Driver	3-12	SDLD001
SN54LS541J	Octal Buffer/Line Driver	3-12	SDLD001
SN54LS590FK	Binary Counter with Output Register	3-27	SDLD001
SN54LS590J	Binary Counter with Output Register	3-27	SDLD001
SN54LS590W	Binary Counter with Output Register	3-27	SDLD001
SN54LS592FK	Binary Counter with Input Register	3-27	SDLD001
SN54LS592J	Binary Counter with Input Register	3-27	SDLD001
SN54LS592W	Binary Counter with Input Register	3-27	SDLD001
SN54LS593FK	Binary Counter with Input Register	3-27	SDLD001
SN54LS593J	Binary Counter with Input Register	3-27	SDLD001
SN54LS593W	Binary Counter with Input Register	3-27	SDLD001
SN54LS595FK	Shift Register with Output Latch	3-23	SDLD001
SN54LS595J	Shift Register with Output Latch	3-23	SDLD001
SN54LS595W	Shift Register with Output Latch	3-23	SDLD001
SN54LS597FK	Shift Register with Input Latch	3-23	SDLD001
SN54LS597J	Shift Register with Input Latch	3-23	SDLD001
SN54LS597W	Shift Register with Input Latch	3-23	SDLD001*
SN54LS598FK	Shift Register with Input Latch	3-23	SDLD001
SN54LS598J	Shift Register with Input Latch	3-23	SDLD001
SN54LS598W	Shift Register with Input Latch	3-23	SDLD001*
SN54LS610JD	Memory Mapper with Latch	3-31	SDLD001
SN54LS624FK	Voltage-Controlled Oscillator	3-31	SDLD001
SN54LS624J	Voltage-Controlled Oscillator	3-31	SDLD001
SN54LS624W	Voltage-Controlled Oscillator	3-31	SDLD001
SN54LS626J	Voltage-Controlled Oscillator	—	SDLD001

*Use TI Reference Document for Electrical Parameters.

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN54LS628J	Voltage-Controlled Oscillator	3-31	SDLD001
SN54LS629J	Voltage-Controlled Oscillator	3-31	SDLD001
SN54LS629W	Voltage-Controlled Oscillator	3-31	SDLD001
SN54LS630FK	Error Detection and Correction Circuit	3-33	SDLD001
SN54LS630JD	Error Detection and Correction Circuit	3-33	SDLD001
SN54LS640FK	Octal Bus Transceiver	3-13	SDLD001
SN54LS640J	Octal Bus Transceiver	3-13	SDLD001
SN54LS641J	Octal Bus Transceiver	3-11	SDLD001
SN54LS642FK	Octal Bus Transceiver	3-11	SDLD001
SN54LS642J	Octal Bus Transceiver	3-11	SDLD001
SN54LS644J	Octal Bus Transceiver	3-11	SDLD001
SN54LS645FK	Octal Bus Transceiver	3-15	SDLD001
SN54LS645J	Octal Bus Transceiver	3-15	SDLD001
SN54LS668J	4-Bit Up/Down Counter	—	SDLD001
SN54LS669FK	4-Bit Up/Down Counter	3-25	SDLD001
SN54LS669J	4-Bit Up/Down Counter	3-25	SDLD001
SN54LS670FK	4-by-4 Register File	3-23	SDLD001
SN54LS670J	4-by-4 Register File	3-23	SDLD001
SN54LS670W	4-by-4 Register File	3-23	SDLD001
SN54LS673FK	16-Bit Shift Register	—	SDLD001
SN54LS673J	16-Bit Shift Register	—	SDLD001
SN54LS673W	16-Bit Shift Register	—	SDLD001
SN54LS674FK	16-Bit Shift Register	3-22	SDLD001
SN54LS674J	16-Bit Shift Register	3-22	SDLD001
SN54LS674W	16-Bit Shift Register	3-22	SDLD001
SN54LS681FK	4-Bit Binary Accumulator	3-34	SDLD001
SN54LS681J	4-Bit Binary Accumulator	3-34	SDLD001
SN54LS682FK	8-Bit Identity Comparator	3-32	SDLD001
SN54LS682J	8-Bit Identity Comparator	3-32	SDLD001
SN54LS683J	8-Bit Identity Comparator	—	SDLS001
SN54LS684FK	8-Bit Identity Comparator	3-32	SDLD001
SN54LS684J	8-Bit Identity Comparator	3-32	SDLD001
SN54LS684W	8-Bit Identity Comparator	3-32	SDLD001
SN54LS685J	8-Bit Identity Comparator	—	SDLD001
SN54LS688FK	8-Bit Magnitude Comparator	3-32	SDLD001
SN54LS688J	8-Bit Magnitude Comparator	3-32	SDLD001
SN54LS689J	8-Bit Magnitude Comparator	—	SDLD001
SN54LS691FK	Synchronous Counter	—	SDLD001
SN54LS691J	Synchronous Counter	—	SDLD001
SN54LS693FK	Synchronous Counter	—	SDLD001
SN54LS693J	Synchronous Counter	—	SDLD001
SN54LS696J	Synchronous Counter	—	SDLD001
SN54LS697FK	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN54LS697J	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN54LS697W	Synchronous Up/Down Binary Counter	3-26	SDLD001*
SN54LS699FK	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN54LS699J	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN54S00FK	Quad 2-Input NAND Gate	3-4	SDLD001
SN54S00J	Quad 2-Input NAND Gate	3-4	SDLD001
SN54S00W	Quad 2-Input NAND Gate	3-4	SDLD001
SN54S02FK	Quad 2-Input NOR Gate	3-6	SDLD001
SN54S02J	Quad 2-Input NOR Gate	3-6	SDLD001
SN54S02W	Quad 2-Input NOR Gate	3-6	SDLD001
SN54S03FK	Quad 2-Input NAND Gate	3-5	SDLD001
SN54S03J	Quad 2-Input NAND Gate	3-5	SDLD001
SN54S03W	Quad 2-Input NAND Gate	3-5	SDLD001
SN54S04FK	Hex Inverter	3-9	SDLD001
SN54S04J	Hex Inverter	3-9	SDLD001
SN54S04W	Hex Inverter	3-9	SDLD001
SN54S05FK	Hex Inverter OC	3-9	SDLD001

*Use TI Reference Document for Electrical Parameters.

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN54S05J	Hex Inverter OC	3-9	SDLD001
SN54S05W	Hex Inverter OC	3-9	SDLD001*
SN54S08FK	Quad 2-Input AND Gate	3-5	SDLD001
SN54S08J	Quad 2-Input AND Gate	3-5	SDLD001
SN54S08W	Quad 2-Input AND Gate	3-5	SDLD001
SN54S09FK	Quad 2-Input AND Gate OC	3-5	SDLD001
SN54S09J	Quad 2-Input AND Gate OC	3-5	SDLD001
SN54S09W	Quad 2-Input AND Gate OC	3-5	SDLD001
SN54S10FK	Triple 3-Input NAND Gate	3-4	SDLD001
SN54S10J	Triple 3-Input NAND Gate	3-4	SDLD001
SN54S10W	Triple 3-Input NAND Gate	3-4	SDLD001
SN54S11FK	Triple 3-Input AND Gate	3-5	SDLD001
SN54S11J	Triple 3-Input AND Gate	3-5	SDLD001
SN54S11W	Triple 3-Input AND Gate	3-5	SDLD001
SN54S15FK	Triple 3-Input AND Gate OC	3-5	SDLD001
SN54S15J	Triple 3-Input AND Gate OC	3-5	SDLD001
SN54S15W	Triple 3-Input AND Gate OC	3-5	SDLD001
SN54S20FK	Dual 4-Input NAND Gate	3-4	SDLD001
SN54S20J	Dual 4-Input NAND Gate	3-4	SDLD001
SN54S20W	Dual 4-Input NAND Gate	3-4	SDLD001
SN54S30FK	8-Input NAND Gate	3-4	SDLD001
SN54S30J	8-Input NAND Gate	3-4	SDLD001
SN54S30W	8-Input NAND Gate	3-4	SDLD001
SN54S32FK	Quad 2-Input OR Gate	3-6	SDLD001
SN54S32J	Quad 2-Input OR Gate	3-6	SDLD001
SN54S32W	Quad 2-Input OR Gate	3-6	SDLD001
SN54S37FK	Quad 2-Input NAND Buffer	3-4	SDLD001
SN54S37J	Quad 2-Input NAND Buffer	3-4	SDLD001
SN54S37W	Quad 2-Input NAND Buffer	3-4	SDLD001
SN54S38FK	Quad 2-Input NAND Buffer OC	3-4	SDLD001
SN54S38J	Quad 2-Input NAND Buffer OC	3-4	SDLD001
SN54S38W	Quad 2-Input NAND Buffer OC	3-4	SDLD001
SN54S40FK	Dual 4-Input NAND Buffer	3-4	SDLD001
SN54S40J	Dual 4-Input NAND Buffer	3-4	SDLD001
SN54S40W	Dual 4-Input NAND Buffer	3-4	SDLD001
SN54S51FK	Dual AND-OR-Invert Gate	3-7	SDLD001*
SN54S51J	Dual AND-OR-Invert Gate	3-7	SDLD001
SN54S51W	Dual AND-OR-Invert Gate	3-7	SDLD001
SN54S64FK	AND-OR-Invert Gate	3-7	SDLD001
SN54S64J	AND-OR-Invert Gate	3-7	SDLD001
SN54S64W	AND-OR-Invert Gate	3-7	SDLD001
SN54S65FK	AND-OR-Invert Gate	3-7	SDLD001
SN54S65J	AND-OR-Invert Gate	3-7	SDLD001
SN54S65W	AND-OR-Invert Gate	3-7	SDLD001
SN54S74FK	Dual D-Type Flip-Flop	3-17	SDLD001
SN54S74J	Dual D-Type Flip-Flop	3-17	SDLD001
SN54S74W	Dual D-Type Flip-Flop	3-17	SDLD001
SN54S85FK	4-Bit Magnitude Comparator	3-32	SDLD001
SN54S85J	4-Bit Magnitude Comparator	3-32	SDLD001
SN54S85W	4-Bit Magnitude Comparator	3-32	SDLD001
SN54S86FK	Quad 2-Input Exclusive OR Gate	3-7	SDLD001
SN54S86J	Quad 2-Input Exclusive OR Gate	3-7	SDLD001
SN54S86W	Quad 2-Input Exclusive OR Gate	3-7	SDLD001
SN54S112FK	Dual J-K Flip-Flop	3-17	SDLD001
SN54S112J	Dual J-K Flip-Flop	3-17	SDLD001
SN54S112W	Dual J-K Flip-Flop	3-17	SDLD001
SN54S113FK	Dual J-K Flip-Flop	3-17	SDLD001
SN54S113J	Dual J-K Flip-Flop	3-17	SDLD001
SN54S113W	Dual J-K Flip-Flop	3-17	SDLD001
SN54S114FK	Dual J-K Flip-Flop	3-17	SDLD001

*Use TI Reference Document for Electrical Parameters.

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN54S114J	Dual J-K Flip-Flop	3-17	SDLD001
SN54S114W	Dual J-K Flip-Flop	3-17	SDLD001
SN54S132FK	Quad 2-Input NAND Schmitt Trigger	3-4	SDLD001
SN54S132J	Quad 2-Input NAND Schmitt Trigger	3-4	SDLD001
SN54S132W	Quad 2-Input NAND Schmitt Trigger	3-4	SDLD001
SN54S133FK	13-Input NAND Gate	3-4	SDLD001
SN54S133J	13-Input NAND Gate	3-4	SDLD001
SN54S133W	13-Input NAND Gate	3-4	SDLD001
SN54S134J	12-Input NAND Gate	3-4	SDLD001
SN54S134W	12-Input NAND Gate	3-4	SDLD001
SN54S135J	Quad Exclusive OR/NOR Gate	3-7	SDLD001
SN54S135W	Quad Exclusive OR/NOR Gate	3-7	SDLD001
SN54S138FK	3-8 Line Decoder/Demultiplexer	3-30	SDLD001
SN54S138J	3-8 Line Decoder/Demultiplexer	3-30	SDLD001
SN54S138W	3-8 Line Decoder/Demultiplexer	3-30	SDLD001
SN54S139FK	Dual 2-4 Decoder/Demultiplexer	3-30	SDLD001
SN54S139J	Dual 2-4 Decoder/Demultiplexer	3-30	SDLD001
SN54S139W	Dual 2-4 Decoder/Demultiplexer	3-30	SDLD001
SN54S140FK	Dual 50 Ohm Line Driver	3-15	SDLD001
SN54S140J	Dual 50 Ohm Line Driver	3-15	SDLD001
SN54S140W	Dual 50 Ohm Line Driver	3-15	SDLD001
SN54S151FK	8-1 Data Select/Multiplexer	3-29	SDLD001
SN54S151J	8-1 Data Select/Multiplexer	3-29	SDLD001
SN54S151W	8-1 Data Select/Multiplexer	3-29	SDLD001
SN54S153FK	Dual 4-1 Data Selector/Multiplexer	3-28	SDLD001
SN54S153J	Dual 4-1 Data Selector/Multiplexer	3-28	SDLD001
SN54S153W	Dual 4-1 Data Selector/Multiplexer	3-28	SDLD001
SN54S157FK	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN54S157J	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN54S157W	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN54S158FK	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN54S158J	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN54S158W	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN54S162FK	4-Bit Synchronous Decade Counter	3-25	SDLD001
SN54S162J	4-Bit Synchronous Decade Counter	3-25	SDLD001
SN54S162W	4-Bit Synchronous Decade Counter	3-25	SDLD001
SN54S163FK	4-Bit Synchronous Binary Counter	3-25	SDLD001
SN54S163J	4-Bit Synchronous Binary Counter	3-25	SDLD001
SN54S163W	4-Bit Synchronous Binary Counter	3-25	SDLD001
SN54S169FK	4-Bit Synchronous Binary Counter	3-26	SDLD001
SN54S169J	4-Bit Synchronous Binary Counter	3-26	SDLD001
SN54S169W	4-Bit Synchronous Binary Counter	3-26	SDLD001
SN54S174FK	Hex D-Type Flip-Flop	3-18	SDLD001
SN54S174J	Hex D-Type Flip-Flop	3-18	SDLD001
SN54S174W	Hex D-Type Flip-Flop	3-18	SDLD001
SN54S175FK	Quad D-Type Flip-Flop	3-18	SDLD001
SN54S175J	Quad D-Type Flip-Flop	3-18	SDLD001
SN54S175W	Quad D-Type Flip-Flop	3-18	SDLD001
SN54S181FK	4-Bit ALU	3-34	SDLD001
SN54S181J	4-Bit ALU	3-34	SDLD001
SN54S181W	4-Bit ALU	3-34	SDLD001
SN54S182FK	Look-Ahead Carry Generator	3-34	SDLD001
SN54S182J	Look-Ahead Carry Generator	3-34	SDLD001
SN54S182W	Look-Ahead Carry Generator	3-34	SDLD001
SN54S194FK	Universal Shift Register	3-22	SDLD001
SN54S194J	Universal Shift Register	3-22	SDLD001
SN54S194W	Universal Shift Register	3-22	SDLD001
SN54S195FK	4-Bit Shift Register	3-22	SDLD001
SN54S195J	4-Bit Shift Register	3-22	SDLD001
SN54S195W	4-Bit Shift Register	3-22	SDLD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN54S196FK	4-Bit BCD Counter	3-26	SDLD001
SN54S196J	4-Bit BCD Counter	3-26	SDLD001
SN54S197J	4-Bit Binary Counter	3-26	SDLD001
SN54S197W	4-Bit Binary Counter	3-26	SDLD001
SN54S226J	4-Bit Bus Transceiver	—	SDLD001
SN54S240FK	Octal Buffer/Line Driver	3-12	SDLD001
SN54S240J	Octal Buffer/Line Driver	3-12	SDLD001
SN54S240W	Octal Buffer/Line Driver	3-12	SDLD001*
SN54S241FK	Octal Buffer/Line Driver	3-12	SDLD001
SN54S241J	Octal Buffer/Line Driver	3-12	SDLD001
SN54S241W	Octal Buffer/Line Driver	3-12	SDLD001*
SN54S244FK	Octal Buffer/Line Driver	3-12	SDLD001
SN54S244J	Octal Buffer/Line Driver	3-12	SDLD001
SN54S244W	Octal Buffer/Line Driver	3-12	SDLD001*
SN54S251FK	8-Bit Data Selector/Multiplexer	3-29	SDLD001
SN54S251J	8-Bit Data Selector/Multiplexer	3-29	SDLD001
SN54S251W	8-Bit Data Selector/Multiplexer	3-29	SDLD001
SN54S257FK	Quad 2-Input Data Selector/Multiplexer	3-28	SDLD001
SN54S257J	Quad 2-Input Data Selector/Multiplexer	3-28	SDLD001
SN54S257W	Quad 2-Input Data Selector/Multiplexer	3-28	SDLD001
SN54S258FK	Quad 2-Input Data Selector/Multiplexer	3-28	SDLD001
SN54S258J	Quad 2-Input Data Selector/Multiplexer	3-28	SDLD001
SN54S258W	Quad 2-Input Data Selector/Multiplexer	3-28	SDLD001
SN54S260FK	Dual 5-Input NOR Gate	3-6	SDLD001
SN54S260J	Dual 5-Input NOR Gate	3-6	SDLD001
SN54S260W	Dual 5-Input NOR Gate	3-6	SDLD001
SN54S280FK	9-Bit Parity Generator/Checker	3-33	SDLD001
SN54S280J	9-Bit Parity Generator/Checker	3-33	SDLD001
SN54S280W	9-Bit Parity Generator/Checker	3-33	SDLD001
SN54S283FK	4-Bit Full Adder	3-34	SDLD001
SN54S283J	4-Bit Full Adder	3-34	SDLD001
SN54S299FK	8-Bit Shift Register	3-22	SDLD001
SN54S299J	8-Bit Shift Register	3-22	SDLD001
SN54S373FK	Octal D-Type Latch	3-21	SDLD001
SN54S373J	Octal D-Type Latch	3-21	SDLD001
SN54S373W	Octal D-Type Latch	3-21	SDLD001*
SN54S374FK	Octal D-Type Flip-Flop	3-18	SDLD001
SN54S374J	Octal D-Type Flip-Flop	3-18	SDLD001
SN54S374W	Octal D-Type Flip-Flop	3-18	SDLD001*
SN54S381FK	ALU/Function Generator	3-34	SDLD001
SN54S381J	ALU/Function Generator	3-34	SDLD001
SN5400J	Quad 2-Input NAND Gate	3-4	SDLD001
SN5400W	Quad 2-Input NAND Gate	3-4	SDLD001
SN5401J	Quad 2-Input NAND Gate OC	3-5	SDLD001
SN5401W	Quad 2-Input NAND Gate OC	3-5	SDLD001
SN5402J	Quad 2-Input NOR Gate	3-6	SDLD001
SN5402W	Quad 2-Input NCR Gate	3-6	SDLD001
SN5403J	Quad 2-Input NAND Gate OC	3-5	SDLD001
SN5403W	Quad 2-Input NAND Gate OC	3-5	SDLD001*
SN5404J	Hex Inverter	3-9	SDLD001
SN5404W	Hex Inverter	3-9	SDLD001
SN5405J	Hex Inverter OC	3-9	SDLD001
SN5405W	Hex Inverter OC	3-9	SDLD001
SN5406FK	Hex Inverter OC	3-9	SDLD001*
SN5406J	Hex Inverter OC	3-9	SDLD001
SN5406W	Hex Inverter OC	3-9	SDLD001
SN5407FK	Hex Buffer OC	3-10	SDLD001*
SN5407J	Hex Buffer OC	3-10	SDLD001
SN5407W	Hex Buffer OC	3-10	SDLD001
SN5408J	Quad 2-Input AND Gate	3-5	SDLD001

*Use TI Reference Document for Electrical Parameters.

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN5408W	Quad 2-Input AND Gate	3-5	SDLD001
SN5409J	Quad 2-Input AND Gate OC	3-5	SDLD001
SN5410J	Triple 3-Input NAND Gate	3-4	SDLD001
SN5410W	Triple 3-Input NAND Gate	3-4	SDLD001
SN5412J	Triple 3-Input NAND Gate OC	3-5	SDLD001
SN5412W	Triple 3-Input NAND Gate OC	3-5	SDLD001
SN5413J	Dual NAND Schmitt-Trigger	3-4	SDLD001
SN5413W	Dual NAND Schmitt-Trigger	3-4	SDLD001
SN5414J	Hex Schmitt-Trigger	3-9	SDLD001
SN5414W	Hex Schmitt-Trigger	3-9	SDLD001
SN5416J	Hex Inverter/Driver	3-9	SDLD001
SN5416W	Hex Inverter/Driver	3-9	SDLD001
SN5417J	Hex Buffer/Driver OC	3-10	SDLD001
SN5420J	Dual 4-Input NAND Gate	3-4	SDLD001
SN5420W	Dual 4-Input NAND Gate	3-4	SDLD001
SN5422J	Dual 4-Input NAND Gate	3-5	SDLD001
SN5423J	Dual 4-Input NOR Gate	3-8	SDLD001
SN5423W	Dual 4-Input NOR Gate	3-8	SDLD001
SN5425J	Dual 4-Input NOR Gate	3-6	SDLD001
SN5425W	Dual 4-Input NOR Gate	3-6	SDLD001
SN5426J	Quad 2-Input NAND Gate	3-4	SDLD001
SN5427J	Triple 3-Input NOR Gate	3-6	SDLD001
SN5427W	Triple 3-Input NOR Gate	3-6	SDLD001
SN5428J	Quad 2-Input NOR Buffer	3-6	SDLD001
SN5428W	Quad 2-Input NOR Buffer	3-6	SDLD001
SN5430J	8-Input NAND Gate	3-4	SDLD001
SN5430W	8-Input NAND Gate	3-4	SDLD001
SN5432J	Quad 2-Input OR Gate	3-6	SDLD001
SN5432W	Quad 2-Input OR Gate	3-6	SDLD001
SN5433J	Quad 2-Input NOR Buffer OC	3-6	SDLD001
SN5433W	Quad 2-Input NOR Buffer OC	3-6	SDLD001
SN5437J	Quad 2-Input NAND Buffer	3-4	SDLD001
SN5437W	Quad 2-Input NAND Buffer	3-4	SDLD001
SN5438J	Quad 2-Input NAND Buffer OC	3-4	SDLD001
SN5438W	Quad 2-Input NAND Buffer OC	3-4	SDLD001
SN5440J	Dual 4-Input NAND Buffer	3-4	SDLD001
SN5440W	Dual 4-Input NAND Buffer	3-4	SDLD001*
SN5444AJ	4-Line to 10-Line Decoder	—	SDLD001
SN5444AW	4-Line to 10-Line Decoder	—	SDLD001*
SN5445J	BCD-to-Decimal Decoder/Driver	3-30	SDLD001
SN5445W	BCD-to-Decimal Decoder/Driver	3-30	SDLD001*
SN5446AJ	BCD-7-Segment Decoder/Driver	3-30	SDLD001
SN5446AW	BCD-7-Segment Decoder/Driver	3-30	SDLD001
SN5447AJ	BCD-7-Segment Decoder/Driver	3-30	SDLD001
SN5448J	BCD-7-Segment Decoder/Driver	—	SDLD001
SN5448W	BCD-7-Segment Decoder/Driver	—	SDLD001
SN5450J	Dual AND-OR-Invert Gate	3-8	SDLD001
SN5450W	Dual AND-OR-Invert Gate	3-8	SDLD001
SN5451J	Dual AND-OR-Invert Gate	3-7	SDLD001
SN5451W	Dual AND-OR-Invert Gate	3-7	SDLD001
SN5453J	Expandable 4-Wide AND-OR-Invert Gate	—	SDLD001
SN5453W	Expandable 4-Wide AND-OR-Invert Gate	—	SDLD001
SN5454J	AND-OR-Invert Gate	3-7	SDLD001
SN5454W	AND-OR-Invert Gate	3-7	SDLD001
SN5470J	AND-Gated J-K Flip-Flop	3-17	SDLD001
SN5470W	AND-Gated J-K Flip-Flop	3-17	SDLD001
SN5472J	Master-Slave Flip-Flop	—	SDLD001
SN5472W	Master-Slave Flip-Flop	—	SDLD001
SN5473J	Dual J-K Flip-Flop	3-17	SDLD001
SN5473W	Dual J-K Flip-Flop	3-17	SDLD001

*Use TI Reference Document for Electrical Parameters.

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN5474J	Dual D-Type Flip-Flop	3-17	SDLD001
SN5474W	Dual D-Type Flip-Flop	3-17	SDLD001
SN5475J	4-Bit Latch	3-20	SDLD001
SN5475W	4-Bit Latch	3-20	SDLD001
SN5476J	Dual J-K Flip-Flop	3-17	SDLD001
SN5477W	4-Bit Bistable Latch	—	SDLD001
SN5482J	2-Bit Binary Full Adder	—	SDLD001
SN5482W	2-Bit Binary Full Adder	—	SDLD001
SN5483AJ	4-Bit Binary Adder	3-34	SDLD001
SN5483AW	4-Bit Binary Adder	3-34	SDLD001
SN5485J	4-Bit Magnitude Comparator	3-32	SDLD001
SN5485W	4-Bit Magnitude Comparator	3-32	SDLD001
SN5486J	Quad 2-Input Exclusive OR Gate	3-7	SDLD001
SN5486W	Quad 2-Input Exclusive OR Gate	3-7	SDLD001
SN5490AJ	Decade Binary Counter	—	SDLD001
SN5490AW	Decade Binary Counter	—	SDLD001
SN5491AJ	8-Bit Shift Register	—	SDLD001
SN5491AW	8-Bit Shift Register	—	SDLD001
SN5492AJ	Divide-by-12 Counter	3-26	SDLD001
SN5492AW	Divide-by-12 Counter	3-26	SDLD001
SN5493AJ	4-Bit Binary Counter	3-26	SDLD001
SN5493AW	4-Bit Binary Counter	3-26	SDLD001
SN5494J	4-Bit Shift Register	—	SDLD001
SN5494W	4-Bit Shift Register	—	SDLD001
SN5495AJ	4-Bit Shift Register	3-22	SDLD001
SN5495AW	4-Bit Shift Register	3-22	SDLD001
SN5496J	5-Bit Shift Register	3-22	SDLD001
SN5496W	5-Bit Shift Register	3-22	SDLD001
SN5497J	Binary Rate Multiplier	3-27	SDLD001
SN54100J	8-Bit Bistable Latch	—	SDLD001
SN54100W	8-Bit Bistable Latch	—	SDLD001
SN54107J	Dual J-K Flip-Flop	3-17	SDLD001
SN54109J	Dual J-K Flip-Flop	3-17	SDLD001
SN54109W	Dual J-K Flip-Flop	3-17	SDLD001
SN54111J	Dual J-K Master-Slave	—	SDLD001
SN54116J	Dual 4-Bit Latch	3-21	SDLD001
SN54116W	Dual 4-Bit Latch	3-21	SDLD001
SN54120J	Dual Pulse Synchronizer/Driver	3-16	SDLD001
SN54121J	One-Shot Multivibrator	3-20	SDLD001
SN54121W	One-Shot Multivibrator	3-20	SDLD001
SN54122J	One-Shot Multivibrator	3-20	SDLD001
SN54123J	Dual Monostable Multivibrator	3-20	SDLD001
SN54125J	Quad 3-State Buffer	3-12	SDLD001
SN54125W	Quad 3-State Buffer	3-12	SDLD001
SN54126J	Quad 3-State Buffer	3-12	SDLD001
SN54126W	Quad 3-State Buffer	3-12	SDLD001
SN54128J	50 Ohm Line Driver	3-16	SDLD001
SN54128W	50 Ohm Line Driver	3-16	SDLD001
SN54132J	Quad 2-Input NAND Schmitt-Trigger	3-4	SDLD001
SN54136J	Quad Exclusive OR Gate OC	3-7	SDLD001
SN54144J	4-Bit Counter/Latch/Driver	—	SDLD001
SN54147J	10-to-4 Line Encoder	3-29	SDLD001
SN54148J	8-to-3 Line Encoder	3-29	SDLD001
SN54148W	8-to-3 Line Encoder	3-29	SDLD001
SN54150J	Data Selector/Multiplexer	3-29	SDLD001
SN54150W	Data Selector/Multiplexer	3-29	SDLD001
SN54151AJ	8-1 Data Selector/Multiplexer	3-29	SDLD001
SN54151AW	8-1 Data Selector/Multiplexer	3-29	SDLD001
SN54153J	Dual 4-1 Data Selector/Multiplexer	3-28	SDLD001
SN54153W	Dual 4-1 Data Selector/Multiplexer	3-28	SDLD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN54154J	4-to-16 Line Decoder	3-30	SDLD001
SN54154W	4-to-16 Line Decoder	3-30	SDLD001
SN54155J	Dual 1-4 Decoder	3-30	SDLD001
SN54155W	Dual 1-4 Decoder	3-30	SDLD001
SN54156J	Dual 1-4 Decoder OC	3-30	SDLD001
SN54157J	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN54157W	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN54160J	4-Bit Synchronous Decade Counter	3-25	SDLD001
SN54161J	4-Bit Synchronous Binary Counter	3-25	SDLD001
SN54161W	4-Bit Synchronous Binary Counter	3-25	SDLD001
SN54162J	Synchronous 4-Bit Counter	—	SDLD001
SN54162W	Synchronous 4-Bit Counter	—	SDLD001
SN54163J	4-Bit Binary Counter	3-25	SDLD001
SN54163W	4-Bit Binary Counter	3-25	SDLD001
SN54164J	8-Bit Shift Register	3-22	SDLD001
SN54164W	8-Bit Shift Register	3-22	SDLD001
SN54165J	8-Bit Shift Register	3-22	SDLD001
SN54165W	8-Bit Shift Register	3-22	SDLD001
SN54166J	8-Bit Shift Register	3-22	SDLD001
SN54166W	8-Bit Shift Register	3-22	SDLD001
SN54167J	Synchronous Rate Multiplexer	3-27	SDLD001
SN54170J	4-by-4 Register File	3-23	SDLD001
SN54173J	4-Bit D-Type Register	3-24	SDLD001
SN54173W	4-Bit D-Type Register	3-24	SDLD001
SN54174J	Hex D-Type Flip-Flop	3-18	SDLD001
SN54174W	Hex D-Type Flip-Flop	3-18	SDLD001
SN54175J	Quad D-Type Flip-Flop	3-18	SDLD001
SN54175W	Quad D-Type Flip-Flop	3-18	SDLD001
SN54176J	4-Bit BCD Counter	3-26	SDLD001
SN54177J	4-Bit Binary Counter	3-26	SDLD001
SN54178J	4-Bit Parallel Register	—	SDLD001
SN54179J	4-Bit Parallel Register	—	SDLD001
SN54180J	Parity Generator/Checker	3-33	SDLD001
SN54180W	Parity Generator/Checker	3-33	SDLD001
SN54181J	4-Bit ALU	—	SDLD001
SN54181W	4-Bit ALU	—	SDLD001
SN54182J	Look-Ahead Carry Generator	—	SDLD001
SN54182W	Look-Ahead Carry Generator	—	SDLD001
SN54184J	BCD to Binary Counter	—	SDLD001
SN54185AJ	Binary to BCD Converter	—	SDLD001
SN54190J	Synchronous Up/Down Decade Counter	3-25	SDLD001
SN54191J	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN54191W	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN54192J	Synchronous Up/Down Decade Counter	3-25	SDLD001
SN54192W	Synchronous Up/Down Decade Counter	3-25	SDLD001
SN54193J	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN54193W	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN54195J	4-Bit Shift Register	3-22	SDLD001
SN54195W	4-Bit Shift Register	3-22	SDLD001
SN54196J	4-Bit BCD Counter	3-26	SDLD001
SN54197J	4-Bit Binary Counter	3-26	SDLD001
SN54197W	4-Bit Binary Counter	3-26	SDLD001
SN54198J	8-Bit Shift Register	3-22	SDLD001
SN54198W	8-Bit Shift Register	3-22	SDLD001
SN54199J	8-Bit Shift Register	3-22	SDLD001
SN54199W	8-Bit Shift Register	3-22	SDLD001
SN54221J	Dual Monostable Multivibrator	3-20	SDLD001
SN54246J	BCD-to-7-Segment Driver	—	SDLD001
SN54247J	BCD-to-7-Segment Driver	—	SDLD001
SN54251J	8-1 Data Selector/Multiplexer	3-29	SDLD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN54259J	8-Bit Addressable Latch	3-21	SDLD001
SN54259W	8-Bit Addressable Latch	3-21	SDLD001
SN54265J	Quad AND/NAND Gate	3-8	SDLD001
SN54278J	4-Bit Priority Register	—	SDLD001
SN54278W	4-Bit Priority Register	—	SDLD001
SN54279J	Quad Set/Reset Latch	3-20	SDLD001
SN54279W	Quad Set/Reset Latch	3-20	SDLD001
SN54283J	4-Bit Full Adder	3-34	SDLD001
SN54283W	4-Bit Full Adder	3-34	SDLD001
SN54284J	4-by-4 Binary Multiplier	—	SDLD001
SN54285J	4-by-4 Binary Multiplier	—	SDLD001
SN54290J	Decade and 4-Bit Binary Counter	—	SDLD001
SN54293J	4-Bit Binary Counter	3-26	SDLD001
SN54298J	Quad 2-Input Multiplexer	3-28	SDLD001
SN54298W	Quad 2-Input Multiplexer	3-28	SDLD001
SN54365AJ	Hex Bus Driver	3-10	SDLD001
SN54366AJ	Hex Bus Driver	3-10	SDLD001
SN54366AW	Hex Bus Driver	3-10	SDLD001
SN54367AJ	Hex Bus Driver	3-10	SDLD001
SN54367AW	Hex Bus Driver	3-10	SDLD001*
SN54368AJ	Hex Bus Driver	3-10	SDLD001
SN54368AW	Hex Bus Driver	3-10	SDLD001*
SN54376J	Quad J-K Flip-Flop	3-18	SDLD001
SN54390J	4-Bit Decade Counter	3-26	SDLD001
SN54393J	4-Bit Binary Counter	3-26	SDLD001
SN54393W	4-Bit Binary Counter	3-26	SDLD001
SN55ALS192FK	Line Driver	—	SLLS007A
SN55ALS192J	Line Driver	—	SLLS007A
SN55ALS193FK	Line Receiver	—	SLYD002*
SN55ALS193J	Line Receiver	—	SLYD002*
SN55ALS194FK	Line Driver	—	SLYD002*
SN55ALS194J	Line Driver	—	SLYD002*
SN55ALS195FK	Line Receiver	—	SLYD002*
SN55ALS195J	Line Receiver	—	SLYD002*
SN74ACT8816GB	16-Bit Registered ALU	—	TBA
SN74ACT8818GB	16-Bit Microsequencer	4-46	TBA
SN74ACT8832GB	32-Bit Registered ALU	4-44	TBA
SN74ACT8836GB	Integer Multiplier	4-48	TBA
SN74ACT8837GB	Floating Point Processor	4-50	TBA
SN74ACT11000D	Quad 2-Input NAND Gate	3-4	SCAD001
SN74ACT11000N	Quad 2-Input NAND Gate	3-4	SCAD001
SN74ACT11002D	Quad 2-Input NOR Gate	3-6	SCAD001
SN74ACT11002N	Quad 2-Input NOR Gate	3-6	SCAD001
SN74ACT11004DW	Hex Inverter	3-9	SCAD001
SN74ACT11004N	Hex Inverter	3-9	SCAD001
SN74ACT11008D	Quad 2-Input AND Gate	3-5	SCAD001
SN74ACT11008N	Quad 2-Input AND Gate	3-5	SCAD001
SN74ACT11010D	Triple 3-Input NAND Gate	3-4	SCAD001
SN74ACT11010N	Triple 3-Input NAND Gate	3-4	SCAD001
SN74ACT11011D	Triple 3-Input AND Gate	3-5	SCAD001
SN74ACT11011N	Triple 3-Input AND Gate	3-5	SCAD001
SN74ACT11020D	Dual 4-Input NAND Gate	3-4	SCAD001
SN74ACT11020N	Dual 4-Input NAND Gate	3-4	SCAD001
SN74ACT11021D	Dual 4-Input AND Gate	3-5	SCAD001
SN74ACT11021N	Dual 4-Input AND Gate	3-5	SCAD001
SN74ACT11027D	Triple 3-Input NOR Gate	3-6	SCAD001
SN74ACT11027N	Triple 3-Input NOR Gate	3-6	SCAD001
SN74ACT11030D	8-Input NAND Gate	3-4	SCAD001
SN74ACT11030N	8-Input NAND Gate	3-4	SCAD001
SN74ACT11032D	Quad 2-Input OR Gate	3-6	SCAD001

*Use TI Reference Document for Electrical Parameters.

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74ACT11032N	Quad 2-Input OR Gate	3-6	SCAD001
SN74ACT11034DW	Hex Non-Inverter	3-9	SCAD001
SN74ACT11034N	Hex Non-Inverter	3-9	SCAD001
SN74ACT11074D	Dual D-Type Flip-Flop	3-17	SCAD001
SN74ACT11074N	Dual D-Type Flip-Flop	3-17	SCAD001
SN74ACT11109D	Dual J-K Flip-Flop	3-17	SCAD001
SN74ACT11109N	Dual J-K Flip-Flop	3-17	SCAD001
SN74ACT11181DW	ALU Function Generator	3-34	SCAD001
SN74ACT11181NT	ALU Function Generator	3-34	SCAD001
SN74ACT11240DW	Octal Buffer/Line Driver	3-12	SCAD001
SN74ACT11240NT	Octal Buffer/Line Driver	3-12	SCAD001
SN74ACT11241DW	Octal Buffer/Line Driver	3-12	SCAD001
SN74ACT11241NT	Octal Buffer/Line Driver	3-12	SCAD001
SN74ACT11244DW	Octal Buffer/Line Driver	3-12	SCAD001
SN74ACT11244NT	Octal Buffer/Line Driver	3-12	SCAD001
SN74ACT11245DW	Octal Bus Transceiver	3-13	SCAD001
SN74ACT11245NT	Octal Bus Transceiver	3-13	SCAD001
SN74ACT11373DW	Octal D-Type Latch	3-21	SCAD001
SN74ACT11373NT	Octal D-Type Latch	3-21	SCAD001
SN74ACT11374DW	Octal D-Type Flip-Flop	3-18	SCAD001
SN74ACT11374NT	Octal D-Type Flip-Flop	3-18	SCAD001
SN74ACT11520DW	8-Bit Identity Comparator	3-32	SCAD001
SN74ACT11520N	8-Bit Identity Comparator	3-32	SCAD001
SN74ACT11521DW	8-Bit Identity Comparator	3-32	SCAD001
SN74ACT11521N	8-Bit Identity Comparator	3-32	SCAD001
SN74ACT11533DW	Octal D-Type Latch	3-21	SCAD001
SN74ACT11533NT	Octal D-Type Latch	3-21	SCAD001
SN74ACT11534DW	Octal D-Type Flip-Flop	3-19	SCAD001
SN74ACT11534NT	Octal D-Type Flip-Flop	3-19	SCAD001
SN74ACT11620DW	Octal Bus Transceiver	3-13	SCAD001
SN74ACT11620NT	Octal Bus Transceiver	3-13	SCAD001
SN74ACT11623DW	Octal Bus Transceiver	3-15	SCAD001
SN74ACT11623NT	Octal Bus Transceiver	3-15	SCAD001
SN74ACT11640DW	Octal Bus Transceiver	3-13	SCAD001
SN74ACT11640NT	Octal Bus Transceiver	3-13	SCAD001
SN74ACT11643DW	Octal Bus Transceiver	3-14	SCAD001
SN74ACT11643NT	Octal Bus Transceiver	3-14	SCAD001
SN74ACT11646DW	Octal Bus Transceiver	3-14	SCAD001
SN74ACT11646NT	Octal Bus Transceiver	3-14	SCAD001
SN74ACT11648DW	Octal Bus Transceiver	3-14	SCAD001
SN74ACT11648NT	Octal Bus Transceiver	3-14	SCAD001
SN74ACT11651DW	Octal Bus Transceiver	3-14	SCAD001
SN74ACT11651NT	Octal Bus Transceiver	3-14	SCAD001
SN74ACT11652DW	Octal Bus Transceiver	3-14	SCAD001
SN74ACT11652NT	Octal Bus Transceiver	3-14	SCAD001
SN74ACT11881DW	ALU Function Generator	3-34	SCAD001
SN74ACT11881NT	ALU Function Generator	3-34	SCAD001
SN74ACT11882DW	32-Bit Look-ahead Carry Generator	3-34	SCAD001
SN74ACT11882NT	32-Bit Look-ahead Carry Generator	3-34	SCAD001
SN74ACT29116JD	16-Bit Microprocessor	—	SCAS021
SN74ACT29116N	16-Bit Microprocessor	—	SCAS021
SN74ACT29116FN	16-Bit Microprocessor	—	SCAS021
SN74AC11000D	Quad 2-Input NAND Gate	3-4	SCAD001
SN74AC11000N	Quad 2-Input NAND Gate	3-4	SCAD001
SN74AC11002D	Quad 2-Input NOR Gate	3-6	SCAD001
SN74AC11002N	Quad 2-Input NOR Gate	3-6	SCAD001
SN74AC11004DW	Hex Inverter	3-9	SCAD001
SN74AC11004N	Hex Inverter	3-9	SCAD001
SN74AC11008D	Quad 2-Input AND Gate	3-5	SCAD001
SN74AC11008N	Quad 2-Input AND Gate	3-5	SCAD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74AC11010D	Triple 3-Input NAND Gate	3-4	SCAD001
SN74AC11010N	Triple 3-Input NAND Gate	3-4	SCAD001
SN74AC11011D	Triple 3-Input AND Gate	3-5	SCAD001
SN74AC11011N	Triple 3-Input AND Gate	3-5	SCAD001
SN74AC11020D	Dual 4-Input NAND Gate	3-4	SCAD001
SN74AC11020N	Dual 4-Input NAND Gate	3-4	SCAD001
SN74AC11021D	Dual 4-Input AND Gate	3-5	SCAD001
SN74AC11021N	Dual 4-Input AND Gate	3-5	SCAD001
SN74AC11027D	Triple 3-Input NOR Gate	3-6	SCAD001
SN74AC11027N	Triple 3-Input NOR Gate	3-6	SCAD001
SN74AC11030D	8-Input NAND Gate	3-4	SCAD001
SN74AC11030N	8-Input NAND Gate	3-4	SCAD001
SN74AC11032D	Quad 2-Input OR Gate	3-6	SCAD001
SN74AC11032N	Quad 2-Input OR Gate	3-6	SCAD001
SN74AC11034DW	Hex Non-Inverter	3-9	SCAD001
SN74AC11034N	Hex Non-Inverter	3-9	SCAD001
SN74AC11074D	Dual D-Type Flip-Flop	3-17	SCAD001
SN74AC11074N	Dual D-Type Flip-Flop	3-17	SCAD001
SN74AC11109D	Dual J-K Flip-Flop	3-17	SCAD001
SN74AC11109N	Dual J-K Flip-Flop	3-17	SCAD001
SN74AC11181DW	ALU Function Generator	3-34	SCAD001
SN74AC11181NT	ALU Function Generator	3-34	SCAD001
SN74AC11240DW	Octal Buffer/ Line Driver	3-12	SCAD001
SN74AC11240NT	Octal Buffer/ Line Driver	3-12	SCAD001
SN74AC11244DW	Octal Buffer/ Line Driver	3-12	SCAD001
SN74AC11244NT	Octal Buffer/ Line Driver	3-12	SCAD001
SN74AC11245DW	Octal Bus Transceiver	3-13	SCAD001
SN74AC11245NT	Octal Bus Transceiver	3-13	SCAD001
SN74AC11373DW	Octal D-Type Latch	3-21	SCAD001
SN74AC11373NT	Octal D-Type Latch	3-21	SCAD001
SN74AC11374DW	Octal D-Type Flip-Flop	3-18	SCAD001
SN74AC11374NT	Octal D-Type Flip-Flop	3-18	SCAD001
SN74AC11520DW	8-Bit Identity Comparator	3-32	SCAD001
SN74AC11520N	8-Bit Identity Comparator	3-32	SCAD001
SN74AC11521DW	8-Bit Identity Comparator	3-32	SCAD001
SN74AC11521N	8-Bit Identity Comparator	3-32	SCAD001
SN74AC11533DW	Octal D-Type Latch	3-21	SCAD001
SN74AC11533NT	Octal D-Type Latch	3-21	SCAD001
SN74AC11534DW	Octal D-Type Flip-Flop	3-19	SCAD001
SN74AC11534NT	Octal D-Type Flip-Flop	3-19	SCAD001
SN74AC11620DW	Octal Bus Transceiver	3-13	SCAD001
SN74AC11620NT	Octal Bus Transceiver	3-13	SCAD001
SN74AC11623DW	Octal Bus Transceiver	3-15	SCAD001
SN74AC11623NT	Octal Bus Transceiver	3-15	SCAD001
SN74AC11640DW	Octal Bus Transceiver	3-13	SCAD001
SN74AC11640NT	Octal Bus Transceiver	3-13	SCAD001
SN74AC11643DW	Octal Bus Transceiver	3-14	SCAD001
SN74AC11643NT	Octal Bus Transceiver	3-14	SCAD001
SN74AC11646DW	Octal Bus Transceiver	3-14	SCAD001
SN74AC11646NT	Octal Bus Transceiver	3-14	SCAD001
SN74AC11648DW	Octal Bus Transceiver	3-14	SCAD001
SN74AC11648NT	Octal Bus Transceiver	3-14	SCAD001
SN74AC11651DW	Octal Bus Transceiver	3-14	SCAD001
SN74AC11651NT	Octal Bus Transceiver	3-14	SCAD001
SN74AC11652DW	Octal Bus Transceiver	3-14	SCAD001
SN74AC11652NT	Octal Bus Transceiver	3-14	SCAD001
SN74AC11882DW	32-Bit Look-Ahead Carry Generator	3-34	SCAD001
SN74AC11882NT	32-Bit Look-Ahead Carry Generator	3-34	SCAD001
SN74ALS00AD	Quad 2-Input NAND Gate	3-4	SDAD001B
SN74ALS00AFN	Quad 2-Input NAND Gate	3-4	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74ALS00AN	Quad 2-Input NAND Gate	3-4	SDAD001B
SN74ALS01D	Quad 2-Input NAND Gate OC	3-5	SDAD001B
SN74ALS01FN	Quad 2-Input NAND Gate OC	3-5	SDAD001B
SN74ALS01N	Quad 2-Input NAND Gate OC	3-5	SDAD001B
SN74ALS02D	Quad 2-Input NOR Gate	3-6	SDAD001B
SN74ALS02FN	Quad 2-Input NOR Gate	3-6	SDAD001B
SN74ALS02N	Quad 2-Input NOR Gate	3-6	SDAD001B
SN74ALS03BD	Quad 2-Input NAND Gate OC	3-5	SDAD001B
SN74ALS03BFN	Quad 2-Input NAND Gate OC	3-5	SDAD001B
SN74ALS03BN	Quad 2-Input NAND Gate OC	3-5	SDAD001B
SN74ALS04BD	Hex Inverter	3-9	SDAD001B
SN74ALS04BFN	Hex Inverter	3-9	SDAD001B
SN74ALS04BN	Hex Inverter	3-9	SDAD001B
SN74ALS05AD	Hex Inverter OC	3-9	SDAD001B
SN74ALS05AFN	Hex Inverter OC	3-9	SDAD001B
SN74ALS05AN	Hex Inverter OC	3-9	SDAD001B
SN74ALS08D	Quad 2-Input AND Gate	3-5	SDAD001B
SN74ALS08FN	Quad 2-Input AND Gate	3-5	SDAD001B
SN74ALS08N	Quad 2-Input AND Gate	3-5	SDAD001B
SN74ALS09D	Quad 2-Input AND Gate OC	3-5	SDAD001B
SN74ALS09FN	Quad 2-Input AND Gate OC	3-5	SDAD001B
SN74ALS09N	Quad 2-Input AND Gate OC	3-5	SDAD001B
SN74ALS10AD	Triple 3-Input NAND Gate	3-4	SDAD001B
SN74ALS10AFN	Triple 3-Input NAND Gate	3-4	SDAD001B
SN74ALS10AN	Triple 3-Input NAND Gate	3-4	SDAD001B
SN74ALS11AD	Triple 3-Input AND Gate	3-5	SDAD001B
SN74ALS11AFN	Triple 3-Input AND Gate	3-5	SDAD001B
SN74ALS11AN	Triple 3-Input AND Gate	3-5	SDAD001B
SN74ALS12AD	Triple 3-Input NAND Gate OC	3-5	SDAD001B
SN74ALS12AFN	Triple 3-Input NAND Gate OC	3-5	SDAD001B
SN74ALS12AN	Triple 3-Input NAND Gate OC	3-5	SDAD001B
SN74ALS15AD	Triple 3-Input AND Gate OC	3-5	SDAD001B
SN74ALS15AFN	Triple 3-Input AND Gate OC	3-5	SDAD001B
SN74ALS15AN	Triple 3-Input AND Gate OC	3-5	SDAD001B
SN74ALS20AD	Dual 4-Input NAND Gate	3-4	SDAD001B
SN74ALS20AFN	Dual 4-Input NAND Gate	3-4	SDAD001B
SN74ALS20AN	Dual 4-Input NAND Gate	3-4	SDAD001B
SN74ALS21AD	Dual 4-Input AND Gate	3-5	SDAD001B
SN74ALS21AFN	Dual 4-Input AND Gate	3-5	SDAD001B
SN74ALS21AN	Dual 4-Input AND Gate	3-5	SDAD001B
SN74ALS22BD	Dual 4-Input NAND Gate OC	3-5	SDAD001B
SN74ALS22BFN	Dual 4-Input NAND Gate OC	3-5	SDAD001B
SN74ALS22BN	Dual 4-Input NAND Gate OC	3-5	SDAD001B
SN74ALS27D	Triple 3-Input NOR Gate	3-6	SDAD001B
SN74ALS27FN	Triple 3-Input NOR Gate	3-6	SDAD001B
SN74ALS27N	Triple 3-Input NOR Gate	3-6	SDAD001B
SN74ALS28AD	Quad 2-Input NOR Buffer	3-6	SDAD001B
SN74ALS28AFN	Quad 2-Input NOR Buffer	3-6	SDAD001B
SN74ALS28AN	Quad 2-Input NOR Buffer	3-6	SDAD001B
SN74ALS30AD	8-Input NAND Gate	3-4	SDAD001B
SN74ALS30AFN	8-Input NAND Gate	3-4	SDAD001B
SN74ALS30AN	8-Input NAND Gate	3-4	SDAD001B
SN74ALS32D	Quad 2-Input OR Gate	3-6	SDAD001B
SN74ALS32FN	Quad 2-Input OR Gate	3-6	SDAD001B
SN74ALS32N	Quad 2-Input OR Gate	3-6	SDAD001B
SN74ALS33AD	Quad 2-Input NOR Buffer OC	3-6	SDAD001B
SN74ALS33AFN	Quad 2-Input NOR Buffer OC	3-6	SDAD001B
SN74ALS33AN	Quad 2-Input NOR Buffer OC	3-6	SDAD001B
SN74ALS34D	Hex Non-Inverter	3-9	SDAD001B
SN74ALS34FN	Hex Non-Inverter	3-9	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74ALS34N	Hex Non-Inverter	3-9	SDAD001B
SN74ALS35AD	Hex Non-Inverter OC	3-10	SDAD001B
SN74ALS35AFN	Hex Non-Inverter OC	3-10	SDAD001B
SN74ALS35AN	Hex Non-Inverter OC	3-10	SDAD001B
SN74ALS37AD	Quad 2-Input NAND Buffer	3-4	SDAD001B
SN74ALS37AFN	Quad 2-Input NAND Buffer	3-4	SDAD001B
SN74ALS37AN	Quad 2-Input NAND Buffer	3-4	SDAD001B
SN74ALS38AD	Quad 2-Input NAND Buffer OC	3-4	SDAD001B
SN74ALS38AFN	Quad 2-Input NAND Buffer OC	3-4	SDAD001B
SN74ALS38AN	Quad 2-Input NAND Buffer OC	3-4	SDAD001B
SN74ALS40AD	Dual 4-Input NAND Buffer	3-4	SDAD001B
SN74ALS40AFN	Dual 4-Input NAND Buffer	3-4	SDAD001B
SN74ALS40AN	Dual 4-Input NAND Buffer	3-4	SDAD001B
SN74ALS74AD	Dual D-Type Flip-Flop	3-17	SDAD001B
SN74ALS74AFN	Dual D-Type Flip-Flop	3-17	SDAD001B
SN74ALS74AN	Dual D-Type Flip-Flop	3-17	SDAD001B
SN74ALS86D	Quad 2-Input Exclusive OR Gate	3-7	SDAD001B
SN74ALS86FN	Quad 2-Input Exclusive OR Gate	3-7	SDAD001B
SN74ALS86N	Quad 2-Input Exclusive OR Gate	3-7	SDAD001B
SN74ALS109AD	Dual J-K Flip-Flop	3-17	SDAD001B
SN74ALS109AFN	Dual J-K Flip-Flop	3-17	SDAD001B
SN74ALS109AN	Dual J-K Flip-Flop	3-17	SDAD001B
SN74ALS112AD	Dual J-K Flip-Flop	3-17	SDAD001B
SN74ALS112AFN	Dual J-K Flip-Flop	3-17	SDAD001B
SN74ALS112AN	Dual J-K Flip-Flop	3-17	SDAD001B
SN74ALS113AD	Dual J-K Flip-Flop	3-17	SDAD001B
SN74ALS113AFN	Dual J-K Flip-Flop	3-17	SDAD001B
SN74ALS113AN	Dual J-K Flip-Flop	3-17	SDAD001B
SN74ALS114AD	Dual J-K Flip-Flop	3-17	SDAD001B
SN74ALS114AFN	Dual J-K Flip-Flop	3-17	SDAD001B
SN74ALS114AN	Dual J-K Flip-Flop	3-17	SDAD001B
SN74ALS131D	3-8 Line Decoder/Demultiplexer W/Latch	3-30	SDAD001B
SN74ALS131FN	3-8 Line Decoder/Demultiplexer W/Latch	3-30	SDAD001B
SN74ALS131N	3-8 Line Decoder/Demultiplexer W/Latch	3-30	SDAD001B
SN74ALS133D	13-Input NAND Gate	3-4	SDAD001B
SN74ALS133FN	13-Input NAND Gate	3-4	SDAD001B
SN74ALS133N	13-Input NAND Gate	3-4	SDAD001B
SN74ALS136D	Quad 2-Input Exclusive OR Gate	3-7	SDAD001B
SN74ALS136FN	Quad 2-Input Exclusive OR Gate	3-7	SDAD001B
SN74ALS136N	Quad 2-Input Exclusive OR Gate	3-7	SDAD001B
SN74ALS137D	3-8 Line Decoder/Demultiplexer	3-30	SDAD001B
SN74ALS137FN	3-8 Line Decoder/Demultiplexer	3-30	SDAD001B
SN74ALS137N	3-8 Line Decoder/Demultiplexer	3-30	SDAD001B
SN74ALS138D	3-8 Line Decoder/Demultiplexer	3-30	SDAD001B
SN74ALS138FN	3-8 Line Decoder/Demultiplexer	3-30	SDAD001B
SN74ALS138N	3-8 Line Decoder/Demultiplexer	3-30	SDAD001B
SN74ALS139D	Dual 2-4 Decoder/Demultiplexer	3-30	SDAD001B
SN74ALS139FN	Dual 2-4 Decoder/Demultiplexer	3-30	SDAD001B
SN74ALS139N	Dual 2-4 Decoder/Demultiplexer	3-30	SDAD001B
SN74ALS151D	8-1 Data Selector/Multiplexer	3-29	SDAD001B
SN74ALS151FN	8-1 Data Selector/Multiplexer	3-29	SDAD001B
SN74ALS151N	8-1 Data Selector/Multiplexer	3-29	SDAD001B
SN74ALS153D	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74ALS153FN	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74ALS153N	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74ALS154NT	4-16 Line Decoder/Demultiplexer	3-30	SDAD001B
SN74ALS156N	Dual 2-4 Line Decoder/Demultiplexer	3-30	SDAD001B
SN74ALS157D	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74ALS157FN	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74ALS157N	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74ALS158D	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74ALS158FN	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74ALS158N	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74ALS160BD	4-Bit Synchronous Decade Counter	3-25	SDAD001B
SN74ALS160BFN	4-Bit Synchronous Decade Counter	3-25	SDAD001B
SN74ALS160BN	4-Bit Synchronous Decade Counter	3-25	SDAD001B
SN74ALS161BD	4-Bit Synchronous Binary Counter	3-25	SDAD001B
SN74ALS161BFN	4-Bit Synchronous Binary Counter	3-25	SDAD001B
SN74ALS161BN	4-Bit Synchronous Binary Counter	3-25	SDAD001B
SN74ALS162BD	4-Bit Synchronous Decade Counter	3-25	SDAD001B
SN74ALS162BFN	4-Bit Synchronous Decade Counter	3-25	SDAD001B
SN74ALS162BN	4-Bit Synchronous Decade Counter	3-25	SDAD001B
SN74ALS163BD	4-Bit Synchronous Binary Counter	3-25	SDAD001B
SN74ALS163BFN	4-Bit Synchronous Binary Counter	3-25	SDAD001B
SN74ALS163BN	4-Bit Synchronous Binary Counter	3-25	SDAD001B
SN74ALS168BD	4-Bit Up/Down Synchronous Decade Counter	3-25	SDAD001B
SN74ALS168BFN	4-Bit Up/Down Synchronous Decade Counter	3-25	SDAD001B
SN74ALS168BN	4-Bit Up/Down Synchronous Decade Counter	3-25	SDAD001B
SN74ALS169BD	4-Bit Up/Down Synchronous Binary Counter	3-26	SDAD001B
SN74ALS169BFN	4-Bit Up/Down Synchronous Binary Counter	3-26	SDAD001B
SN74ALS169BN	4-Bit Up/Down Synchronous Binary Counter	3-26	SDAD001B
SN74ALS174D	Hex D-Type Flip-Flop	3-20	SDAD001B
SN74ALS174FN	Hex D-Type Flip-Flop	3-20	SDAD001B
SN74ALS174N	Hex D-Type Flip-Flop	3-20	SDAD001B
SN74ALS175D	Quad D-Type Flip-Flop	3-20	SDAD001B
SN74ALS175FN	Quad D-Type Flip-Flop	3-20	SDAD001B
SN74ALS175N	Quad D-Type Flip-Flop	3-20	SDAD001B
SN74ALS190D	Synchronous Up/Down Decade Counter	3-25	SDAD001B
SN74ALS190FN	Synchronous Up/Down Decade Counter	3-25	SDAD001B
SN74ALS190N	Synchronous Up/Down Decade Counter	3-25	SDAD001B
SN74ALS191D	Synchronous Up/Down Binary Counter	3-26	SDAD001B
SN74ALS191FN	Synchronous Up/Down Binary Counter	3-26	SDAD001B
SN74ALS191N	Synchronous Up/Down Binary Counter	3-26	SDAD001B
SN74ALS192D	Synchronous Up/Down Decade Counter	3-25	SDAD001B
SN74ALS192FN	Synchronous Up/Down Decade Counter	3-25	SDAD001B
SN74ALS192N	Synchronous Up/Down Decade Counter	3-25	SDAD001B
SN74ALS193D	Synchronous Up/Down Binary Counter	3-26	SDAD001B
SN74ALS193FN	Synchronous Up/Down Binary Counter	3-26	SDAD001B
SN74ALS193N	Synchronous Up/Down Binary Counter	3-26	SDAD001B
SN74ALS229ADW	FIFO Memory 16 × 5	10-9	SDVD001
SN74ALS229AFN	FIFO Memory 16 × 5	10-9	SDVD001
SN74ALS229AN	FIFO Memory 16 × 5	10-9	SDVD001
SN74ALS231DW	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS231FN	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS231N	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS232ADW	FIFO Memory 16 × 4	10-9	SDVD001
SN74ALS232AFN	FIFO Memory 16 × 4	10-9	SDVD001
SN74ALS232AN	FIFO Memory 16 × 4	10-9	SDVD001
SN74ALS233ADW	FIFO Memory 16 × 5	10-9	SDVD001
SN74ALS233AFN	FIFO Memory 16 × 5	10-9	SDVD001
SN74ALS233AN	FIFO Memory 16 × 5	10-9	SDVD001
SN74ALS234N	FIFO Memory 64 × 4	10-9	SDAS106
SN74ALS235N	FIFO Memory 64 × 5	10-9	SDAS108
SN74ALS236N	FIFO Memory 64 × 4	10-9	SDAS107
SN74ALS240ADW	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS240AFN	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS240AN	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS240A-1DW	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS240A-1FN	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS240A-1N	Octal Buffer/Line Driver	3-12	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74ALS241ADW	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS241AFN	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS241AN	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS241A-1DW	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS241A-1FN	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS241A-1N	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS242BD	Quad Bus Transceiver	3-13	SDAD001B
SN74ALS242BFN	Quad Bus Transceiver	3-13	SDAD001B
SN74ALS242BN	Quad Bus Transceiver	3-13	SDAD001B
SN74ALS242B-1D	Quad Bus Transceiver	3-13	SDAD001B
SN74ALS242B-1FN	Quad Bus Transceiver	3-13	SDAD001B
SN74ALS242B-1N	Quad Bus Transceiver	3-13	SDAD001B
SN74ALS243AD	Quad Bus Transceiver	3-13	SDAD001B
SN74ALS243AFN	Quad Bus Transceiver	3-13	SDAD001B
SN74ALS243AN	Quad Bus Transceiver	3-13	SDAD001B
SN74ALS243A-1D	Quad Bus Transceiver	3-13	SDAD001B
SN74ALS243A-1FN	Quad Bus Transceiver	3-13	SDAD001B
SN74ALS243A-1N	Quad Bus Transceiver	3-13	SDAD001B
SN74ALS244ADW	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS244AFN	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS244AN	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS244A-1DW	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS244A-1FN	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS244A-1N	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS245ADW	Octal Bus Transceiver	3-13	SDAD001B
SN74ALS245AFN	Octal Bus Transceiver	3-13	SDAD001B
SN74ALS245AN	Octal Bus Transceiver	3-13	SDAD001B
SN74ALS245A-1DW	Octal Bus Transceiver	3-13	SDAD001B
SN74ALS245A-1FN	Octal Bus Transceiver	3-13	SDAD001B
SN74ALS245A-1N	Octal Bus Transceiver	3-13	SDAD001B
SN74ALS251D	8-1 Data Selector/Multiplexer	3-29	SDAD001B
SN74ALS251FN	8-1 Data Selector/Multiplexer	3-29	SDAD001B
SN74ALS251N	8-1 Data Selector/Multiplexer	3-29	SDAD001B
SN74ALS253D	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74ALS253FN	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74ALS253N	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74ALS257D	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74ALS257FN	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74ALS257N	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74ALS258D	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74ALS258FN	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74ALS258N	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74ALS259D	8-Bit Addressable Latch	3-21	SDAD001B
SN74ALS259FN	8-Bit Addressable Latch	3-21	SDAD001B
SN74ALS259N	8-Bit Addressable Latch	3-21	SDAD001B
SN74ALS273DW	Octal D-Type Flip-Flop	3-18	SDAD001B
SN74ALS273FN	Octal D-Type Flip-Flop	3-18	SDAD001B
SN74ALS273N	Octal D-Type Flip-Flop	3-18	SDAD001B
SN74ALS280D	9-Bit Parity Generator/Checker	3-33	SDVD001
SN74ALS280FN	9-Bit Parity Generator/Checker	3-33	SDVD001
SN74ALS280N	9-Bit Parity Generator/Checker	3-33	SDVD001
SN74ALS299DW	8-Bit Shift Register	3-22	SDAD001B
SN74ALS299FN	8-Bit Shift Register	3-22	SDAD001B
SN74ALS299N	8-Bit Shift Register	3-22	SDAD001B
SN74ALS323DW	8-Bit Shift/Storage Register	3-22	SDAD001B
SN74ALS323FN	8-Bit Shift/Storage Register	3-22	SDAD001B
SN74ALS323N	8-Bit Shift/Storage Register	3-22	SDAD001B
SN74ALS352D	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74ALS352FN	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74ALS352N	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74ALS353D	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74ALS353FN	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74ALS353N	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74ALS373DW	Octal D-Type Latch	3-21	SDAD001B
SN74ALS373FN	Octal D-Type Latch	3-21	SDAD001B
SN74ALS373N	Octal D-Type Latch	3-21	SDAD001B
SN74ALS374DW	Octal D-Type Flip-Flop	3-18	SDAD001B
SN74ALS374FN	Octal D-Type Flip-Flop	3-18	SDAD001B
SN74ALS374N	Octal D-Type Flip-Flop	3-18	SDAD001B
SN74ALS465ADW	Octal Buffer 3-State Output	3-12	SDAD001B
SN74ALS465AFN	Octal Buffer 3-State Output	3-12	SDAD001B
SN74ALS465AN	Octal Buffer 3-State Output	3-12	SDAD001B
SN74ALS466ADW	Octal Buffer 3-State Output	3-12	SDAD001B
SN74ALS466AFN	Octal Buffer 3-State Output	3-12	SDAD001B
SN74ALS466AN	Octal Buffer 3-State Output	3-12	SDAD001B
SN74ALS467ADW	Octal Buffer 3-State Output	3-12	SDAD001B
SN74ALS467AFN	Octal Buffer 3-State Output	3-12	SDAD001B
SN74ALS467AN	Octal Buffer 3-State Output	3-12	SDAD001B
SN74ALS468ADW	Octal Buffer 3-State Output	3-12	SDAD001B
SN74ALS468AFN	Octal Buffer 3-State Output	3-12	SDAD001B
SN74ALS468AN	Octal Buffer 3-State Output	3-12	SDAD001B
SN74ALS518DW	8-Bit Identity Comparator	3-32	SDAD001B
SN74ALS518FN	8-Bit Identity Comparator	3-32	SDAD001B
SN74ALS518N	8-Bit Identity Comparator	3-32	SDAD001B
SN74ALS519DW	8-Bit Identity Comparator	3-32	SDAD001B
SN74ALS519FN	8-Bit Identity Comparator	3-32	SDAD001B
SN74ALS519N	8-Bit Identity Comparator	3-32	SDAD001B
SN74ALS520DW	8-Bit Identity Comparator	3-32	SDAD001B
SN74ALS520FN	8-Bit Identity Comparator	3-32	SDAD001B
SN74ALS520N	8-Bit Identity Comparator	3-32	SDAD001B
SN74ALS521DW	8-Bit Identity Comparator	3-32	SDAD001B
SN74ALS521FN	8-Bit Identity Comparator	3-32	SDAD001B
SN74ALS521N	8-Bit Identity Comparator	3-32	SDAD001B
SN74ALS522DW	8-Bit Identity Comparator	3-32	SDAD001B
SN74ALS522FN	8-Bit Identity Comparator	3-32	SDAD001B
SN74ALS522N	8-Bit Identity Comparator	3-32	SDAD001B
SN74ALS526DW	Fuse Programmable Comparator	3-33	SDAD001B
SN74ALS526FN	Fuse Programmable Comparator	3-33	SDAD001B
SN74ALS526N	Fuse Programmable Comparator	3-33	SDAD001B
SN74ALS527DW	Fuse Programmable Comparator	3-33	SDAD001B
SN74ALS527FN	Fuse Programmable Comparator	3-33	SDAD001B
SN74ALS527N	Fuse Programmable Comparator	3-33	SDAD001B
SN74ALS528D	Fuse Programmable Comparator	3-33	SDAD001B
SN74ALS528FN	Fuse Programmable Comparator	3-33	SDAD001B
SN74ALS528N	Fuse Programmable Comparator	3-33	SDAD001B
SN74ALS533DW	Octal D-Type Latch	3-21	SDAD001B
SN74ALS533FN	Octal D-Type Latch	3-21	SDAD001B
SN74ALS533N	Octal D-Type Latch	3-21	SDAD001B
SN74ALS534DW	Octal D-Type Flip-Flop	3-19	SDAD001B
SN74ALS534FN	Octal D-Type Flip-Flop	3-19	SDAD001B
SN74ALS534N	Octal D-Type Flip-Flop	3-19	SDAD001B
SN74ALS540DW	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS540FN	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS540N	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS540-1DW	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS540-1FN	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS540-1N	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS541DW	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS541FN	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS541N	Octal Buffer/Line Driver	3-12	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74ALS541-1DW	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS541-1FN	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS541-1N	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS560ADW	Synchronous 4-Bit Counter	3-25	SDAD001B
SN74ALS560AFN	Synchronous 4-Bit Counter	3-25	SDAD001B
SN74ALS560AN	Synchronous 4-Bit Counter	3-25	SDAD001B
SN74ALS561ADW	Synchronous 4-Bit Counter	3-25	SDAD001B
SN74ALS561AFN	Synchronous 4-Bit Counter	3-25	SDAD001B
SN74ALS561AN	Synchronous 4-Bit Counter	3-25	SDAD001B
SN74ALS563ADW	Octal D-Type Transparent Latch	3-21	SDAD001B
SN74ALS563AFN	Octal D-Type Transparent Latch	3-21	SDAD001B
SN74ALS563AN	Octal D-Type Transparent Latch	3-21	SDAD001B
SN74ALS564ADW	Octal Edge-Triggered Flip-Flop	3-19	SDAD001B
SN74ALS564AFN	Octal Edge-Triggered Flip-Flop	3-19	SDAD001B
SN74ALS564AN	Octal Edge-Triggered Flip-Flop	3-19	SDAD001B
SN74ALS568ADW	4-Bit Up/Down Decade Counter	3-25	SDAD001B
SN74ALS568AFN	4-Bit Up/Down Decade Counter	3-25	SDAD001B
SN74ALS568AN	4-Bit Up/Down Decade Counter	3-25	SDAD001B
SN74ALS569ADW	4-Bit Up/Down Binary Counter	3-26	SDAD001B
SN74ALS569AFN	4-Bit Up/Down Binary Counter	3-26	SDAD001B
SN74ALS569AN	4-Bit Up/Down Binary Counter	3-26	SDAD001B
SN74ALS573BDW	Octal D-Type Latch	3-21	SDAD001B
SN74ALS573BFN	Octal D-Type Latch	3-21	SDAD001B
SN74ALS573BN	Octal D-Type Latch	3-21	SDAD001B
SN74ALS574ADW	Octal D-Type Flip-Flop	3-18	SDAD001B
SN74ALS574AFN	Octal D-Type Flip-Flop	3-18	SDAD001B
SN74ALS574AN	Octal D-Type Flip-Flop	3-18	SDAD001B
SN74ALS575ADW	Octal D-Type Flip-Flop	3-18	SDAD001B
SN74ALS575AFN	Octal D-Type Flip-Flop	3-18	SDAD001B
SN74ALS575ANT	Octal D-Type Flip-Flop	3-18	SDAD001B
SN74ALS576ADW	Octal D-Type Flip-Flop	3-19	SDAD001B
SN74ALS576AFN	Octal D-Type Flip-Flop	3-19	SDAD001B
SN74ALS576AN	Octal D-Type Flip-Flop	3-19	SDAD001B
SN74ALS577ADW	Octal D-Type Flip-Flop	3-19	SDAD001B
SN74ALS577ANT	Octal D-Type Flip-Flop	3-19	SDAD001B
SN74ALS580ADW	Octal D-Type Latch	3-21	SDAD001B
SN74ALS580AFN	Octal D-Type Latch	3-21	SDAD001B
SN74ALS580AN	Octal D-Type Latch	3-21	SDAD001B
SN74ALS614DW	Octal Bus Transceiver/Register	3-11	SDAD001B
SN74ALS614NT	Octal Bus Transceiver/Register	3-11	SDAD001B
SN74ALS614-1NT	Octal Bus Transceiver/Register	3-11	SDAD001B
SN74ALS615DW	Octal Bus Transceiver/Register	3-11	SDAD001B
SN74ALS615NT	Octal Bus Transceiver/Register	3-11	SDAD001B
SN74ALS615-1NT	Octal Bus Transceiver/Register	3-11	SDAD001B
SN74ALS616JD	Error Detection and Correction Circuit	3-33	SDAD001B
SN74ALS620ADW	Octal Bus Transceiver	3-13	SDAD001B
SN74ALS620AFN	Octal Bus Transceiver	3-13	SDAD001B
SN74ALS620AN	Octal Bus Transceiver	3-13	SDAD001B
SN74ALS620A-1DW	Octal Bus Transceiver	3-13	SDAD001B
SN74ALS620A-1FN	Octal Bus Transceiver	3-13	SDAD001B
SN74ALS620A-1N	Octal Bus Transceiver	3-13	SDAD001B
SN74ALS621ADW	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS621AFN	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS621AN	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS621A-1DW	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS621A-1FN	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS621A-1N	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS622ADW	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS622AFN	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS622AN	Octal Bus Transceiver	3-11	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74ALS622A-1DW	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS622A-1FN	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS622A-1N	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS623ADW	Octal Bus Transceiver	3-15	SDAD001B
SN74ALS623AFN	Octal Bus Transceiver	3-15	SDAD001B
SN74ALS623AN	Octal Bus Transceiver	3-15	SDAD001B
SN74ALS623A-1DW	Octal Bus Transceiver	3-15	SDAD001B
SN74ALS623A-1FN	Octal Bus Transceiver	3-15	SDAD001B
SN74ALS623A-1N	Octal Bus Transceiver	3-15	SDAD001B
SN74ALS632AFN	Error Detection and Correction Circuit	3-33	SDAD001B
SN74ALS632AJD	Error Detection and Correction Circuit	3-33	SDAD001B
SN74ALS632BJD	Error Detection and Correction Circuit	3-33	SDAD001B
SN74ALS634AJD	Error Detection and Correction Circuit	3-33	SDAD001B
SN74ALS638ADW	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS638AFN	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS638AN	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS638A-1DW	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS638A-1FN	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS638A-1N	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS639ADW	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS639AFN	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS639AN	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS639A-1DW	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS639A-1FN	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS639A-1N	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS640ADW	Octal Bus Transceiver	3-13	SDAD001B
SN74ALS640AFN	Octal Bus Transceiver	3-13	SDAD001B
SN74ALS640AN	Octal Bus Transceiver	3-13	SDAD001B
SN74ALS640A-1DW	Octal Bus Transceiver	3-13	SDAD001B
SN74ALS640A-1FN	Octal Bus Transceiver	3-13	SDAD001B
SN74ALS640A-1N	Octal Bus Transceiver	3-13	SDAD001B
SN74ALS641ADW	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS641AFN	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS641AN	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS641A-1DW	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS641A-1FN	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS641A-1N	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS642ADW	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS642AFN	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS642AN	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS642A-1DW	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS642A-1FN	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS642A-1N	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS643ADW	Octal Bus Transceiver	3-14	SDAD001B
SN74ALS643AFN	Octal Bus Transceiver	3-14	SDAD001B
SN74ALS643AN	Octal Bus Transceiver	3-14	SDAD001B
SN74ALS643A-1DW	Octal Bus Transceiver	3-14	SDAD001B
SN74ALS643A-1FN	Octal Bus Transceiver	3-14	SDAD001B
SN74ALS643A-1N	Octal Bus Transceiver	3-14	SDAD001B
SN74ALS644ADW	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS644AFN	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS644AN	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS644A-1DW	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS644A-1FN	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS644A-1N	Octal Bus Transceiver	3-11	SDAD001B
SN74ALS645ADW	Octal Bus Transceiver	3-15	SDAD001B
SN74ALS645AFN	Octal Bus Transceiver	3-15	SDAD001B
SN74ALS645AN	Octal Bus Transceiver	3-15	SDAD001B
SN74ALS645A-1DW	Octal Bus Transceiver	3-15	SDAD001B
SN74ALS645A-1FN	Octal Bus Transceiver	3-15	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74ALS645A-1N	Octal Bus Transceiver	3-15	SDAD001B
SN74ALS646DW	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS646FN	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS646NT	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS646-1DW	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS646-1FN	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS646-1NT	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS647DW	Octal Bus Transceiver and Register	3-11	SDAD001B
SN74ALS647FN	Octal Bus Transceiver and Register	3-11	SDAD001B
SN74ALS647NT	Octal Bus Transceiver and Register	3-11	SDAD001B
SN74ALS647-1DW	Octal Bus Transceiver and Register	3-11	SDAD001B
SN74ALS647-1FN	Octal Bus Transceiver and Register	3-11	SDAD001B
SN74ALS647-1NT	Octal Bus Transceiver and Register	3-11	SDAD001B
SN74ALS648DW	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS648FN	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS648NT	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS648-1DW	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS648-1FN	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS648-1NT	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS649DW	Octal Bus Transceiver and Register	3-11	SDAD001B
SN74ALS649NT	Octal Bus Transceiver and Register	3-11	SDAD001B
SN74ALS649-1DW	Octal Bus Transceiver and Register	3-11	SDAD001B
SN74ALS649-1NT	Octal Bus Transceiver and Register	3-11	SDAD001B
SN74ALS651DW	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS651FN	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS651NT	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS651-1DW	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS651-1FN	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS651-1NT	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS652DW	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS652FN	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS652NT	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS652-1DW	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS652-1FN	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS652-1NT	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74ALS653DW	Octal Bus Transceiver and Register	3-11	SDAD001B
SN74ALS653FN	Octal Bus Transceiver and Register	3-11	SDAD001B
SN74ALS653NT	Octal Bus Transceiver and Register	3-11	SDAD001B
SN74ALS653-1DW	Octal Bus Transceiver and Register	3-11	SDAD001B
SN74ALS653-1FN	Octal Bus Transceiver and Register	3-11	SDAD001B
SN74ALS653-1NT	Octal Bus Transceiver and Register	3-11	SDAD001B
SN74ALS654DW	Octal Bus Transceiver and Register	3-11	SDAD001B
SN74ALS654NT	Octal Bus Transceiver and Register	3-11	SDAD001B
SN74ALS654-1DW	Octal Bus Transceiver and Register	3-11	SDAD001B
SN74ALS654-1NT	Octal Bus Transceiver and Register	3-11	SDAD001B
SN74ALS666DW	Octal D-Type Read-Back Latch	3-20	SDAD001B
SN74ALS666NT	Octal D-Type Read-Back Latch	3-20	SDAD001B
SN74ALS667DW	Octal D-Type Read-Back Latch	3-20	SDAD001B
SN74ALS667NT	Octal D-Type Read-Back Latch	3-20	SDAD001B
SN74ALS677ADW	Address Comparator	3-33	SDAD001B
SN74ALS677AFN	Address Comparator	3-33	SDAD001B
SN74ALS677ANT	Address Comparator	3-33	SDAD001B
SN74ALS678DW	Address Comparator	3-33	SDAD001B
SN74ALS678FN	Address Comparator	3-33	SDAD001B
SN74ALS678NT	Address Comparator	3-33	SDAD001B
SN74ALS679DW	Address Comparator	3-33	SDAD001B
SN74ALS679FN	Address Comparator	3-33	SDAD001B
SN74ALS679N	Address Comparator	3-33	SDAD001B
SN74ALS680DW	Address Comparator	3-33	SDAD001B
SN74ALS680FN	Address Comparator	3-33	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74ALS680N	Address Comparator	3-33	SDAD001B
SN74ALS688DW	8-Bit Identity Comparator	3-32	SDAD001B
SN74ALS688FN	8-Bit Identity Comparator	3-32	SDAD001B
SN74ALS688N	8-Bit Identity Comparator	3-32	SDAD001B
SN74ALS689DW	8-Bit Identity Comparator	3-32	SDAD001B
SN74ALS689FN	8-Bit Identity Comparator	3-32	SDAD001B
SN74ALS689N	8-Bit Identity Comparator	3-32	SDAD001B
SN74ALS746DW	Octal Buffer/Line Driver	3-15	SDAD001B
SN74ALS746FN	Octal Buffer/Line Driver	3-15	SDAD001B
SN74ALS746N	Octal Buffer/Line Driver	3-15	SDAD001B
SN74ALS746-1DW	Octal Buffer/Line Driver	3-15	SDAD001B
SN74ALS746-1FN	Octal Buffer/Line Driver	3-15	SDAD001B
SN74ALS746-1N	Octal Buffer/Line Driver	3-15	SDAD001B
SN74ALS747DW	Octal Buffer/Line Driver	3-15	SDAD001B
SN74ALS747FN	Octal Buffer/Line Driver	3-15	SDAD001B
SN74ALS747N	Octal Buffer/Line Driver	3-15	SDAD001B
SN74ALS747-1DW	Octal Buffer/Line Driver	3-15	SDAD001B
SN74ALS747-1FN	Octal Buffer/Line Driver	3-15	SDAD001B
SN74ALS747-1N	Octal Buffer/Line Driver	3-15	SDAD001B
SN74ALS756DW	Octal Buffer/Line Driver	3-10	SDAD001B
SN74ALS756FN	Octal Buffer/Line Driver	3-10	SDAD001B
SN74ALS756N	Octal Buffer/Line Driver	3-10	SDAD001B
SN74ALS756-1DW	Octal Buffer/Line Driver	3-10	SDAD001B
SN74ALS756-1FN	Octal Buffer/Line Driver	3-10	SDAD001B
SN74ALS756-1N	Octal Buffer/Line Driver	3-10	SDAD001B
SN74ALS758D	Quad Bus Transceiver	3-11	SDAD001B
SN74ALS758FN	Quad Bus Transceiver	3-11	SDAD001B
SN74ALS758N	Quad Bus Transceiver	3-11	SDAD001B
SN74ALS763DW	Octal Buffer/Line Driver	3-10	SDAD001B
SN74ALS763FN	Octal Buffer/Line Driver	3-10	SDAD001B
SN74ALS763N	Octal Buffer/Line Driver	3-10	SDAD001B
SN74ALS804ADW	Hex 2-Input NAND Driver	3-4	SDAD001B
SN74ALS804AFN	Hex 2-Input NAND Driver	3-4	SDAD001B
SN74ALS804AN	Hex 2-Input NAND Driver	3-4	SDAD001B
SN74ALS805ADW	Hex 2-Input NOR Driver	3-6	SDAD001B
SN74ALS805AFN	Hex 2-Input NOR Driver	3-6	SDAD001B
SN74ALS805AN	Hex 2-Input NOR Driver	3-6	SDAD001B
SN74ALS808ADW	Hex 2-Input AND Driver	3-10	SDAD001B
SN74ALS808AFN	Hex 2-Input AND Driver	3-10	SDAD001B
SN74ALS808AN	Hex 2-Input AND Driver	3-10	SDAD001B
SN74ALS810D	Quad Exclusive NOR Gate	3-7	SDAD001B
SN74ALS810FN	Quad Exclusive NOR Gate	3-7	SDAD001B
SN74ALS810N	Quad Exclusive NOR Gate	3-7	SDAD001B
SN74ALS811D	Quad Exclusive NOR Gate	3-7	SDAD001B
SN74ALS811FN	Quad Exclusive NOR Gate	3-7	SDAD001B
SN74ALS811N	Quad Exclusive NOR Gate	3-7	SDAD001B
SN74ALS812NT	Fuse Prog. Identity Comparator/Decoder	3-33	SDAS103
SN74ALS819NT	8-Bit Diagnostic/Pipeline Register	3-24	SDAS105
SN74ALS832ADW	Hex 2-Input OR Driver	3-6	SDAD001B
SN74ALS832AFN	Hex 2-Input OR Driver	3-6	SDAD001B
SN74ALS832AN	Hex 2-Input OR Driver	3-6	SDAD001B
SN74ALS841DW	10-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS841FN	10-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS841NT	10-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS841-1DW	10-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS842DW	10-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS842FN	10-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS842NT	10-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS842-1DW	10-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS843DW	9-Bit Bus Interface Latch	3-21	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74ALS843FN	9-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS843NT	9-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS843-1DW	9-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS844DW	9-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS844FN	9-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS844NT	9-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS844-1DW	9-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS844-1FN	9-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS844-1NT	9-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS845DW	8-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS845FN	8-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS845NT	8-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS845-1DW	8-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS845-1FN	8-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS845-1NT	8-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS846DW	8-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS846FN	8-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS846NT	8-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS846-1DW	8-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS846-1FN	8-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS846-1NT	8-Bit Bus Interface Latch	3-21	SDAD001B
SN74ALS857DW	Hex 2-to-1 Multiplexer	3-29	SDAD001B
SN74ALS857FN	Hex 2-to-1 Multiplexer	3-29	SDAD001B
SN74ALS857NT	Hex 2-to-1 Multiplexer	3-29	SDAD001B
SN74ALS867NT	8-Bit Synchronous Up/Down Counter	3-26	SDAD001B
SN74ALS869NT	8-Bit Synchronous Up/Down Counter	3-26	SDAD001B
SN74ALS873BDW	Dual 4-Bit D-Type Latch	3-21	SDAD001B
SN74ALS873BFN	Dual 4-Bit D-Type Latch	3-21	SDAD001B
SN74ALS873BNT	Dual 4-Bit D-Type Latch	3-21	SDAD001B
SN74ALS874BDW	Dual 4-Bit D-Type Flip-Flop	3-18	SDAD001B
SN74ALS874BFN	Dual 4-Bit D-Type Flip-Flop	3-18	SDAD001B
SN74ALS874BNT	Dual 4-Bit D-Type Flip-Flop	3-18	SDAD001B
SN74ALS876ADW	Dual 4-Bit D-Type Flip-Flop	3-19	SDAD001B
SN74ALS876AFN	Dual 4-Bit D-Type Flip-Flop	3-19	SDAD001B
SN74ALS876ANT	Dual 4-Bit D-Type Flip-Flop	3-19	SDAD001B
SN74ALS878ADW	Dual 4-Bit D-Type Flip-Flop	3-18	SDAD001B
SN74ALS878AFN	Dual 4-Bit D-Type Flip-Flop	3-18	SDAD001B
SN74ALS878ANT	Dual 4-Bit D-Type Flip-Flop	3-18	SDAD001B
SN74ALS879ADW	Dual 4-Bit D-Type Flip-Flop	3-19	SDAD001B
SN74ALS879ANT	Dual 4-Bit D-Type Flip-Flop	3-19	SDAD001B
SN74ALS880ADW	Dual 4-Bit D-Type Latch	3-21	SDAD001B
SN74ALS880ANT	Dual 4-Bit D-Type Latch	3-21	SDAD001B
SN74ALS990DW	8-Bit D-Type Read-Back Latch	3-20	SDAD001B
SN74ALS990N	8-Bit D-Type Read-Back Latch	3-20	SDAD001B
SN74ALS991DW	8-Bit D-Type Read-Back Latch	3-20	SDAD001B
SN74ALS991N	8-Bit D-Type Read-Back Latch	3-20	SDAD001B
SN74ALS992DW	9-Bit D-Type Read-Back Latch	3-20	SDAD001B
SN74ALS992NT	9-Bit D-Type Read-Back Latch	3-20	SDAD001B
SN74ALS993DW	9-Bit D-Type Read-Back Latch	3-20	SDAD001B
SN74ALS993NT	9-Bit D-Type Read-Back Latch	3-20	SDAD001B
SN74ALS994DW	10-Bit D-Type Read-Back Latch	3-20	SDAD001B
SN74ALS994NT	10-Bit D-Type Read-Back Latch	3-20	SDAD001B
SN74ALS995DW	10-Bit D-Type Read-Back Latch	3-20	SDAD001B
SN74ALS995NT	10-Bit D-Type Read-Back Latch	3-20	SDAD001B
SN74ALS996DW	8-Bit D-Type Read-Back Latch	3-20	SDAD001B
SN74ALS996NT	8-Bit D-Type Read-Back Latch	3-20	SDAD001B
SN74ALS996-1NT	8-Bit D-Type Read-Back Latch	3-20	SDAD001B
SN74ALS1000AD	Quad NAND Buffer/Driver	3-4	SDAD001B
SN74ALS1000AFN	Quad NAND Buffer/Driver	3-4	SDAD001B
SN74ALS1000AN	Quad NAND Buffer/Driver	3-4	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74ALS1002AD	Quad NOR Buffer	3-6	SDAD001B
SN74ALS1002AFN	Quad NOR Buffer	3-6	SDAD001B
SN74ALS1002AN	Quad NOR Buffer	3-6	SDAD001B
SN74ALS1003AD	Quad NOR Buffer OC	3-5	SDAD001B
SN74ALS1003AFN	Quad NOR Buffer OC	3-5	SDAD001B
SN74ALS1003AN	Quad NOR Buffer OC	3-5	SDAD001B
SN74ALS1004D	Hex Inverting Driver	3-9	SDAD001B
SN74ALS1004FN	Hex Inverting Driver	3-9	SDAD001B
SN74ALS1004N	Hex Inverting Driver	3-9	SDAD001B
SN74ALS1005D	Hex Inverting Buffer OC	3-9	SDAD001B
SN74ALS1005FN	Hex Inverting Buffer OC	3-9	SDAD001B
SN74ALS1005N	Hex Inverting Buffer OC	3-9	SDAD001B
SN74ALS1008AD	Quad AND Buffer	3-5	SDAD001B
SN74ALS1008AFN	Quad AND Buffer	3-5	SDAD001B
SN74ALS1008AN	Quad AND Buffer	3-5	SDAD001B
SN74ALS1010AD	Triple 3-Input NAND Buffer	3-4	SDAD001B
SN74ALS1010AFN	Triple 3-Input NAND Buffer	3-4	SDAD001B
SN74ALS1010AN	Triple 3-Input NAND Buffer	3-4	SDAD001B
SN74ALS1011AD	Triple 3-Input AND Buffer	3-5	SDAD001B
SN74ALS1011AFN	Triple 3-Input AND Buffer	3-5	SDAD001B
SN74ALS1011AN	Triple 3-Input AND Buffer	3-5	SDAD001B
SN74ALS1020AD	Dual 4-Input NAND Buffer	3-4	SDAD001B
SN74ALS1020AFN	Dual 4-Input NAND Buffer	3-4	SDAD001B
SN74ALS1020AN	Dual 4-Input NAND Buffer	3-4	SDAD001B
SN74ALS1032AD	Quad OR Buffer/Driver	3-6	SDAD001B
SN74ALS1032AFN	Quad OR Buffer/Driver	3-6	SDAD001B
SN74ALS1032AN	Quad OR Buffer/Driver	3-6	SDAD001B
SN74ALS1034D	Hex Driver	3-10	SDAD001B
SN74ALS1034FN	Hex Driver	3-10	SDAD001B
SN74ALS1034N	Hex Driver	3-10	SDAD001B
SN74ALS1035D	Hex Noninverting Buffer	3-10	SDAD001B
SN74ALS1035FN	Hex Noninverting Buffer	3-10	SDAD001B
SN74ALS1035N	Hex Noninverting Buffer	3-10	SDAD001B
SN74ALS1240DW	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS1240FN	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS1240N	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS1240-1DW	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS1240-1FN	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS1240-1N	Octal Buffer/Line Driver	3-12	SDAD001B
SN74ALS1242D	Quad Bus Transceiver	3-13	SDAD001B
SN74ALS1242FN	Quad Bus Transceiver	3-13	SDAD001B
SN74ALS1242N	Quad Bus Transceiver	3-13	SDAD001B
SN74ALS1244ADW	Octal Buffer/Driver	3-12	SDAD001B
SN74ALS1244AFN	Octal Buffer/Driver	3-12	SDAD001B
SN74ALS1244AN	Octal Buffer/Driver	3-12	SDAD001B
SN74ALS1244A-1DW	Octal Buffer/Driver	3-12	SDAD001B
SN74ALS1244A-1FN	Octal Buffer/Driver	3-12	SDAD001B
SN74ALS1244A-1N	Octal Buffer/Driver	3-12	SDAD001B
SN74ALS1245ADW	Octal Bus Transceiver	3-14	SDAD001B
SN74ALS1245AFN	Octal Bus Transceiver	3-14	SDAD001B
SN74ALS1245AN	Octal Bus Transceiver	3-14	SDAD001B
SN74ALS1245A-1DW	Octal Bus Transceiver	3-14	SDAD001B
SN74ALS1245A-1FN	Octal Bus Transceiver	3-14	SDAD001B
SN74ALS1245A-1N	Octal Bus Transceiver	3-14	SDAD001B
SN74ALS1640ADW	Octal Bus Transceiver	3-15	SDAD001B
SN74ALS1640AFN	Octal Bus Transceiver	3-15	SDAD001B
SN74ALS1640AN	Octal Bus Transceiver	3-15	SDAD001B
SN74ALS1640A-1DW	Octal Bus Transceiver	3-15	SDAD001B
SN74ALS1640A-1FN	Octal Bus Transceiver	3-15	SDAD001B
SN74ALS1640A-1N	Octal Bus Transceiver	3-15	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74ALS1645ADW	Octal Bus Transceiver	3-15	SDAD001B
SN74ALS1645AFN	Octal Bus Transceiver	3-15	SDAD001B
SN74ALS1645AN	Octal Bus Transceiver	3-15	SDAD001B
SN74ALS1645A-1DW	Octal Bus Transceiver	3-15	SDAD001B
SN74ALS1645A-1FN	Octal Bus Transceiver	3-15	SDAD001B
SN74ALS1645A-1N	Octal Bus Transceiver	3-15	SDAD001B
SN74ALS1804ADW	Hex 2-Input NAND Driver	3-4	SDAD001B
SN74ALS1804AFN	Hex 2-Input NAND Driver	3-4	SDAD001B
SN74ALS1804AN	Hex 2-Input NAND Driver	3-4	SDAD001B
SN74ALS1805ADW	Hex 2-Input NOR Driver	3-6	SDAD001B
SN74ALS1805AFN	Hex 2-Input NOR Driver	3-6	SDAD001B
SN74ALS1805AN	Hex 2-Input NOR Driver	3-6	SDAD001B
SN74ALS1808ADW	Hex 2-Input AND Driver	3-10	SDAD001B
SN74ALS1808AFN	Hex 2-Input AND Driver	3-10	SDAD001B
SN74ALS1808AN	Hex 2-Input AND Driver	3-10	SDAD001B
SN74ALS1832ADW	Hex 2-Input OR Driver	3-6	SDAD001B
SN74ALS1832AFN	Hex 2-Input OR Driver	3-6	SDAD001B
SN74ALS1832AN	Hex 2-Input OR Driver	3-6	SDAD001B
SN74ALS2240DW	Quad Line Driver	3-15	SDAD001B
SN74ALS2240FN	Quad Line Driver	3-15	SDAD001B
SN74ALS2240N	Quad Line Driver	3-15	SDAD001B
SN74ALS2242D	Quad Bus Transceiver/MOS Driver	3-15	SDAD001B
SN74ALS2242FN	Quad Bus Transceiver/MOS Driver	3-15	SDAD001B
SN74ALS2242N	Quad Bus Transceiver/MOS Driver	3-15	SDAD001B
SN74ALS2540DW	Octal Buffer and Line Driver	3-15	SDAD001B
SN74ALS2540FN	Octal Buffer and Line Driver	3-15	SDAD001B
SN74ALS2540N	Octal Buffer and Line Driver	3-15	SDAD001B
SN74ALS2541DW	Octal Buffer and Line Driver	3-15	SDAD001B
SN74ALS2541FN	Octal Buffer and Line Driver	3-15	SDAD001B
SN74ALS2541N	Octal Buffer and Line Driver	3-15	SDAD001B
SN74ALS2967JD	Dynamic Memory Controller	4-63	SDAS121A
SN74ALS2968JD	Dynamic Memory Controller	4-63	SDAS121A
SN74ALS6301JD	Dynamic Memory Controller	4-65	SDAS120A
SN74ALS6302JD	Dynamic Memory Controller	4-65	SDAS120A
SN74ALS8003AP	Dual 2-Input NAND Gate	3-4	SDAD001B
SN74ALS8161NT	8-Bit Synchronous Binary Counter	3-25	SDAS116
SN74ALS8163NT	8-Bit Synchronous Binary Counter	3-25	SDAS104
SN74ALS8169NT	8-Bit Synchronous Up/Down Binary Counter	3-26	SDAS117
SN74ALS29806DW	2-to-4 Bit Comparator/Decoder	3-32	SDAD001B
SN74ALS29806FN	2-to-4 Bit Comparator/Decoder	3-32	SDAD001B
SN74ALS29806NT	2-to-4 Bit Comparator/Decoder	3-32	SDAD001B
SN74ALS29809DW	2-to-4 Bit Comparator/Decoder	3-32	SDAD001B
SN74ALS29809FN	2-to-4 Bit Comparator/Decoder	3-32	SDAD001B
SN74ALS29809NT	2-to-4 Bit Comparator/Decoder	3-32	SDAD001B
SN74ALS29818FN	8-Bit Diagnostic/Pipeline Register	3-24	SDVD001
SN74ALS29818NT	8-Bit Diagnostic/Pipeline Register	3-24	SDVD001
SN74ALS29827DW	10-Bit Buffer/Driver	3-13	SDAD001B
SN74ALS29827NT	10-Bit Buffer/Driver	3-13	SDAD001B
SN74ALS29828DW	10-Bit Buffer/Driver	3-13	SDAD001B
SN74ALS29828FN	10-Bit Buffer/Driver	3-13	SDAD001B
SN74ALS29828NT	10-Bit Buffer/Driver	3-13	SDAD001B
SN74ALS29833NT	Bus Transceiver	3-14	SDAS119
SN74ALS29834NT	Bus Transceiver	3-14	SDAS119
SN74ALS29853NT	Bus Transceiver	3-14	SDAS118
SN74ALS29854NT	Bus Transceiver	3-14	SDAS118
SN74ALS29861NT	10-Bit Transceiver	3-14	SDAD001B
SN74ALS29862DW	10-Bit Transceiver	3-14	SDAD001B
SN74ALS29862NT	10-Bit Transceiver	3-14	SDAD001B
SN74ALS29863DW	9-Bit Transceiver	3-14	SDVD001
SN74ALS29863FN	9-Bit Transceiver	3-14	SDVD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74ALS29863NT	9-Bit Transceiver	3-14	SDVD001
SN74ALS29864DW	9-Bit Transceiver	3-14	SDVD001
SN74ALS29864FN	9-Bit Transceiver	3-14	SDVD001
SN74ALS29864NT	9-Bit Transceiver	3-14	SDVD001
SN74AS-EVM-8	Bit-Slice Evaluation Module	4-40	SDBU004
SN74AS00D	Quad 2-Input NAND Gate	3-4	SDAD001B
SN74AS00FN	Quad 2-Input NAND Gate	3-4	SDAD001B
SN74AS00N	Quad 2-Input NAND Gate	3-4	SDAD001B
SN74AS02D	Quad 2-Input NOR Gate	3-6	SDAD001B
SN74AS02FN	Quad 2-Input NOR Gate	3-6	SDAD001B
SN74AS02N	Quad 2-Input NOR Gate	3-6	SDAD001B
SN74AS04D	Hex Inverter	3-9	SDAD001B
SN74AS04FN	Hex Inverter	3-9	SDAD001B
SN74AS04N	Hex Inverter	3-9	SDAD001B
SN74AS08D	Quad 2-Input AND Gate	3-5	SDAD001B
SN74AS08FN	Quad 2-Input AND Gate	3-5	SDAD001B
SN74AS08N	Quad 2-Input AND Gate	3-5	SDAD001B
SN74AS10D	Triple 3-Input NAND Gate	3-4	SDAD001B
SN74AS10FN	Triple 3-Input NAND Gate	3-4	SDAD001B
SN74AS10N	Triple 3-Input NAND Gate	3-4	SDAD001B
SN74AS11D	Triple 3-Input AND Gate	3-5	SDAD001B
SN74AS11FN	Triple 3-Input AND Gate	3-5	SDAD001B
SN74AS11N	Triple 3-Input AND Gate	3-5	SDAD001B
SN74AS20D	Dual 4-Input NAND Gate	3-4	SDAD001B
SN74AS20FN	Dual 4-Input NAND Gate	3-4	SDAD001B
SN74AS20N	Dual 4-Input NAND Gate	3-4	SDAD001B
SN74AS21D	Dual 4-Input AND Gate	3-5	SDAD001B
SN74AS21FN	Dual 4-Input AND Gate	3-5	SDAD001B
SN74AS21N	Dual 4-Input AND Gate	3-5	SDAD001B
SN74AS27D	Triple 3-Input NOR Gate	3-6	SDAD001B
SN74AS27FN	Triple 3-Input NOR Gate	3-6	SDAD001B
SN74AS27N	Triple 3-Input NOR Gate	3-6	SDAD001B
SN74AS30D	8-Input NAND Gate	3-4	SDAD001B
SN74AS30FN	8-Input NAND Gate	3-4	SDAD001B
SN74AS30N	8-Input NAND Gate	3-4	SDAD001B
SN74AS32D	Quad 2-Input OR Gate	3-6	SDAD001B
SN74AS32FN	Quad 2-Input OR Gate	3-6	SDAD001B
SN74AS32N	Quad 2-Input OR Gate	3-6	SDAD001B
SN74AS34D	Hex Non-Inverter	3-9	SDAD001B
SN74AS34FN	Hex Non-Inverter	3-9	SDAD001B
SN74AS34N	Hex Non-Inverter	3-9	SDAD001B
SN74AS74D	Dual D-Type Flip-Flop	3-17	SDAD001B
SN74AS74FN	Dual D-Type Flip-Flop	3-17	SDAD001B
SN74AS74N	Dual D-Type Flip-Flop	3-17	SDAD001B
SN74AS95D	4-Bit Shift Register	3-22	SDAD001B
SN74AS95FN	4-Bit Shift Register	3-22	SDAD001B
SN74AS95N	4-Bit Shift Register	3-22	SDAD001B
SN74AS109D	Dual J-K Flip-Flop	3-17	SDAD001B
SN74AS109FN	Dual J-K Flip-Flop	3-17	SDAD001B
SN74AS109N	Dual J-K Flip-Flop	3-17	SDAD001B
SN74AS131AD	3-8 Line Decoder with Latch	3-30	SDAD001B
SN74AS131AFN	3-8 Line Decoder with Latch	3-30	SDAD001B
SN74AS131AN	3-8 Line Decoder with Latch	3-30	SDAD001B
SN74AS137D	3-8 Line Decoder/Demultiplexer	3-30	SDAD001B
SN74AS137FN	3-8 Line Decoder/Demultiplexer	3-30	SDAD001B
SN74AS137N	3-8 Line Decoder/Demultiplexer	3-30	SDAD001B
SN74AS138D	3-8 Line Decoder/Demultiplexer	3-30	SDAD001B
SN74AS138FN	3-8 Line Decoder/Demultiplexer	3-30	SDAD001B
SN74AS138N	3-8 Line Decoder/Demultiplexer	3-30	SDAD001B
SN74AS151D	8-1 Data Selector/Multiplexer	3-29	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74AS151FN	8-1 Data Selector/Multiplexer	3-29	SDAD001B
SN74AS151N	8-1 Data Selector/Multiplexer	3-29	SDAD001B
SN74AS153D	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS153FN	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS153N	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS157D	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS157FN	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS157N	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS158D	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS158FN	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS158N	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS160D	4-Bit Synchronous Decade Counter	3-25	SDAD001B
SN74AS160FN	4-Bit Synchronous Decade Counter	3-25	SDAD001B
SN74AS160N	4-Bit Synchronous Decade Counter	3-25	SDAD001B
SN74AS161D	4-Bit Synchronous Binary Counter	3-25	SDAD001B
SN74AS161FN	4-Bit Synchronous Binary Counter	3-25	SDAD001B
SN74AS161N	4-Bit Synchronous Binary Counter	3-25	SDAD001B
SN74AS162D	4-Bit Synchronous Decade Counter	3-25	SDAD001B
SN74AS162FN	4-Bit Synchronous Decade Counter	3-25	SDAD001B
SN74AS162N	4-Bit Synchronous Decade Counter	3-25	SDAD001B
SN74AS163D	4-Bit Synchronous Binary Counter	3-25	SDAD001B
SN74AS163FN	4-Bit Synchronous Binary Counter	3-25	SDAD001B
SN74AS163N	4-Bit Synchronous Binary Counter	3-25	SDAD001B
SN74AS168AD	4-Bit Up/Down Synchronous Decade Counter	3-25	SDAD001B
SN74AS168AFN	4-Bit Up/Down Synchronous Decade Counter	3-25	SDAD001B
SN74AS168AN	4-Bit Up/Down Synchronous Decade Counter	3-25	SDAD001B
SN74AS169AD	4-Bit Up/Down Synchronous Binary Counter	3-26	SDAD001B
SN74AS169AFN	4-Bit Up/Down Synchronous Binary Counter	3-26	SDAD001B
SN74AS169AN	4-Bit Up/Down Synchronous Binary Counter	3-26	SDAD001B
SN74AS174D	Hex D-Type Flip-Flop	3-18	SDAD001B
SN74AS174FN	Hex D-Type Flip-Flop	3-18	SDAD001B
SN74AS174N	Hex D-Type Flip-Flop	3-18	SDAD001B
SN74AS175AD	Quad D-Type Flip-Flop	3-18	SDAD001B
SN74AS175AFN	Quad D-Type Flip-Flop	3-18	SDAD001B
SN74AS175AN	Quad D-Type Flip-Flop	3-18	SDAD001B
SN74AS181BDW	4-Bit Arithmetic Logic Unit	3-34	SDAD001B
SN74AS181BN	4-Bit Arithmetic Logic Unit	3-34	SDAD001B
SN74AS181BNT	4-Bit Arithmetic Logic Unit	3-34	SDAD001B
SN74AS194D	Universal Shift Register	3-22	SDAD001B
SN74AS194FN	Universal Shift Register	3-22	SDAD001B
SN74AS194N	Universal Shift Register	3-22	SDAD001B
SN74AS230DW	Octal Buffer/Line Driver	3-13	SDAD001B
SN74AS230FN	Octal Buffer/Line Driver	3-13	SDAD001B
SN74AS230N	Octal Buffer/Line Driver	3-13	SDAD001B
SN74AS231DW	Octal Buffer/Line Driver	3-12	SDAD001B
SN74AS231FN	Octal Buffer/Line Driver	3-12	SDAD001B
SN74AS231N	Octal Buffer/Line Driver	3-12	SDAD001B
SN74AS240DW	Octal Buffer/Line Driver	3-12	SDAD001B
SN74AS240FN	Octal Buffer/Line Driver	3-12	SDAD001B
SN74AS240N	Octal Buffer/Line Driver	3-12	SDAD001B
SN74AS241DW	Octal Buffer/Line Driver	3-12	SDAD001B
SN74AS241FN	Octal Buffer/Line Driver	3-12	SDAD001B
SN74AS241N	Octal Buffer/Line Driver	3-12	SDAD001B
SN74AS242D	Quad Bus Transceiver	3-13	SDAD001B
SN74AS242FN	Quad Bus Transceiver	3-13	SDAD001B
SN74AS242N	Quad Bus Transceiver	3-13	SDAD001B
SN74AS243D	Quad Bus Transceiver	3-13	SDAD001B
SN74AS243FN	Quad Bus Transceiver	3-13	SDAD001B
SN74AS243N	Quad Bus Transceiver	3-13	SDAD001B
SN74AS244DW	Octal Buffer/Line Driver	3-12	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74AS244FN	Octal Buffer/Line Driver	3-12	SDAD001B
SN74AS244N	Octal Buffer/Line Driver	3-12	SDAD001B
SN74AS245DW	Octal Bus Transceiver	3-13	SDAD001B
SN74AS245FN	Octal Bus Transceiver	3-13	SDAD001B
SN74AS245N	Octal Bus Transceiver	3-13	SDAD001B
SN74AS250DW	16-1 Multiplexer	3-29	SDAD001B
SN74AS250FN	16-1 Multiplexer	3-29	SDAD001B
SN74AS250NT	16-1 Multiplexer	3-29	SDAD001B
SN74AS253D	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS253FN	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS253N	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS257D	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS257FN	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS257N	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS258D	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS258FN	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS258N	Quad 2-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS280D	9-Bit Parity Generator/Checker	3-33	SDAD001B
SN74AS280FN	9-Bit Parity Generator/Checker	3-33	SDAD001B
SN74AS280N	9-Bit Parity Generator/Checker	3-33	SDAD001B
SN74AS286D	9-Bit Parity Generator/Checker	3-33	SDAD001B
SN74AS286FN	9-Bit Parity Generator/Checker	3-33	SDAD001B
SN74AS286N	9-Bit Parity Generator/Checker	3-33	SDAD001B
SN74AS298D	Quad 2-Input Multiplexer	3-24	SDAD001B
SN74AS298FN	Quad 2-Input Multiplexer	3-24	SDAD001B
SN74AS298N	Quad 2-Input Multiplexer	3-24	SDAD001B
SN74AS352D	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS352FN	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS352N	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS353AD	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS353AFN	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS353AN	Dual 4-1 Data Selector/Multiplexer	3-28	SDAD001B
SN74AS373DW	Octal D-Type Latch	3-21	SDAD001B
SN74AS373FN	Octal D-Type Latch	3-21	SDAD001B
SN74AS373N	Octal D-Type Latch	3-21	SDAD001B
SN74AS374DW	Octal D-Type Flip-Flop	3-18	SDAD001B
SN74AS374FN	Octal D-Type Flip-Flop	3-18	SDAD001B
SN74AS374N	Octal D-Type Flip-Flop	3-18	SDAD001B
SN74AS533DW	Octal D-Type Latch	3-21	SDAD001B
SN74AS533FN	Octal D-Type Latch	3-21	SDAD001B
SN74AS533N	Octal D-Type Latch	3-21	SDAD001B
SN74AS534DW	Octal D-Type Flip-Flop	3-19	SDAD001B
SN74AS534FN	Octal D-Type Flip-Flop	3-19	SDAD001B
SN74AS534N	Octal D-Type Flip-Flop	3-19	SDAD001B
SN74AS573DW	Octal D-Type Latch	3-21	SDAD001B
SN74AS573FN	Octal D-Type Latch	3-21	SDAD001B
SN74AS573N	Octal D-Type Latch	3-21	SDAD001B
SN74AS574DW	Octal D-Type Flip-Flop	3-18	SDAD001B
SN74AS574FN	Octal D-Type Flip-Flop	3-18	SDAD001B
SN74AS574N	Octal D-Type Flip-Flop	3-18	SDAD001B
SN74AS575DW	Octal D-Type Flip-Flop	3-18	SDAD001B
SN74AS575FN	Octal D-Type Flip-Flop	3-18	SDAD001B
SN74AS575NT	Octal D-Type Flip-Flop	3-18	SDAD001B
SN74AS576DW	Octal D-Type Flip-Flop	3-19	SDAD001B
SN74AS576FN	Octal D-Type Flip-Flop	3-19	SDAD001B
SN74AS576N	Octal D-Type Flip-Flop	3-19	SDAD001B
SN74AS577DW	Octal D-Type Flip-Flop	3-19	SDAD001B
SN74AS577FN	Octal D-Type Flip-Flop	3-19	SDAD001B
SN74AS577NT	Octal D-Type Flip-Flop	3-19	SDAD001B
SN74AS580DW	Octal D-Type Latch	3-21	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74AS580FN	Octal D-Type Latch	3-21	SDAD001B
SN74AS580N	Octal D-Type Latch	3-21	SDAD001B
SN74AS620DW	Octal Bus Transceiver	3-13	SDAD001B
SN74AS620FN	Octal Bus Transceiver	3-13	SDAD001B
SN74AS620N	Octal Bus Transceiver	3-13	SDAD001B
SN74AS621DW	Octal Bus Transceiver	3-11	SDAD001B
SN74AS621FN	Octal Bus Transceiver	3-11	SDAD001B
SN74AS621N	Octal Bus Transceiver	3-11	SDAD001B
SN74AS622DW	Octal Bus Transceiver	3-11	SDAD001B
SN74AS622FN	Octal Bus Transceiver	3-11	SDAD001B
SN74AS622N	Octal Bus Transceiver	3-11	SDAD001B
SN74AS623DW	Octal Bus Transceiver	3-15	SDAD001B
SN74AS623FN	Octal Bus Transceiver	3-15	SDAD001B
SN74AS623N	Octal Bus Transceiver	3-15	SDAD001B
SN74AS632JD	Error Detection and Correction Unit	3-33	SDAD001B
SN74AS638ADW	Octal Bus Transceiver	3-11	SDAD001B
SN74AS638AFN	Octal Bus Transceiver	3-11	SDAD001B
SN74AS638AN	Octal Bus Transceiver	3-11	SDAD001B
SN74AS639DW	Octal Bus Transceiver	3-11	SDAD001B
SN74AS639FN	Octal Bus Transceiver	3-11	SDAD001B
SN74AS639N	Octal Bus Transceiver	3-11	SDAD001B
SN74AS640DW	Octal Bus Transceiver	3-13	SDAD001B
SN74AS640FN	Octal Bus Transceiver	3-13	SDAD001B
SN74AS640N	Octal Bus Transceiver	3-13	SDAD001B
SN74AS641DW	Octal Bus Transceiver	3-11	SDAD001B
SN74AS641FN	Octal Bus Transceiver	3-11	SDAD001B
SN74AS641N	Octal Bus Transceiver	3-11	SDAD001B
SN74AS642DW	Octal Bus Transceiver	3-11	SDAD001B
SN74AS642FN	Octal Bus Transceiver	3-11	SDAD001B
SN74AS642N	Octal Bus Transceiver	3-11	SDAD001B
SN74AS643DW	Octal Bus Transceiver	3-14	SDAD001B
SN74AS643FN	Octal Bus Transceiver	3-14	SDAD001B
SN74AS643N	Octal Bus Transceiver	3-14	SDAD001B
SN74AS644DW	Octal Bus Transceiver	3-11	SDAD001B
SN74AS644FN	Octal Bus Transceiver	3-11	SDAD001B
SN74AS644N	Octal Bus Transceiver	3-11	SDAD001B
SN74AS645DW	Octal Bus Transceiver	3-15	SDAD001B
SN74AS645FN	Octal Bus Transceiver	3-15	SDAD001B
SN74AS645N	Octal Bus Transceiver	3-15	SDAD001B
SN74AS646DW	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74AS646FN	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74AS646NT	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74AS648DW	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74AS648FN	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74AS648NT	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74AS651DW	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74AS651FN	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74AS651NT	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74AS652DW	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74AS652FN	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74AS652NT	Octal Bus Transceiver and Register	3-14	SDAD001B
SN74AS756DW	Octal Buffer/Line Driver	3-10	SDAD001B
SN74AS756FN	Octal Buffer/Line Driver	3-10	SDAD001B
SN74AS756N	Octal Buffer/Line Driver	3-10	SDAD001B
SN74AS757DW	Octal Buffer/Line Driver	3-10	SDAD001B
SN74AS757FN	Octal Buffer/Line Driver	3-10	SDAD001B
SN74AS757N	Octal Buffer/Line Driver	3-10	SDAD001B
SN74AS758D	Quad Bus Transceiver	3-11	SDAD001B
SN74AS758FN	Quad Bus Transceiver	3-11	SDAD001B
SN74AS758N	Quad Bus Transceiver	3-11	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74AS759D	Quad Bus Transceiver	3-11	SDAD001B
SN74AS759FN	Quad Bus Transceiver	3-11	SDAD001B
SN74AS759N	Quad Bus Transceiver	3-11	SDAD001B
SN74AS760DW	Octal Buffer/Line Driver	3-10	SDAD001B
SN74AS760FN	Octal Buffer/Line Driver	3-10	SDAD001B
SN74AS760N	Octal Buffer/Line Driver	3-10	SDAD001B
SN74AS762DW	Octal Buffer/Line Driver	3-10	SDAD001B
SN74AS762FN	Octal Buffer/Line Driver	3-10	SDAD001B
SN74AS762N	Octal Buffer/Line Driver	3-10	SDAD001B
SN74AS763DW	Octal Buffer/Line Driver	3-10	SDAD001B
SN74AS763FN	Octal Buffer/Line Driver	3-10	SDAD001B
SN74AS763N	Octal Buffer/Line Driver	3-10	SDAD001B
SN74AS804BDW	Hex 2-Input NAND Driver	3-4	SDAD001B
SN74AS804BFN	Hex 2-Input NAND Driver	3-4	SDAD001B
SN74AS804BN	Hex 2-Input NAND Driver	3-4	SDAD001B
SN74AS805BDW	Hex 2-Input NOR Driver	3-6	SDAD001B
SN74AS805BFN	Hex 2-Input NOR Driver	3-6	SDAD001B
SN74AS805BN	Hex 2-Input NOR Driver	3-6	SDAD001B
SN74AS808BDW	Hex 2-Input AND Driver	3-10	SDAD001B
SN74AS808BFN	Hex 2-Input AND Driver	3-10	SDAD001B
SN74AS808BN	Hex 2-Input AND Driver	3-10	SDAD001B
SN74AS821DW	10-Bit Bus Interface Flip-Flop	3-19	SDAD001B
SN74AS821FN	10-Bit Bus Interface Flip-Flop	3-19	SDAD001B
SN74AS821NT	10-Bit Bus Interface Flip-Flop	3-19	SDAD001B
SN74AS822DW	10-Bit Bus Interface Flip-Flop	3-19	SDAD001B
SN74AS822FN	10-Bit Bus Interface Flip-Flop	3-19	SDAD001B
SN74AS822NT	10-Bit Bus Interface Flip-Flop	3-19	SDAD001B
SN74AS823DW	9-Bit Bus Interface Flip-Flop	3-19	SDAD001B
SN74AS823FN	9-Bit Bus Interface Flip-Flop	3-19	SDAD001B
SN74AS823NT	9-Bit Bus Interface Flip-Flop	3-19	SDAD001B
SN74AS824DW	9-Bit Bus Interface Flip-Flop	3-19	SDAD001B
SN74AS824FN	9-Bit Bus Interface Flip-Flop	3-19	SDAD001B
SN74AS824NT	9-Bit Bus Interface Flip-Flop	3-19	SDAD001B
SN74AS825DW	8-Bit Bus Interface Flip-Flop	3-19	SDAD001B
SN74AS825FN	8-Bit Bus Interface Flip-Flop	3-19	SDAD001B
SN74AS825NT	8-Bit Bus Interface Flip-Flop	3-19	SDAD001B
SN74AS826DW	8-Bit Bus Interface Flip-Flop	3-19	SDAD001B
SN74AS826FN	8-Bit Bus Interface Flip-Flop	3-19	SDAD001B
SN74AS826NT	8-Bit Bus Interface Flip-Flop	3-19	SDAD001B
SN74AS832BDW	Hex 2-Input OR Driver	3-6	SDAD001B
SN74AS832BFN	Hex 2-Input OR Driver	3-6	SDAD001B
SN74AS832BN	Hex 2-Input OR Driver	3-6	SDAD001B
SN74AS841DW	10-Bit Bus Interface Latch	3-21	SDAD001B
SN74AS841FN	10-Bit Bus Interface Latch	3-21	SDAD001B
SN74AS841NT	10-Bit Bus Interface Latch	3-21	SDAD001B
SN74AS842DW	10-Bit Bus Interface Latch	3-21	SDAD001B
SN74AS842FN	10-Bit Bus Interface Latch	3-21	SDAD001B
SN74AS842NT	10-Bit Bus Interface Latch	3-21	SDAD001B
SN74AS843DW	9-Bit Bus Interface Latch	3-21	SDAD001B
SN74AS843FN	9-Bit Bus Interface Latch	3-21	SDAD001B
SN74AS843NT	9-Bit Bus Interface Latch	3-21	SDAD001B
SN74AS844DW	9-Bit Bus Interface Latch	3-21	SDAD001B
SN74AS844FN	9-Bit Bus Interface Latch	3-21	SDAD001B
SN74AS844NT	9-Bit Bus Interface Latch	3-21	SDAD001B
SN74AS845DW	8-Bit Bus Interface Latch	3-21	SDAD001B
SN74AS845FN	8-Bit Bus Interface Latch	3-21	SDAD001B
SN74AS845NT	8-Bit Bus Interface Latch	3-21	SDAD001B
SN74AS846DW	8-Bit Bus Interface Latch	3-21	SDAD001B
SN74AS846FN	8-Bit Bus Interface Latch	3-21	SDAD001B
SN74AS846NT	8-Bit Bus Interface Latch	3-21	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74AS850FN	1 of 16 Data Selector/Multiplexer	3-29	SDAD001B
SN74AS850N	1 of 16 Data Selector/Multiplexer	3-29	SDAD001B
SN74AS851FN	1 of 16 Data Selector/Multiplexer	3-29	SDAD001B
SN74AS851N	1 of 16 Data Selector/Multiplexer	3-29	SDAD001B
SN74AS857DW	Hex 2-to-1 Multiplexer	3-29	SDAD001B
SN74AS857FN	Hex 2-to-1 Multiplexer	3-29	SDAD001B
SN74AS857NT	Hex 2-to-1 Multiplexer	3-29	SDAD001B
SN74AS866FN	8-Bit Magnitude Comparator	3-32	SDAD001B
SN74AS866N	8-Bit Magnitude Comparator	3-32	SDAD001B
SN74AS867DW	8-Bit Synchronous Up/Down Counter	3-26	SDAD001B
SN74AS867FN	8-Bit Synchronous Up/Down Counter	3-26	SDAD001B
SN74AS867NT	8-Bit Synchronous Up/Down Counter	3-26	SDAD001B
SN74AS869DW	8-Bit Synchronous Up/Down Counter	3-26	SDAD001B
SN74AS869FN	8-Bit Synchronous Up/Down Counter	3-26	SDAD001B
SN74AS869NT	8-Bit Synchronous Up/Down Counter	3-26	SDAD001B
SN74AS870DW	Dual 16-BY-4 Register File	3-23	SDAD001B
SN74AS870FN	Dual 16-BY-4 Register File	3-23	SDAD001B
SN74AS870NT	Dual 16-BY-4 Register File	3-23	SDAD001B
SN74AS871FN	Dual 16-BY-4 Register File	3-23	SDAD001B
SN74AS871N	Dual 16-BY-4 Register File	3-23	SDAD001B
SN74AS873DW	Dual 4-Bit D-Type Latch	3-21	SDAD001B
SN74AS873FN	Dual 4-Bit D-Type Latch	3-21	SDAD001B
SN74AS873NT	Dual 4-Bit D-Type Latch	3-21	SDAD001B
SN74AS874DW	Dual 4-Bit Flip-Flop	3-18	SDAD001B
SN74AS874FN	Dual 4-Bit Flip-Flop	3-18	SDAD001B
SN74AS874NT	Dual 4-Bit Flip-Flop	3-18	SDAD001B
SN74AS876DW	Dual 4-Bit Flip-Flop	3-19	SDAD001B
SN74AS876FN	Dual 4-Bit Flip-Flop	3-19	SDAD001B
SN74AS876NT	Dual 4-Bit Flip-Flop	3-19	SDAD001B
SN74AS878DW	Dual 4-Bit Flip-Flop	3-18	SDAD001B
SN74AS878FN	Dual 4-Bit Flip-Flop	3-18	SDAD001B
SN74AS878NT	Dual 4-Bit Flip-Flop	3-18	SDAD001B
SN74AS879DW	Dual 4-Bit Flip-Flop	3-19	SDAD001B
SN74AS879FN	Dual 4-Bit Flip-Flop	3-19	SDAD001B
SN74AS879NT	Dual 4-Bit Flip-Flop	3-19	SDAD001B
SN74AS880DW	Dual 4-Bit D-Type Latch	3-21	SDAD001B
SN74AS880FN	Dual 4-Bit D-Type Latch	3-21	SDAD001B
SN74AS880NT	Dual 4-Bit D-Type Latch	3-21	SDAD001B
SN74AS881ADW	Arithmetic Logic Unit/Function Generator	3-34	SDAD001B
SN74AS881AFN	Arithmetic Logic Unit/Function Generator	3-34	SDAD001B
SN74AS881ANT	Arithmetic Logic Unit/Function Generator	3-34	SDAD001B
SN74AS882ADW	32-Bit Look-Ahead Carry Generator	3-34	SDAD001B
SN74AS882AFN	32-Bit Look-Ahead Carry Generator	3-34	SDAD001B
SN74AS882ANT	32-Bit Look-Ahead Carry Generator	3-34	SDAD001B
SN74AS885DW	8-Bit Magnitude Comparator	3-32	SDAD001B
SN74AS885FN	8-Bit Magnitude Comparator	3-32	SDAD001B
SN74AS885NT	8-Bit Magnitude Comparator	3-32	SDAD001B
SN74AS887GB	8-Bit Processor	4-31	SDVD001
SN74AS887-1GB	8-Bit Processor	4-31	SDVD001
SN74AS888GB	8-Bit Processor Slice	4-33	SDVD001
SN74AS888-1GB	8-Bit Processor Slice	4-33	SDVD001
SN74AS890GB	Microsequencer	4-35	SDVD001
SN74AS890-1GB	Microsequencer	4-35	SDVD001
SN74AS895GB	8-Bit Memory Address Generator	4-36	SDVD001
SN74AS897AGB	16-Bit Parallel/Serial Barrel Shifter	4-38	SDVD001
SN74AS1000AD	Quad NAND Buffer/Driver	3-4	SDAD001B
SN74AS1000AFN	Quad NAND Buffer/Driver	3-4	SDAD001B
SN74AS1000AN	Quad NAND Buffer/Driver	3-4	SDAD001B
SN74AS1004AD	Hex Inverting Driver	3-9	SDAD001B
SN74AS1004AFN	Hex Inverting Driver	3-9	SDAD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74AS1004AN	Hex Inverting Driver	3-9	SDAD001B
SN74AS1008AD	Quad AND Buffer	3-5	SDAD001B
SN74AS1008AFN	Quad AND Buffer	3-5	SDAD001B
SN74AS1008AN	Quad AND Buffer	3-5	SDAD001B
SN74AS1032AD	Quad OR Buffer/Driver	3-6	SDAD001B
SN74AS1032AFN	Quad OR Buffer/Driver	3-6	SDAD001B
SN74AS1032AN	Quad OR Buffer/Driver	3-6	SDAD001B
SN74AS1034AD	Hex Driver	3-10	SDAD001B
SN74AS1034AFN	Hex Driver	3-10	SDAD001B
SN74AS1034AN	Hex Driver	3-10	SDAD001B
SN74AS1036AD	Quad 2-Input NOR Driver	3-6	SDAD001B
SN74AS1036AFN	Quad 2-Input NOR Driver	3-6	SDAD001B
SN74AS1036AN	Quad 2-Input NOR Driver	3-6	SDAD001B
SN74AS1181DW	4-Bit ALU Function Generator	3-34	SDAD001B
SN74AS1181FN	4-Bit ALU Function Generator	3-34	SDAD001B
SN74AS1181NT	4-Bit ALU Function Generator	3-34	SDAD001B
SN74AS1804DW	Hex 2-Input NAND Driver	3-4	SDAD001B
SN74AS1804FN	Hex 2-Input NAND Driver	3-4	SDAD001B
SN74AS1804N	Hex 2-Input NAND Driver	3-4	SDAD001B
SN74AS1805DW	Hex 2-Input NOR Driver	3-6	SDAD001B
SN74AS1805FN	Hex 2-Input NOR Driver	3-6	SDAD001B
SN74AS1805N	Hex 2-Input NOR Driver	3-6	SDAD001B
SN74AS1808DW	Hex 2-Input AND Driver	3-10	SDAD001B
SN74AS1808FN	Hex 2-Input AND Driver	3-10	SDAD001B
SN74AS1808N	Hex 2-Input AND Driver	3-10	SDAD001B
SN74AS1821NT	10-Bit Bus Interface Flip-Flop	3-19	SDAS131
SN74AS1823NT	9-Bit Bus Interface Flip-Flop	3-19	SDAS126
SN74AS1832DW	Hex 2-Input OR Driver	3-6	SDAD001B
SN74AS1832FN	Hex 2-Input OR Driver	3-6	SDAD001B
SN74AS1832N	Hex 2-Input OR Driver	3-6	SDAD001B
SN74AS1841NT	10-Bit Bus Interface Latch	3-21	SDAS130
SN74AS1843NT	9-Bit Bus Interface Latch	3-21	SDAS127
SN74AS2620DW	Octal Bus Transceiver/MOS Driver	3-15	SDAD001B
SN74AS2620FN	Octal Bus Transceiver/MOS Driver	3-15	SDAD001B
SN74AS2620N	Octal Bus Transceiver/MOS Driver	3-15	SDAD001B
SN74AS2623DW	Octal Bus Transceiver/MOS Driver	3-15	SDAD001B
SN74AS2623FN	Octal Bus Transceiver/MOS Driver	3-15	SDAD001B
SN74AS2623N	Octal Bus Transceiver/MOS Driver	3-15	SDAD001B
SN74AS2640DW	Octal Bus Transceiver/MOS Driver	3-15	SDAD001B
SN74AS2640FN	Octal Bus Transceiver/MOS Driver	3-15	SDAD001B
SN74AS2640N	Octal Bus Transceiver/MOS Driver	3-15	SDAD001B
SN74AS2645DW	Octal Bus Transceiver/MOS Driver	3-15	SDAD001B
SN74AS2645FN	Octal Bus Transceiver/MOS Driver	3-15	SDAD001B
SN74AS2645N	Octal Bus Transceiver/MOS Driver	3-15	SDAD001B
SN74AS8833GB	Funnel Shifter	4-52	TBA
SN74AS8834GB	40-Bit Register File	4-55	TBA
SN74AS8838GB	32-Bit Barrel Shifter	4-54	SDVD001
SN74AS8839GB	32-Bit Shuffle Exchange	4-57	SDAS100
SN74AS8840GB	Digital Crossbar Switch	4-59	SDAS114
SN74BCT240D	Octal Buffer/Line Driver	3-12	TBA
SN74BCT240N	Octal Buffer/Line Driver	3-12	TBA
SN74BCT241D	Octal Buffer/Line Driver	3-12	TBA
SN74BCT241N	Octal Buffer/Line Driver	3-12	TBA
SN74BCT244D	Octal Buffer/Line Driver	3-12	TBA
SN74BCT244N	Octal Buffer/Line Driver	3-12	TBA
SN74BCT245D	Octal Bus Transceiver	3-13	TBA
SN74BCT245N	Octal Bus Transceiver	3-13	TBA
SN74BCT373DW	Octal D-Type Latch	3-21	TBA
SN74BCT373N	Octal D-Type Latch	3-21	TBA
SN74BCT374DW	Octal D-Type Flip-Flop	3-18	TBA

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74BCT374N	Octal D-Type Flip-Flop	3-18	TBA
SN74BCT533DW	Octal D-Type Latch	3-21	TBA
SN74BCT533N	Octal D-Type Latch	3-21	TBA
SN74BCT534DW	Octal D-Type Flip-Flop	3-19	TBA
SN74BCT534N	Octal D-Type Flip-Flop	3-19	TBA
SN74BCT819DW	Shadow Register	3-24	TBA
SN74BCT819NT	Shadow Register	3-24	TBA
SN74BCT819FN	Shadow Register	3-24	TBA
SN74BCT1245DW	Low Power BCT245	3-14	TBA
SN74BCT1245N	Low Power BCT245	3-14	TBA
SN74BCT2240DW	Octal MOS Memory Driver	3-15	TBA
SN74BCT2240N	Octal MOS Memory Driver	3-15	TBA
SN74BCT2241DW	Octal MOS Memory Driver	3-15	TBA
SN74BCT2241N	Octal MOS Memory Driver	3-15	TBA
SN74BCT2244DW	Octal MOS Memory Driver	3-15	TBA
SN74BCT2244N	Octal MOS Memory Driver	3-15	TBA
SN74BCT2827DW	10-Bit MOS Memory Driver	3-13	SCLS051
SN74BCT2827NT	10-Bit MOS Memory Driver	3-13	SCLS051
SN74BCT2827FN	10-Bit MOS Memory Driver	3-13	SCLS051
SN74BCT2828DW	10-Bit MOS Memory Driver	3-13	SCLS051
SN74BCT2828NT	10-Bit MOS Memory Driver	3-13	SCLS051
SN74BCT2828FN	10-Bit MOS Memory Driver	3-13	SCLS051
SN74BCT29818DW	8-Bit Diagnostic/Pipeline/Register	3-24	TBA
SN74BCT29818NT	8-Bit Diagnostic/Pipeline/Register	3-24	TBA
SN74BCT29818FN	8-Bit Diagnostic/Pipeline/Register	3-24	TBA
SN74BCT29827DW	10-Bit Bus Driver	3-13	SCLS052
SN74BCT29827NT	10-Bit Bus Driver	3-13	SCLS052
SN74BCT29827FN	10-Bit Bus Driver	3-13	SCLS052
SN74BCT29828DW	10-Bit Bus Driver	3-13	SCLS052
SN74BCT29828NT	10-Bit Bus Driver	3-13	SCLS052
SN74BCT29828FN	10-Bit Bus Driver	3-13	SCLS052
SN74BCT29833DW	Parity Bus Transceiver	3-14	TBA
SN74BCT29833NT	Parity Bus Transceiver	3-14	TBA
SN74BCT29833FN	Parity Bus Transceiver	3-14	TBA
SN74BCT29834DW	Parity Bus Transceiver	3-14	TBA
SN74BCT29834NT	Parity Bus Transceiver	3-14	TBA
SN74BCT29834FN	Parity Bus Transceiver	3-14	TBA
SN74BCT29853DW	Parity Bus Transceiver	3-14	TBA
SN74BCT29853NT	Parity Bus Transceiver	3-14	TBA
SN74BCT29853FN	Parity Bus Transceiver	3-14	TBA
SN74BCT29854DW	Parity Bus Transceiver	3-14	TBA
SN74BCT29854NT	Parity Bus Transceiver	3-14	TBA
SN74BCT29854FN	Parity Bus Transceiver	3-14	TBA
SN74BCT29861DW	10-Bit Transceiver	3-14	SCLS056
SN74BCT29861NT	10-Bit Transceiver	3-14	SCLS056
SN74BCT29861FN	10-Bit Transceiver	3-14	SCLS056
SN74BCT29862DW	10-Bit Transceiver	3-14	TBA
SN74BCT29862NT	10-Bit Transceiver	3-14	TBA
SN74BCT29862FN	10-Bit Transceiver	3-14	TBA
SN74BCT29863DW	9 -Bit Transceiver	3-14	SCLS055
SN74BCT29863NT	9 -Bit Transceiver	3-14	SCLS055
SN74BCT29863FN	9 -Bit Transceiver	3-14	SCLS055
SN74BCT29864DW	9 -Bit Transceiver	3-14	TBA
SN74BCT29864NT	9 -Bit Transceiver	3-14	TBA
SN74BCT29864FN	9 -Bit Transceiver	3-14	TBA
SN74F00D	Quad 2-Input NAND Gate	3-4	SDFD001
SN74F00N	Quad 2-Input NAND Gate	3-4	SDFD001
SN74F02D	Quad 2-Input NOR Gate	3-6	SDFD001
SN74F02N	Quad 2-Input NOR Gate	3-6	SDFD001
SN74F04D	Hex Inverter	3-9	SDFD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74F04N	Hex Inverter	3-9	SDFD001
SN74F08D	Quad 2-Input AND Gate	3-5	SDFD001
SN74F08N	Quad 2-Input AND Gate	3-5	SDFD001
SN74F09D	Quad 2-Input AND Gate OC	3-5	TBA
SN74F09N	Quad 2-Input AND Gate OC	3-5	TBA
SN74F10D	Triple 3-Input NAND Gate	3-4	SDFD001
SN74F10N	Triple 3-Input NAND Gate	3-4	SDFD001
SN74F11D	Triple 3-Input AND Gate	3-5	SDFD001
SN74F11N	Triple 3-Input AND Gate	3-5	SDFD001
SN74F20D	Dual 4-Input NAND Gate	3-4	SDFD001
SN74F20N	Dual 4-Input NAND Gate	3-4	SDFD001
SN74F21D	Dual 4-Input AND Gate	3-5	SDFD001
SN74F21N	Dual 4-Input AND Gate	3-5	SDFD001
SN74F27D	Triple 3-Input NOR Gate	3-6	SDFD001
SN74F27N	Triple 3-Input NOR Gate	3-6	SDFD001
SN74F30D	8-Input NAND Gate	3-4	SDFD001
SN74F30N	8-Input NAND Gate	3-4	SDFD001
SN74F32D	Quad 2-Input OR Gate	3-6	SDFD001
SN74F32N	Quad 2-Input OR Gate	3-6	SDFD001
SN74F36D	Quad 2-Input NOR Gate	3-6	SDFD001
SN74F36N	Quad 2-Input NOR Gate	3-6	SDFD001
SN74F74D	Dual D-Type Flip-Flop	3-17	SDFD001
SN74F74N	Dual D-Type Flip-Flop	3-17	SDFD001
SN74F109D	Dual J-K Flip-Flop	3-17	SDFD001
SN74F109N	Dual J-K Flip-Flop	3-17	SDFD001
SN74F112D	Dual J-K Flip-Flop	3-17	SDFD001
SN74F112N	Dual J-K Flip-Flop	3-17	SDFD001
SN74F113N	Dual J-K Flip-Flop	3-17	SDFD001
SN74F114N	Dual J-K Flip-Flop	3-17	SDFD001
SN74F138D	3-8 Line Decoder/Demultiplexer	3-30	SDFD001
SN74F138N	3-8 Line Decoder/Demultiplexer	3-30	SDFD001
SN74F151D	8-1 Data Selector/Multiplexer	3-29	SDFD001
SN74F151N	8-1 Data Selector/Multiplexer	3-29	SDFD001
SN74F153D	Dual 4-1 Data Selector/Multiplexer	3-28	SDFD001
SN74F153N	Dual 4-1 Data Selector/Multiplexer	3-28	SDFD001
SN74F157AD	Quad 2-1 Data Selector/Multiplexer	3-28	SDFD001
SN74F157AN	Quad 2-1 Data Selector/Multiplexer	3-28	SDFD001
SN74F158AD	Quad 2-1 Data Selector/Multiplexer	3-28	SDFD001
SN74F158AN	Quad 2-1 Data Selector/Multiplexer	3-28	SDFD001
SN74F160AD	4-Bit Synchronous Decade Counter	3-25	SDFD001
SN74F160AN	4-Bit Synchronous Decade Counter	3-25	SDFD001
SN74F161AD	4-Bit Synchronous Binary Counter	3-25	SDFD001
SN74F161AN	4-Bit Synchronous Binary Counter	3-25	SDFD001
SN74F162AD	4-Bit Synchronous Decade Counter	3-25	SDFD001
SN74F162AN	4-Bit Synchronous Decade Counter	3-25	SDFD001
SN74F163AD	4-Bit Synchronous Binary Counter	3-25	SDFD001
SN74F163AN	4-Bit Synchronous Binary Counter	3-25	SDFD001
SN74F168D	4-Bit Synchronous Decade Counter	3-25	SDFD001
SN74F168N	4-Bit Synchronous Decade Counter	3-25	SDFD001
SN74F169D	4-Bit Synchronous Binary Counter	3-26	SDFD001
SN74F169N	4-Bit Synchronous Binary Counter	3-26	SDFD001
SN74F174D	Hex D-Type Flip-Flop	3-18	SDFD001
SN74F174N	Hex D-Type Flip-Flop	3-18	SDFD001
SN74F175D	Hex D-Type Flip-Flop	3-18	SDFD001
SN74F175N	Hex D-Type Flip-Flop	3-18	SDFD001
SN74F240DW	Octal Buffer/Line Driver	3-12	SDFD001
SN74F240N	Octal Buffer/Line Driver	3-12	SDFD001
SN74F241DW	Octal Buffer/Line Driver	3-12	SDFD001
SN74F241N	Octal Buffer/Line Driver	3-12	SDFD001
SN74F242D	Quad Bus Transceiver	3-13	SDFD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74F242N	Quad Bus Transceiver	3-13	SDFD001
SN74F243D	Quad Bus Transceiver	3-13	SDFD001
SN74F243N	Quad Bus Transceiver	3-13	SDFD001
SN74F244DW	Octal Buffer/Line Driver	3-12	SDFD001
SN74F244N	Octal Buffer/Line Driver	3-12	SDFD001
SN74F245DW	Octal Bus Transceiver	3-13	SDFD001
SN74F245N	Octal Bus Transceiver	3-13	SDFD001
SN74F251D	8-1 Data Selector/Multiplexer	3-29	SDFD001
SN74F251N	8-1 Data Selector/Multiplexer	3-29	SDFD001
SN74F253D	Dual 4-Input Multiplexer	3-28	SDFD001
SN74F253N	Dual 4-Input Multiplexer	3-28	SDFD001
SN74F257D	Quad 2-1 Data Selector/Multiplexer	3-28	SDFD001
SN74F257N	Quad 2-1 Data Selector/Multiplexer	3-28	SDFD001
SN74F258D	Quad 2-1 Data Selector/Multiplexer	3-28	SDFD001
SN74F258N	Quad 2-1 Data Selector/Multiplexer	3-28	SDFD001
SN74F273DW	Octal D-Type Flip-Flop	3-18	SDFD001
SN74F273N	Octal D-Type Flip-Flop	3-18	SDFD001
SN74F280AD	9-Bit Parity Generator/Checker	3-33	SDFD001
SN74F280AN	9-Bit Parity Generator/Checker	3-33	SDFD001
SN74F283D	4-Bit Full Adder	3-34	SDFD001
SN74F283N	4-Bit Full Adder	3-34	SDFD001
SN74F299DW	8-Bit Universal Shift/Storage Register	3-22	SDFD001
SN74F299N	8-Bit Universal Shift/Storage Register	3-22	SDFD001
SN74F323DW	8-Bit Universal Shift/Storage Register	3-22	SDFD001
SN74F323N	8-Bit Universal Shift/Storage Register	3-22	SDFD001
SN74F350D	4-Bit Shifter	3-30	SDFD001
SN74F350N	4-Bit Shifter	3-30	SDFD001
SN74F352D	Dual Data Selector/Multiplexer	3-28	SDFD001
SN74F352N	Dual Data Selector/Multiplexer	3-28	SDFD001
SN74F353D	Dual 4-1 Selector/Multiplexer	3-28	SDFD001
SN74F353N	Dual 4-1 Selector/Multiplexer	3-28	SDFD001
SN74F373DW	Octal D-Type Latch	3-21	SDFD001
SN74F373N	Octal D-Type Latch	3-21	SDFD001
SN74F374DW	Octal D-Type Flip-Flop	3-18	SDFD001
SN74F374N	Octal D-Type Flip-Flop	3-18	SDFD001
SN74F377D	Octal D-Type Flip-Flop	3-18	SDFD001
SN74F377N	Octal D-Type Flip-Flop	3-18	SDFD001
SN74F378D	Hex D-Type Flip-Flop	3-18	SDFD001
SN74F378N	Hex D-Type Flip-Flop	3-18	SDFD001
SN74F379D	Quad D-Type Flip-Flop	3-18	SDFD001
SN74F379N	Quad D-Type Flip-Flop	3-18	SDFD001
SN74F381DW	ALU Function Generator	3-34	SDFD001
SN74F381N	ALU Function Generator	3-34	SDFD001
SN74F382DW	ALU Function Generator	3-34	SDFD001
SN74F382N	ALU Function Generator	3-34	SDFD001
SN74F518DW	8-Bit Identity Comparator	3-32	SDFD001
SN74F518N	8-Bit Identity Comparator	3-32	SDFD001
SN74F519DW	8-Bit Identity Comparator	3-32	SDFD001
SN74F519N	8-Bit Identity Comparator	3-32	SDFD001
SN74F520DW	8-Bit Identity Comparator	3-32	SDFD001
SN74F520N	8-Bit Identity Comparator	3-32	SDFD001
SN74F521DW	8-Bit Identity Comparator	3-32	SDFD001
SN74F521N	8-Bit Identity Comparator	3-32	SDFD001
SN74F533DW	Octal D-Type Latch	3-21	SDFD001
SN74F533N	Octal D-Type Latch	3-21	SDFD001
SN74F534DW	Octal D-Type Flip-Flop	3-19	SDFD001
SN74F534N	Octal D-Type Flip-Flop	3-19	SDFD001
SN74F543DW	Octal Registered Transceiver	3-14	SDFD001
SN74F543N	Octal Registered Transceiver	3-14	SDFD001
SN74F544DW	Octal Registered Transceiver	3-14	SDFD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74F544N	Octal Registered Transceiver	3-14	SDFD001
SN74F563DW	Octal D-Type Latch	3-21	TBA
SN74F563N	Octal D-Type Latch	3-21	TBA
SN74F564DW	Octal D-Type Flip-Flop	3-19	TBA
SN74F564N	Octal D-Type Flip-Flop	3-19	TBA
SN74F568DW	4-Bit Synchronous Decade Counter	3-25	SDFD001
SN74F568N	4-Bit Synchronous Decade Counter	3-25	SDFD001
SN74F569DW	4-Bit Synchronous Binary Counter	3-26	SDFD001
SN74F569N	4-Bit Synchronous Binary Counter	3-26	SDFD001
SN74F573DW	Octal D-Type Latch	3-21	TBA
SN74F573N	Octal D-Type Latch	3-21	TBA
SN74F574DW	Octal D-Type Flip-Flop	3-18	TBA
SN74F574N	Octal D-Type Flip-Flop	3-18	TBA
SN74F620N	Octal Bus Transceiver	3-13	SDFD001
SN74F621N	Octal Bus Transceiver	3-11	SDFD001
SN74F622N	Octal Bus Transceiver	3-11	SDFD001
SN74F623DW	Octal Bus Transceiver	3-15	SDFD001
SN74F623N	Octal Bus Transceiver	3-15	SDFD001
SN74HCT137DW	3-8 Line Decoder/Demultiplexer	3-30	SCLD001A
SN74HCT137N	3-8 Line Decoder/Demultiplexer	3-30	SCLD001A
SN74HCT138DW	3-8 Line Decoder/Demultiplexer	3-30	SCLD001A
SN74HCT138N	3-8 Line Decoder/Demultiplexer	3-30	SCLD001A
SN74HCT237DW	3-8 Line Decoder/Demultiplexer	3-30	SCLD001A
SN74HCT237N	3-8 Line Decoder/Demultiplexer	3-30	SCLD001A
SN74HCT238DW	3-8 Line Decoder/Demultiplexer	3-30	SCLD001A
SN74HCT238N	3-8 Line Decoder/Demultiplexer	3-30	SCLD001A
SN74HCT240DW	Octal Buffer/Line Driver	3-12	SCLD001A
SN74HCT240N	Octal Buffer/Line Driver	3-12	SCLD001A
SN74HCT241DW	Octal Buffer/Line Driver	3-12	SCLD001A
SN74HCT241N	Octal Buffer/Line Driver	3-12	SCLD001A
SN74HCT242N	Quad Bus Transceiver	3-13	SCLD001A
SN74HCT243N	Quad Bus Transceiver	3-13	SCLD001A
SN74HCT244DW	Octal Buffer/Line Driver	3-12	SCLD001A
SN74HCT244N	Octal Buffer/Line Driver	3-12	SCLD001A
SN74HCT245DW	Octal Bus Transceiver	3-13	SCLD001A
SN74HCT245N	Octal Bus Transceiver	3-13	SCLD001A
SN74HCT373DW	Octal D-Type Latch	3-21	SCLD001A
SN74HCT373N	Octal D-Type Latch	3-21	SCLD001A
SN74HCT374DW	Octal D-Type Flip-Flop	3-18	SCLD001A
SN74HCT374N	Octal D-Type Flip-Flop	3-18	SCLD001A
SN74HCT533DW	Octal D-Type Latch	3-21	SCLD001A
SN74HCT533N	Octal D-Type Latch	3-21	SCLD001A
SN74HCT534DW	Octal D-Type Flip-Flop	3-19	SCLD001A
SN74HCT534N	Octal D-Type Flip-Flop	3-19	SCLD001A
SN74HCT540DW	Octal Buffer/Line Driver	3-12	SCLD001A
SN74HCT540N	Octal Buffer/Line Driver	3-12	SCLD001A
SN74HCT541DW	Octal Buffer/Line Driver	3-12	SCLD001A
SN74HCT541N	Octal Buffer/Line Driver	3-12	SCLD001A
SN74HCT563DW	Octal D-Type Latch	3-21	SCLD001A
SN74HCT563N	Octal D-Type Latch	3-21	SCLD001A
SN74HCT564DW	Octal D-Type Flip-Flop	3-19	SCLD001A
SN74HCT564N	Octal D-Type Flip-Flop	3-19	SCLD001A
SN74HCT573DW	Octal D-Type Latch	3-21	SCLD001A
SN74HCT573N	Octal D-Type Latch	3-21	SCLD001A
SN74HCT574DW	Octal D-Type Flip-Flop	3-18	SCLD001A
SN74HCT574N	Octal D-Type Flip-Flop	3-18	SCLD001A
SN74HCT620DW	Octal Bus Transceiver	3-13	SCLD001A
SN74HCT620N	Octal Bus Transceiver	3-13	SCLD001A
SN74HCT623DW	Octal Bus Transceiver	3-15	SCLD001A
SN74HCT623N	Octal Bus Transceiver	3-15	SCLD001A

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74HCT640DW	Octal Bus Transceiver	3-13	SCLD001A
SN74HCT640N	Octal Bus Transceiver	3-13	SCLD001A
SN74HCT643DW	Octal Bus Transceiver	3-14	SCLD001A
SN74HCT643N	Octal Bus Transceiver	3-14	SCLD001A
SN74HCT645DW	Octal Bus Transceiver	3-15	SCLD001A
SN74HCT645N	Octal Bus Transceiver	3-15	SCLD001A
SN74HCT646DW	Octal Bus Transceiver and Register	3-14	SCLD001A
SN74HCT646NT	Octal Bus Transceiver and Register	3-14	SCLD001A
SN74HCT648DW	Octal Bus Transceiver and Register	3-14	SCLD001A
SN74HCT648NT	Octal Bus Transceiver and Register	3-14	SCLD001A
SN74HCT651DW	Octal Bus Transceiver and Register	3-14	SCLD001A
SN74HCT651NT	Octal Bus Transceiver and Register	3-14	SCLD001A
SN74HCT652DW	Octal Bus Transceiver and Register	3-14	SCLD001A
SN74HCT652NT	Octal Bus Transceiver and Register	3-14	SCLD001A
SN74HCT658DW	Octal Bus Transceiver with Parity	3-14	SCLD001A
SN74HCT658NT	Octal Bus Transceiver with Parity	3-14	SCLD001A
SN74HCT659DW	Octal Bus Transceiver with Parity	3-14	SCLD001A
SN74HCT659NT	Octal Bus Transceiver with Parity	3-14	SCLD001A
SN74HCT664DW	Octal Bus Transceiver with Parity	3-14	SCLD001A
SN74HCT664NT	Octal Bus Transceiver with Parity	3-14	SCLD001A
SN74HCT665DW	Octal Bus Transceiver with Parity	3-14	SCLD001A
SN74HCT665NT	Octal Bus Transceiver with Parity	3-14	SCLD001A
SN74HCU04D	Hex Inverter	3-9	SCLD001A
SN74HCU04N	Hex Inverter	3-9	SCLD001A
SN74HC00D	Quad 2-Input NAND Gate	3-4	SCLD001A
SN74HC00N	Quad 2-Input NAND Gate	3-4	SCLD001A
SN74HC01D	Quad 2-Input NAND Gate O.D.	3-5	SCLD001A
SN74HC01N	Quad 2-Input NAND Gate O.D.	3-5	SCLD001A
SN74HC02D	Quad 2-Input NOR Gate	3-6	SCLD001A
SN74HC02N	Quad 2-Input NOR Gate	3-6	SCLD001A
SN74HC03D	Quad 2-Input NAND Gate O.D.	3-5	SCLD001A
SN74HC03N	Quad 2-Input NAND Gate O.D.	3-5	SCLD001A
SN74HC04D	Hex Inverter	3-9	SCLD001A
SN74HC04N	Hex Inverter	3-9	SCLD001A
SN74HC05D	Hex Inverter O.D.	3-9	SCLD001A
SN74HC05N	Hex Inverter O.D.	3-9	SCLD001A
SN74HC08D	Quad 2-Input AND Gate	3-5	SCLD001A
SN74HC08N	Quad 2-Input AND Gate	3-5	SCLD001A
SN74HC09D	Quad 2-Input AND Gate O.D.	3-5	SCLD001A
SN74HC09N	Quad 2-Input AND Gate O.D.	3-5	SCLD001A
SN74HC10D	Triple 3-Input NAND Gate	3-4	SCLD001A
SN74HC10N	Triple 3-Input NAND Gate	3-4	SCLD001A
SN74HC11D	Triple 3-Input AND Gate	3-5	SCLD001A
SN74HC11N	Triple 3-Input AND Gate	3-5	SCLD001A
SN74HC14D	Hex Schmitt-Trigger Inverter	3-9	SCLD001A
SN74HC14N	Hex Schmitt-Trigger Inverter	3-9	SCLD001A
SN74HC20D	Dual 4-Input NAND Gate	3-4	SCLD001A
SN74HC20N	Dual 4-Input NAND Gate	3-4	SCLD001A
SN74HC21D	Dual 4-Input AND Gate	3-5	SCLD001A
SN74HC21N	Dual 4-Input AND Gate	3-5	SCLD001A
SN74HC27D	Triple 3-Input NOR Gate	3-6	SCLD001A
SN74HC27N	Triple 3-Input NOR Gate	3-6	SCLD001A
SN74HC30D	8-Input NAND Gate	3-4	SCLD001A
SN74HC30N	8-Input NAND Gate	3-4	SCLD001A
SN74HC32D	Quad 2-Input OR Gate	3-6	SCLD001A
SN74HC32N	Quad 2-Input OR Gate	3-6	SCLD001A
SN74HC36D	Quad 2-Input NOR Gate	3-6	SCLD001A
SN74HC36N	Quad 2-Input NOR Gate	3-6	SCLD001A
SN74HC42DW	4-of-10 Decoder	3-30	SCLD001A
SN74HC42N	4-of-10 Decoder	3-30	SCLD001A

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74HC51D	Dual AND-OR Invert Gate	3-7	SCLD001A
SN74HC51N	Dual AND-OR Invert Gate	3-7	SCLD001A
SN74HC73D	Dual J-K Flip-Flop	3-17	SCLD001A
SN74HC73N	Dual J-K Flip-Flop	3-17	SCLD001A
SN74HC74D	Dual D-Type Flip-Flop	3-17	SCLD001A
SN74HC74N	Dual D-Type Flip-Flop	3-17	SCLD001A
SN74HC75D	4-Bit Bistable Latch	3-20	SCLD001A
SN74HC75N	4-Bit Bistable Latch	3-20	SCLD001A
SN74HC76D	Dual J-K Flip-Flop	3-17	SCLD001A
SN74HC76N	Dual J-K Flip-Flop	3-17	SCLD001A
SN74HC78D	Dual J-K Flip-Flop	3-17	SCLD001A
SN74HC78N	Dual J-K Flip-Flop	3-17	SCLD001A
SN74HC85ADW	4-Bit Magnitude Comparator	3-32	SCLD001A
SN74HC85AN	4-Bit Magnitude Comparator	3-32	SCLD001A
SN74HC86D	Quad 2-Input Exclusive-OR Gate	3-7	SCLD001A
SN74HC86N	Quad 2-Input Exclusive-OR Gate	3-7	SCLD001A
SN74HC107D	Dual J-K Flip-Flop	3-17	SCLD001A
SN74HC107N	Dual J-K Flip-Flop	3-17	SCLD001A
SN74HC109D	Dual J-K Flip-Flop	3-17	SCLD001A
SN74HC109N	Dual J-K Flip-Flop	3-17	SCLD001A
SN74HC112D	Dual J-K Flip-Flop	3-17	SCLD001A
SN74HC112N	Dual J-K Flip-Flop	3-17	SCLD001A
SN74HC113D	Dual J-K Flip-Flop	3-17	SCLD001A
SN74HC113N	Dual J-K Flip-Flop	3-17	SCLD001A
SN74HC114D	Dual J-K Flip-Flop	3-17	SCLD001A
SN74HC114N	Dual J-K Flip-Flop	3-17	SCLD001A
SN74HC125N	Quad 3-State Buffer	3-12	SCLD001A
SN74HC126N	Quad 3-State Buffer	3-12	SCLD001A
SN74HC132D	Quad 2-Input NAND Schmitt-Trigger	3-4	SCLD001A
SN74HC132N	Quad 2-Input NAND Schmitt-Trigger	3-4	SCLD001A
SN74HC133D	13-Input NAND Gate	3-4	SCLD001A
SN74HC133N	13-Input NAND Gate	3-4	SCLD001A
SN74HC137DW	3-8 Line Decoder/Demultiplexer	3-30	SCLD001A
SN74HC137N	3-8 Line Decoder/Demultiplexer	3-30	SCLD001A
SN74HC138D	3-8 Line Decoder/Demultiplexer	3-30	SCLD001A
SN74HC138N	3-8 Line Decoder/Demultiplexer	3-30	SCLD001A
SN74HC139DW	Dual 2-4 Line Decoder/Demultiplexer	3-30	SCLD001A
SN74HC139N	Dual 2-4 Line Decoder/Demultiplexer	3-30	SCLD001A
SN74HC147DW	10-to-4 Line Encoder	3-29	SCLD001A
SN74HC147N	10-to-4 Line Encoder	3-29	SCLD001A
SN74HC148DW	8-to-3 Line Encoder	3-29	SCLD001A
SN74HC148N	8-to-3 Line Encoder	3-29	SCLD001A
SN74HC151D	8-1 Data Selector/Multiplexer	3-29	SCLD001A
SN74HC151N	8-1 Data Selector/Multiplexer	3-29	SCLD001A
SN74HC152D	8-1 Data Selector/Multiplexer	3-29	SCLD001A
SN74HC152N	8-1 Data Selector/Multiplexer	3-29	SCLD001A
SN74HC153DW	Dual 4-1 Data Selector/Multiplexer	3-28	SCLD001A
SN74HC153N	Dual 4-1 Data Selector/Multiplexer	3-28	SCLD001A
SN74HC154DW	4-16 Line Decoder/Demultiplexer	3-30	SCLD001A
SN74HC154NT	4-16 Line Decoder/Demultiplexer	3-30	SCLD001A
SN74HC157DW	Quad 2-1 Data Selector/Multiplexer	3-28	SCLD001A
SN74HC157N	Quad 2-1 Data Selector/Multiplexer	3-28	SCLD001A
SN74HC158DW	Quad 2-1 Data Selector/Multiplexer	3-28	SCLD001A
SN74HC158N	Quad 2-1 Data Selector/Multiplexer	3-28	SCLD001A
SN74HC160D	4-Bit Synchronous Decade Counter	3-25	SCLD001A
SN74HC160N	4-Bit Synchronous Decade Counter	3-25	SCLD001A
SN74HC161D	4-Bit Synchronous Binary Counter	3-25	SCLD001A
SN74HC161N	4-Bit Synchronous Binary Counter	3-25	SCLD001A
SN74HC162D	4-Bit Synchronous Decade Counter	3-25	SCLD001A
SN74HC162N	4-Bit Synchronous Decade Counter	3-25	SCLD001A

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74HC163D	4-Bit Synchronous Binary Counter	3-25	SCLD001A
SN74HC163N	4-Bit Synchronous Binary Counter	3-25	SCLD001A
SN74HC164N	8-Bit Shift Register	3-22	SCLD001A
SN74HC165D	8-Bit Shift Register	3-22	SCLD001A
SN74HC165N	8-Bit Shift Register	3-22	SCLD001A
SN74HC166D	8-Bit Shift Register	3-22	SCLD001A
SN74HC166N	8-Bit Shift Register	3-22	SCLD001A
SN74HC173D	4-Bit D-Type Register	3-24	SCLD001A
SN74HC173N	4-Bit D-Type Register	3-24	SCLD001A
SN74HC174D	Hex D-Type Flip-Flop	3-18	SCLD001A
SN74HC174N	Hex D-Type Flip-Flop	3-18	SCLD001A
SN74HC175D	Quad D-Type Flip-Flop	3-18	SCLD001A
SN74HC175N	Quad D-Type Flip-Flop	3-18	SCLD001A
SN74HC180D	9-Bit Odd/Even Parity Generator	3-32	SCLD001A
SN74HC180N	9-Bit Odd/Even Parity Generator	3-32	SCLD001A
SN74HC190DW	Synchronous Up/Down Decade Counter	3-25	SCLD001A
SN74HC190N	Synchronous Up/Down Decade Counter	3-25	SCLD001A
SN74HC191DW	Synchronous Up/Down Binary Counter	3-26	SCLD001A
SN74HC191N	Synchronous Up/Down Binary Counter	3-26	SCLD001A
SN74HC192DW	Synchronous Up/Down Decade Counter	3-25	SCLD001A
SN74HC192N	Synchronous Up/Down Decade Counter	3-25	SCLD001A
SN74HC193DW	Synchronous Up/Down Binary Counter	3-26	SCLD001A
SN74HC193N	Synchronous Up/Down Binary Counter	3-26	SCLD001A
SN74HC194DW	4-Bit Universal Shift Register	3-22	SCLD001A
SN74HC194N	4-Bit Universal Shift Register	3-22	SCLD001A
SN74HC195DW	4-Bit Shift Register	3-22	SCLD001A
SN74HC195N	4-Bit Shift Register	3-22	SCLD001A
SN74HC237DW	3-8 Line Decoder/Demultiplexer	3-30	SCLD001A
SN74HC237N	3-8 Line Decoder/Demultiplexer	3-30	SCLD001A
SN74HC238DW	3-8 Line Decoder/Demultiplexer	3-30	SCLD001A
SN74HC238N	3-8 Line Decoder/Demultiplexer	3-30	SCLD001A
SN74HC239DW	Dual 2-4 Decoder	3-30	SCLD001A
SN74HC239N	Dual 2-4 Decoder	3-30	SCLD001A
SN74HC240DW	Octal Buffer/Line Driver	3-12	SCLD001A
SN74HC240N	Octal Buffer/Line Driver	3-12	SCLD001A
SN74HC241DW	Octal Buffer/Line Driver	3-12	SCLD001A
SN74HC241N	Octal Buffer/Line Driver	3-12	SCLD001A
SN74HC242N	Quad Bus Transceiver	3-13	SCLD001A
SN74HC243N	Quad Bus Transceiver	3-13	SCLD001A
SN74HC244DW	Octal Buffer/Line Driver	3-12	SCLD001A
SN74HC244N	Octal Buffer/Line Driver	3-12	SCLD001A
SN74HC245DW	Octal Bus Transceiver	3-13	SCLD001A
SN74HC245N	Octal Bus Transceiver	3-13	SCLD001A
SN74HC251D	Data Selector/Multiplexer	3-29	SCLD001A
SN74HC251N	Data Selector/Multiplexer	3-29	SCLD001A
SN74HC253DW	Dual 4-1 Data Selector/Multiplexer	3-28	SCLD001A
SN74HC253N	Dual 4-1 Data Selector/Multiplexer	3-28	SCLD001A
SN74HC257DW	Quad 2-1 Data Selector/Multiplexer	3-28	SCLD001A
SN74HC257N	Quad 2-1 Data Selector/Multiplexer	3-28	SCLD001A
SN74HC258DW	Quad 2-1 Data Selector/Multiplexer	3-28	SCLD001A
SN74HC258N	Quad 2-1 Data Selector/Multiplexer	3-28	SCLD001A
SN74HC259D	8-Bit Addressable Latch	3-21	SCLD001A
SN74HC259N	8-Bit Addressable Latch	3-21	SCLD001A
SN74HC266D	Quad 2-Input Exclusive NOR Gate	3-7	SCLD001A
SN74HC266N	Quad 2-Input Exclusive NOR Gate	3-7	SCLD001A
SN74HC273DW	Octal D-Type Flip-Flop	3-18	SCLD001A
SN74HC273N	Octal D-Type Flip-Flop	3-18	SCLD001A
SN74HC280D	9-Bit Parity Generator/Checker	3-33	SCLD001A
SN74HC280N	9-Bit Parity Generator/Checker	3-33	SCLD001A
SN74HC283D	4-Bit Full Adder	3-34	SCLD001A

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74HC283N	4-Bit Full Adder	3-34	SCLD001A
SN74HC298DW	Quad 2-Input Multiplexer	3-28	SCLD001A
SN74HC298N	Quad 2-Input Multiplexer	3-28	SCLD001A
SN74HC299DW	8-Bit Shift Register	3-22	SCLD001A
SN74HC299N	8-Bit Shift Register	3-22	SCLD001A
SN74HC352DW	Dual 4-1 Selector/Multiplexer	3-28	SCLD001A
SN74HC352N	Dual 4-1 Selector/Multiplexer	3-28	SCLD001A
SN74HC353DW	Dual 4-1 Selector/Multiplexer	3-28	SCLD001A
SN74HC353N	Dual 4-1 Selector/Multiplexer	3-28	SCLD001A
SN74HC356DW	8-1 Selector/Multiplexer Register	3-24	SCLD001A
SN74HC356N	8-1 Selector/Multiplexer Register	3-24	SCLD001A
SN74HC373DW	Octal D-Type Latch	3-21	SCLD001A
SN74HC373N	Octal D-Type Latch	3-21	SCLD001A
SN74HC374DW	Octal D-Type Flip-Flop	3-18	SCLD001A
SN74HC374N	Octal D-Type Flip-Flop	3-18	SCLD001A
SN74HC375D	4-Bit Bistable Latch	3-20	SCLD001A
SN74HC375N	4-Bit Bistable Latch	3-20	SCLD001A
SN74HC377DW	Octal D-Type Flip-Flop	3-18	SCLD001A
SN74HC377N	Octal D-Type Flip-Flop	3-18	SCLD001A
SN74HC378D	Hex D-Type Flip-Flops	3-18	SCLD001A
SN74HC378N	Hex D-Type Flip-Flops	3-18	SCLD001A
SN74HC379D	Quad D-Type Flip-Flop	3-18	SCLD001A
SN74HC379N	Quad D-Type Flip-Flop	3-18	SCLD001A
SN74HC386D	Quad 2-Input Exclusive OR Gate	3-7	SCLD001A
SN74HC386N	Quad 2-Input Exclusive OR Gate	3-7	SCLD001A
SN74HC390DW	4-Bit Decade/Binary Counter	3-26	SCLD001A
SN74HC390N	4-Bit Decade/Binary Counter	3-26	SCLD001A
SN74HC393N	4-Bit Decade/Binary Counter	3-26	SCLD001A
SN74HC490DW	Dual 4-Bit Decade Counter	3-26	SCLD001A
SN74HC490N	Dual 4-Bit Decade Counter	3-26	SCLD001A
SN74HC533DW	Octal D-Type Latch	3-21	SCLD001A
SN74HC533N	Octal D-Type Latch	3-21	SCLD001A
SN74HC534DW	Octal D-Type Flip-Flop	3-19	SCLD001A
SN74HC534N	Octal D-Type Flip-Flop	3-19	SCLD001A
SN74HC540DW	Octal Buffer/Line Driver	3-12	SCLD001A
SN74HC540N	Octal Buffer/Line Driver	3-12	SCLD001A
SN74HC541DW	Octal Buffer/Line Driver	3-12	SCLD001A
SN74HC541N	Octal Buffer/Line Driver	3-12	SCLD001A
SN74HC563DW	Octal D-Type Latch	3-21	SCLD001A
SN74HC563N	Octal D-Type Latch	3-21	SCLD001A
SN74HC564DW	Octal D-Type Flip-Flop	3-19	SCLD001A
SN74HC564N	Octal D-Type Flip-Flop	3-19	SCLD001A
SN74HC573DW	Octal D-Type Latch	3-21	SCLD001A
SN74HC573N	Octal D-Type Latch	3-21	SCLD001A
SN74HC574DW	Octal D-Type Flip-Flop	3-18	SCLD001A
SN74HC574N	Octal D-Type Flip-Flop	3-18	SCLD001A
SN74HC590DW	Binary Counter With Output Register	3-27	SCLD001A
SN74HC590N	Binary Counter With Output Register	3-27	SCLD001A
SN74HC594D	Shift Register With Output Register	3-23	SCLD001A
SN74HC594N	Shift Register with Output Register	3-23	SCLD001A
SN74HC595DW	Shift Register with Output Register	3-23	SCLD001A
SN74HC595N	Shift Register with Output Register	3-23	SCLD001A
SN74HC604N	Octal 2-Input Multiplexed Latch	3-28	SCLD001A
SN74HC620DW	Octal Bus Transceiver	3-13	SCLD001A
SN74HC620N	Octal Bus Transceiver	3-13	SCLD001A
SN74HC623DW	Octal Bus Transceiver	3-15	SCLD001A
SN74HC623N	Octal Bus Transceiver	3-15	SCLD001A
SN74HC640DW	Octal Bus Transceiver	3-13	SCLD001A
SN74HC640N	Octal Bus Transceiver	3-13	SCLD001A
SN74HC643DW	Octal Bus Transceiver	3-14	SCLD001A

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74HC643N	Octal Bus Transceiver	3-14	SCLD001A
SN74HC645DW	Octal Bus Transceiver	3-15	SCLD001A
SN74HC645N	Octal Bus Transceiver	3-15	SCLD001A
SN74HC646DW	Octal Bus Transceiver and Register	3-14	SCLD001A
SN74HC646NT	Octal Bus Transceiver and Register	3-14	SCLD001A
SN74HC648DW	Octal Bus Transceiver and Register	3-14	SCLD001A
SN74HC648NT	Octal Bus Transceiver and Register	3-14	SCLD001A
SN74HC651DW	Octal Bus Transceiver and Register	3-14	SCLD001A
SN74HC651NT	Octal Bus Transceiver and Register	3-14	SCLD001A
SN74HC652DW	Octal Bus Transceiver and Register	3-14	SCLD001A
SN74HC652NT	Octal Bus Transceiver and Register	3-14	SCLD001A
SN74HC658DW	Octal Bus Transceiver with Parity	3-14	SCLD001A
SN74HC658NT	Octal Bus Transceiver with Parity	3-14	SCLD001A
SN74HC659DW	Octal Bus Transceiver with Parity	3-14	SCLD001A
SN74HC659NT	Octal Bus Transceiver with Parity	3-14	SCLD001A
SN74HC664DW	Octal Bus Transceiver with Parity	3-14	SCLD001A
SN74HC664NT	Octal Bus Transceiver with Parity	3-14	SCLD001A
SN74HC665DW	Octal Bus Transceiver with Parity	3-14	SCLD001A
SN74HC665NT	Octal Bus Transceiver with Parity	3-14	SCLD001A
SN74HC677DW	16-Bit Address Comparator	3-33	SCLD001A
SN74HC677NT	16-Bit Address Comparator	3-33	SCLD001A
SN74HC678DW	16-Bit Address Comparator	3-33	SCLD001A
SN74HC678NT	16-Bit Address Comparator	3-33	SCLD001A
SN74HC679DW	12-Bit Address Comparator	3-33	SCLD001A
SN74HC679N	12-Bit Address Comparator	3-33	SCLD001A
SN74HC680DW	12-Bit Address Comparator	3-33	SCLD001A
SN74HC680N	12-Bit Address Comparator	3-33	SCLD001A
SN74HC682DW	8-Bit Magnitude Comparator	3-32	SCLD001A
SN74HC682N	8-Bit Magnitude Comparator	3-32	SCLD001A
SN74HC684DW	8-Bit Magnitude Comparator	3-32	SCLD001A
SN74HC684N	8-Bit Magnitude Comparator	3-32	SCLD001A
SN74HC688DW	8-Bit Magnitude Comparator	3-32	SCLD001A
SN74HC688N	8-Bit Magnitude Comparator	3-32	SCLD001A
SN74HC804DW	Hex 2-Input NAND Driver	3-4	SCLD001A
SN74HC804N	Hex 2-Input NAND Driver	3-4	SCLD001A
SN74HC805DW	Hex 2-Input NOR Driver	3-6	SCLD001A
SN74HC805N	Hex 2-Input NOR Driver	3-6	SCLD001A
SN74HC808DW	Hex 2-Input AND Driver	3-10	SCLD001A
SN74HC808N	Hex 2-Input AND Driver	3-10	SCLD001A
SN74HC832DW	Hex 2-Input OR Driver	3-6	SCLD001A
SN74HC832N	Hex 2-Input OR Driver	3-6	SCLD001A
SN74HC4002D	Dual 4-Input NOR Gate	3-6	SCLD001A
SN74HC4002N	Dual 4-Input NOR Gate	3-6	SCLD001A
SN74HC4017DW	Decade Counter/Divider	3-26	SCLD001A
SN74HC4017N	Decade Counter/Divider	3-26	SCLD001A
SN74HC4020DW	14-Stage Binary Counter	3-26	SCLD001A
SN74HC4020N	14-Stage Binary Counter	3-26	SCLD001A
SN74HC4024D	7-Bit Binary Counter	3-26	SCLD001A
SN74HC4024N	7-Bit Binary Counter	3-26	SCLD001A
SN74HC4040DW	12-Bit Binary Counter	3-26	SCLD001A
SN74HC4040N	12-Bit Binary Counter	3-26	SCLD001A
SN74HC4060DW	Asynchronous Binary Counter/Oscillator	3-26	SCLD001A
SN74HC4060N	Asynchronous Binary Counter/Oscillator	3-26	SCLD001A
SN74HC4061DW	Asynchronous Binary Counter/Oscillator	3-26	SCLD001A
SN74HC4061N	Asynchronous Binary Counter/Oscillator	3-26	SCLD001A
SN74HC4075D	Triple 3-Input OR Gate	3-6	SCLD001A
SN74HC4075N	Triple 3-Input OR Gate	3-6	SCLD001A
SN74HC4078AD	8-Input OR/NOR Gate	3-7	SCLD001A
SN74HC4078AN	8-Input OR/NOR Gate	3-7	SCLD001A
SN74HC4514DW	4-to-16 Line Decoder/Latch	3-30	SCLD001A

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74HC4514NT	4-to-16 Line Decoder/Latch	3-30	SCLD001A
SN74HC4515DW	4-to-16 Line Decoder/Latch	3-30	SCLD001A
SN74HC4515NT	4-to-16 Line Decoder/Latch	3-30	SCLD001A
SN74HC4724DW	8-Bit Addressable Latch	3-21	SCLD001A
SN74HC4724N	8-Bit Addressable Latch	3-21	SCLD001A
SN74HC7001D	Quad AND Gate	3-5	SCLD001A
SN74HC7001N	Quad AND Gate	3-5	SCLD001A
SN74HC7002D	Quad NOR Gate	3-6	SCLD001A
SN74HC7002N	Quad NOR Gate	3-6	SCLD001A
SN74HC7006DW	6-Section Multifunction Circuit	3-8	SCLD001A
SN74HC7006NT	6-Section Multifunction Circuit	3-8	SCLD001A
SN74HC7008DW	6-Section Multifunction Circuit	3-8	SCLD001A
SN74HC7008NT	6-Section Multifunction Circuit	3-8	SCLD001A
SN74HC7022DW	Octal Counter/Divider	3-26	SCLD001A
SN74HC7022N	Octal Counter/Divider	3-26	SCLD001A
SN74HC7032D	Quad OR Gate	3-6	SCLD001A
SN74HC7032N	Quad OR Gate	3-6	SCLD001A
SN74HC7074DW	6-Section Multifunction Circuit	3-17	SCLD001A
SN74HC7074NT	6-Section Multifunction Circuit	3-17	SCLD001A
SN74HC7075DW	6-Section Multifunction Circuit	3-17	SCLD001A
SN74HC7075NT	6-Section Multifunction Circuit	3-17	SCLD001A
SN74HC7076DW	6-Section Multifunction Circuit	3-17	SCLD001A
SN74HC7076NT	6-Section Multifunction Circuit	3-17	SCLD001A
SN74HC7266D	Quad 2-Input Exclusive NOR Gate	3-7	SCLD001A
SN74HC7266N	Quad 2-Input Exclusive NOR Gate	3-7	SCLD001A
SN74LS00D	Quad 2-Input NAND Gate	3-4	SDLD001
SN74LS00FN	Quad 2-Input NAND Gate	3-4	SDLD001
SN74LS00N	Quad 2-Input NAND Gate	3-4	SDLD001
SN74LS01D	Quad 2-Input NAND Gate OC	3-5	SDLD001
SN74LS01FN	Quad 2-Input NAND Gate OC	3-5	SDLD001
SN74LS01N	Quad 2-Input NAND Gate OC	3-5	SDLD001
SN74LS02D	Quad 2-Input NOR Gate	3-6	SDLD001
SN74LS02FN	Quad 2-Input NOR Gate	3-6	SDLD001
SN74LS02N	Quad 2-Input NOR Gate	3-6	SDLD001
SN74LS03D	Quad 2-Input NAND Gate OC	3-5	SDLD001
SN74LS03FN	Quad 2-Input NAND Gate OC	3-5	SDLD001
SN74LS03N	Quad 2-Input NAND Gate OC	3-5	SDLD001
SN74LS04D	Hex Inverter	3-9	SDLD001
SN74LS04FN	Hex Inverter	3-9	SDLD001
SN74LS04N	Hex Inverter	3-9	SDLD001
SN74LS05D	Hex Inverter OC	3-9	SDLD001
SN74LS05FN	Hex Inverter OC	3-9	SDLD001
SN74LS05N	Hex Inverter OC	3-9	SDLD001
SN74LS08D	Quad 2-Input AND Gate	3-5	SDLD001
SN74LS08FN	Quad 2-Input AND Gate	3-5	SDLD001
SN74LS08N	Quad 2-Input AND Gate	3-5	SDLD001
SN74LS09D	Quad 2-Input AND Gate OC	3-5	SDLD001
SN74LS09FN	Quad 2-Input AND Gate OC	3-5	SDLD001
SN74LS09N	Quad 2-Input AND Gate OC	3-5	SDLD001
SN74LS10D	Triple 3-Input NAND Gate	3-4	SDLD001
SN74LS10FN	Triple 3-Input NAND Gate	3-4	SDLD001
SN74LS10N	Triple 3-Input NAND Gate	3-4	SDLD001
SN74LS11D	Triple 3-Input AND Gate	3-5	SDLD001
SN74LS11FN	Triple 3-Input AND Gate	3-5	SDLD001
SN74LS11N	Triple 3-Input AND Gate	3-5	SDLD001
SN74LS12D	Triple 3-Input NAND Gate OC	3-5	SDLD001
SN74LS12FN	Triple 3-Input NAND Gate OC	3-5	SDLD001
SN74LS12N	Triple 3-Input NAND Gate OC	3-5	SDLD001
SN74LS13D	Dual 4-Input NAND Schmitt-Trigger	3-4	SDLD001
SN74LS13FN	Dual 4-Input NAND Schmitt-Trigger	3-4	SDLD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74LS13N	Dual 4-Input NAND Schmitt-Trigger	3-4	SDLD001
SN74LS14D	Hex Schmitt-Trigger Inverter	3-9	SDLD001
SN74LS14FN	Hex Schmitt-Trigger Inverter	3-9	SDLD001
SN74LS14N	Hex Schmitt-Trigger Inverter	3-9	SDLD001
SN74LS15D	Triple 3-Input AND Gate OC	3-5	SDLD001
SN74LS15FN	Triple 3-Input AND Gate OC	3-5	SDLD001
SN74LS15N	Triple 3-Input AND Gate OC	3-5	SDLD001
SN74LS19AD	Hex Schmitt-Trigger Inverter	3-9	SDLD001
SN74LS19AFN	Hex Schmitt-Trigger Inverter	3-9	SDLD001
SN74LS19AN	Hex Schmitt-Trigger Inverter	3-9	SDLD001
SN74LS20D	Dual 4-Input NAND Gate	3-4	SDLD001
SN74LS20FN	Dual 4-Input NAND Gate	3-4	SDLD001
SN74LS20N	Dual 4-Input NAND Gate	3-4	SDLD001
SN74LS21D	Dual 4-Input AND Gate	3-5	SDLD001
SN74LS21FN	Dual 4-Input AND Gate	3-5	SDLD001
SN74LS21N	Dual 4-Input AND Gate	3-5	SDLD001
SN74LS26D	Quad 2-Input NAND Gate	3-4	SDLD001
SN74LS26FN	Quad 2-Input NAND Gate	3-4	SDLD001
SN74LS26N	Quad 2-Input NAND Gate	3-4	SDLD001
SN74LS27D	Triple 3-Input NOR Gate	3-6	SDLD001
SN74LS27FN	Triple 3-Input NOR Gate	3-6	SDLD001
SN74LS27N	Triple 3-Input NOR Gate	3-6	SDLD001
SN74LS28D	Quad 2-Input NOR Buffer	3-6	SDLD001
SN74LS28FN	Quad 2-Input NOR Buffer	3-6	SDLD001
SN74LS28N	Quad 2-Input NOR Buffer	3-6	SDLD001
SN74LS30D	8-Input NAND Gate	3-4	SDLD001
SN74LS30FN	8-Input NAND Gate	3-4	SDLD001
SN74LS30N	8-Input NAND Gate	3-4	SDLD001
SN74LS31D	Delay Element	3-8	SDLD001
SN74LS31FN	Delay Element	3-8	SDLD001
SN74LS31N	Delay Element	3-8	SDLD001
SN74LS32D	Quad 2-Input OR Gate	3-6	SDLD001
SN74LS32FN	Quad 2-Input OR Gate	3-6	SDLD001
SN74LS32N	Quad 2-Input OR Gate	3-6	SDLD001
SN74LS33D	Quad 2-Input NOR Buffer OC	3-6	SDLD001
SN74LS33FN	Quad 2-Input NOR Buffer OC	3-6	SDLD001
SN74LS33N	Quad 2-Input NOR Buffer OC	3-6	SDLD001
SN74LS37D	Quad 2-Input NAND Buffer	3-4	SDLD001
SN74LS37FN	Quad 2-Input NAND Buffer	3-4	SDLD001
SN74LS37N	Quad 2-Input NAND Buffer	3-4	SDLD001
SN74LS38D	Quad 2-Input NAND Buffer OC	3-4	SDLD001
SN74LS38FN	Quad 2-Input NAND Buffer OC	3-4	SDLD001
SN74LS38N	Quad 2-Input NAND Buffer OC	3-4	SDLD001
SN74LS40D	Dual 4-Input NAND Buffer	3-4	SDLD001
SN74LS40FN	Dual 4-Input NAND Buffer	3-4	SDLD001
SN74LS40N	Dual 4-Input NAND Buffer	3-4	SDLD001
SN74LS42D	BCD-to-Decimal Decoder	3-30	SDLD001
SN74LS42FN	BCD-to-Decimal Decoder	3-30	SDLD001
SN74LS42N	BCD-to-Decimal Decoder	3-30	SDLD001
SN74LS47D	BCD-7-Segment Decoder/Driver	3-33	SDLD001
SN74LS47FN	BCD-7-Segment Decoder/Driver	3-33	SDLD001
SN74LS47N	BCD-7-Segment Decoder/Driver	3-33	SDLD001
SN74LS51D	Dual AND-OR-Invert Gate	3-7	SDLD001
SN74LS51FN	Dual AND-OR-Invert Gate	3-7	SDLD001
SN74LS51N	Dual AND-OR-Invert Gate	3-7	SDLD001
SN74LS54D	AND-OR-Invert Gate	3-7	SDLD001
SN74LS54FN	AND-OR-Invert Gate	3-7	SDLD001
SN74LS54N	AND-OR-Invert Gate	3-7	SDLD001
SN74LS55D	AND-OR-Invert Gate	3-7	SDLD001
SN74LS55FN	AND-OR-Invert Gate	3-7	SDLD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74LS55N	AND-OR-Invert Gate	3-7	SDLD001
SN74LS73AD	Dual J-K Flip-Flop	3-17	SDLD001
SN74LS73AN	Dual J-K Flip-Flop	3-17	SDLD001
SN74LS74AD	Dual D-Type Flip-Flop	3-17	SDLD001
SN74LS74AFN	Dual D-Type Flip-Flop	3-17	SDLD001
SN74LS74AN	Dual D-Type Flip-Flop	3-17	SDLD001
SN74LS75D	4-Bit Latch	3-20	SDLD001
SN74LS75FN	4-Bit Latch	3-20	SDLD001
SN74LS75N	4-Bit Latch	3-20	SDLD001
SN74LS76AD	Dual J-K Flip-Flop	3-17	SDLD001
SN74LS76AFN	Dual J-K Flip-Flop	3-17	SDLD001
SN74LS76AN	Dual J-K Flip-Flop	3-17	SDLD001
SN74LS78AD	Dual J-K Flip-Flop	3-17	SDLD001
SN74LS78AFN	Dual J-K Flip-Flop	3-17	SDLD001
SN74LS78AN	Dual J-K Flip-Flop	3-17	SDLD001
SN74LS83AD	4-Bit Binary Adder	3-34	SDLD001
SN74LS83AN	4-Bit Binary Adder	3-34	SDLD001
SN74LS85D	4-Bit Magnitude Comparator	3-32	SDLD001
SN74LS85FN	4-Bit Magnitude Comparator	3-32	SDLD001
SN74LS85N	4-Bit Magnitude Comparator	3-32	SDLD001
SN74LS86AD	Quad 2-Input Exclusive OR Gate	3-7	SDLD001
SN74LS86AFN	Quad 2-Input Exclusive OR Gate	3-7	SDLD001
SN74LS86AN	Quad 2-Input Exclusive OR Gate	3-7	SDLD001
SN74LS90D	Decade Counter	3-26	SDLD001
SN74LS90FN	Decade Counter	3-26	SDLD001
SN74LS90N	Decade Counter	3-26	SDLD001
SN74LS91D	8-Bit Shift Register	3-22	SDLD001
SN74LS91FN	8-Bit Shift Register	3-22	SDLD001
SN74LS91N	8-Bit Shift Register	3-22	SDLD001
SN74LS92D	Divide-by-12 Counter	3-26	SDLD001
SN74LS92FN	Divide-by-12 Counter	3-26	SDLD001
SN74LS92N	Divide-by-12 Counter	3-26	SDLD001
SN74LS93D	4-Bit Binary Counter	3-26	SDLD001
SN74LS93FN	4-Bit Binary Counter	3-26	SDLD001
SN74LS93N	4-Bit Binary Counter	3-26	SDLD001
SN74LS95BD	4-Bit Shift Register	3-22	SDLD001
SN74LS95BFN	4-Bit Shift Register	3-22	SDLD001
SN74LS95BN	4-Bit Shift Register	3-22	SDLD001
SN74LS96D	5-Bit Shift Register	3-22	SDLD001
SN74LS96N	5-Bit Shift Register	3-22	SDLD001
SN74LS107AD	Dual J-K Flip-Flop	3-17	SDLD001
SN74LS107AFN	Dual J-K Flip-Flop	3-17	SDLD001
SN74LS107AN	Dual J-K Flip-Flop	3-17	SDLD001
SN74LS109AD	Dual J-K Flip-Flop	3-17	SDLD001
SN74LS109AFN	Dual J-K Flip-Flop	3-17	SDLD001
SN74LS109AN	Dual J-K Flip-Flop	3-17	SDLD001
SN74LS112AD	Dual J-K Flip-Flop	3-17	SDLD001
SN74LS112AFN	Dual J-K Flip-Flop	3-17	SDLD001
SN74LS112AN	Dual J-K Flip-Flop	3-17	SDLD001
SN74LS113AD	Dual J-K Flip-Flop	3-17	SDLD001
SN74LS113AFN	Dual J-K Flip-Flop	3-17	SDLD001
SN74LS113AN	Dual J-K Flip-Flop	3-17	SDLD001
SN74LS114AD	Dual J-K Flip-Flop	3-17	SDLD001
SN74LS114AFN	Dual J-K Flip-Flop	3-17	SDLD001
SN74LS114AN	Dual J-K Flip-Flop	3-17	SDLD001
SN74LS122D	One Shot Multivibrator	3-20	SDLD001
SN74LS122FN	One Shot Multivibrator	3-20	SDLD001
SN74LS122N	One Shot Multivibrator	3-20	SDLD001
SN74LS123D	Dual Monostable Multivibrator	3-20	SDLD001
SN74LS123FN	Dual Monostable Multivibrator	3-20	SDLD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74LS123N	Dual Monostable Multivibrator	3-20	SDLD001
SN74LS125AD	Quad 3-State Buffer	3-12	SDLD001
SN74LS125AFN	Quad 3-State Buffer	3-12	SDLD001
SN74LS125AN	Quad 3-State Buffer	3-12	SDLD001
SN74LS126AD	Quad 3-State Buffer	3-12	SDLD001
SN74LS126AFN	Quad 3-State Buffer	3-12	SDLD001
SN74LS126AN	Quad 3-State Buffer	3-12	SDLD001
SN74LS132D	Quad 2-Input NAND Schmitt-Trigger	3-4	SDLD001
SN74LS132FN	Quad 2-Input NAND Schmitt-Trigger	3-4	SDLD001
SN74LS132N	Quad 2-Input NAND Schmitt-Trigger	3-4	SDLD001
SN74LS136D	Quad 2-Input Exclusive OR Gate OC	3-7	SDLD001
SN74LS136FN	Quad 2-Input Exclusive OR Gate OC	3-7	SDLD001
SN74LS136N	Quad 2-Input Exclusive OR Gate OC	3-7	SDLD001
SN74LS137D	3-8 Line Decoder/Demultiplexer	3-30	SDLD001
SN74LS137FN	3-8 Line Decoder/Demultiplexer	3-30	SDLD001
SN74LS137N	3-8 Line Decoder/Demultiplexer	3-30	SDLD001
SN74LS138D	3-8 Line Decoder/Demultiplexer	3-30	SDLD001
SN74LS138FN	3-8 Line Decoder/Demultiplexer	3-30	SDLD001
SN74LS138N	3-8 Line Decoder/Demultiplexer	3-30	SDLD001
SN74LS139AD	Dual 2-4 Decoder/Demultiplexer	3-30	SDLD001
SN74LS139AFN	Dual 2-4 Decoder/Demultiplexer	3-30	SDLD001
SN74LS139AN	Dual 2-4 Decoder/Demultiplexer	3-30	SDLD001
SN74LS145D	BCD-TO-Decimal Decoder/Driver	3-30	SDLD001
SN74LS145FN	BCD-TO-Decimal Decoder/Driver	3-30	SDLD001
SN74LS145N	BCD-TO-Decimal Decoder/Driver	3-30	SDLD001
SN74LS147D	10-4 Line Encoder	3-29	SDLD001
SN74LS147FN	10-4 Line Encoder	3-29	SDLD001
SN74LS147N	10-4 Line Encoder	3-29	SDLD001
SN74LS148D	8-3 Line Encoder	3-29	SDLD001
SN74LS148FN	8-3 Line Encoder	3-29	SDLD001
SN74LS148N	8-3 Line Encoder	3-29	SDLD001
SN74LS151D	8-1 Data Selector/Multiplexer	3-29	SDLD001
SN74LS151FN	8-1 Data Selector/Multiplexer	3-29	SDLD001
SN74LS151N	8-1 Data Selector/Multiplexer	3-29	SDLD001
SN74LS153D	Dual 4-1 Data Selector/Multiplexer	3-28	SDLD001
SN74LS153FN	Dual 4-1 Data Selector/Multiplexer	3-28	SDLD001
SN74LS153N	Dual 4-1 Data Selector/Multiplexer	3-28	SDLD001
SN74LS155AD	Dual 1-4 Decoder	3-30	SDLD001
SN74LS155AFN	Dual 1-4 Decoder	3-30	SDLD001
SN74LS155AN	Dual 1-4 Decoder	3-30	SDLD001
SN74LS156D	Dual 1-4 Decoder OC	3-30	SDLD001
SN74LS156FN	Dual 1-4 Decoder OC	3-30	SDLD001
SN74LS156N	Dual 1-4 Decoder OC	3-30	SDLD001
SN74LS157D	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN74LS157FN	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN74LS157N	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN74LS158D	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN74LS158FN	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN74LS158N	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN74LS160AD	4-Bit Synchronous Decade Counter	3-25	SDLD001
SN74LS160AFN	4-Bit Synchronous Decade Counter	3-25	SDLD001
SN74LS160AN	4-Bit Synchronous Decade Counter	3-25	SDLD001
SN74LS161AD	4-Bit Synchronous Binary Counter	3-25	SDLD001
SN74LS161AFN	4-Bit Synchronous Binary Counter	3-25	SDLD001
SN74LS161AN	4-Bit Synchronous Binary Counter	3-25	SDLD001
SN74LS162AD	4-Bit Synchronous Decade Counter	3-25	SDLD001
SN74LS162AFN	4-Bit Synchronous Decade Counter	3-25	SDLD001
SN74LS162AN	4-Bit Synchronous Decade Counter	3-25	SDLD001
SN74LS163AD	4-Bit Binary Counter	3-25	SDLD001
SN74LS163AFN	4-Bit Binary Counter	3-25	SDLD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74LS163AN	4-Bit Binary Counter	3-25	SDLD001
SN74LS164D	8-Bit Shift Register	3-22	SDLD001
SN74LS164FN	8-Bit Shift Register	3-22	SDLD001
SN74LS164N	8-Bit Shift Register	3-22	SDLD001
SN74LS165AD	8-Bit Shift Register	3-22	SDLD001
SN74LS165AFN	8-Bit Shift Register	3-22	SDLD001
SN74LS165AN	8-Bit Shift Register	3-22	SDLD001
SN74LS166AD	8-Bit Shift Register	3-22	SDLD001
SN74LS166AFN	8-Bit Shift Register	3-22	SDLD001
SN74LS166AN	8-Bit Shift Register	3-22	SDLD001
SN74LS169BD	4-Bit Synchronous Binary Counter	3-26	SDLD001
SN74LS169BFN	4-Bit Synchronous Binary Counter	3-26	SDLD001
SN74LS169BN	4-Bit Synchronous Binary Counter	3-26	SDLD001
SN74LS170D	4-by-4 Register File	3-23	SDLD001
SN74LS170FN	4-by-4 Register File	3-23	SDLD001
SN74LS170N	4-by-4 Register File	3-23	SDLD001
SN74LS173AD	Quad D-Type Register	3-24	SDLD001
SN74LS173AFN	Quad D-Type Register	3-24	SDLD001
SN74LS173AN	Quad D-Type Register	3-24	SDLD001
SN74LS174D	Hex D-Type Flip-Flop	3-18	SDLD001
SN74LS174FN	Hex D-Type Flip-Flop	3-18	SDLD001
SN74LS174N	Hex D-Type Flip-Flop	3-18	SDLD001
SN74LS175D	Quad D-Type Flip-Flop	3-18	SDLD001
SN74LS175FN	Quad D-Type Flip-Flop	3-18	SDLD001
SN74LS175N	Quad D-Type Flip-Flop	3-18	SDLD001
SN74LS181DW	4-Bit ALU	3-34	SDLD001
SN74LS181FN	4-Bit ALU	3-34	SDLD001
SN74LS181N	4-Bit ALU	3-34	SDLD001
SN74LS190D	Synchronous Up/Down Decade Counter	3-25	SDLD001
SN74LS190FN	Synchronous Up/Down Decade Counter	3-25	SDLD001
SN74LS190N	Synchronous Up/Down Decade Counter	3-25	SDLD001
SN74LS191D	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN74LS191FN	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN74LS191N	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN74LS192D	Synchronous Up/Down Decade Counter	3-25	SDLD001
SN74LS192FN	Synchronous Up/Down Decade Counter	3-25	SDLD001
SN74LS192N	Synchronous Up/Down Decade Counter	3-25	SDLD001
SN74LS193D	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN74LS193FN	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN74LS193N	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN74LS194AD	4-Bit Universal Shift Register	3-22	SDLD001
SN74LS194AFN	4-Bit Universal Shift Register	3-22	SDLD001
SN74LS194AN	4-Bit Universal Shift Register	3-22	SDLD001
SN74LS195AD	4-Bit Shift Register	3-22	SDLD001
SN74LS195AFN	4-Bit Shift Register	3-22	SDLD001
SN74LS195AN	4-Bit Shift Register	3-22	SDLD001
SN74LS196D	4-Bit BCD Counter	3-26	SDLD001
SN74LS196FN	4-Bit BCD Counter	3-26	SDLD001
SN74LS196N	4-Bit BCD Counter	3-26	SDLD001
SN74LS197D	4-Bit Binary Counter	3-26	SDLD001
SN74LS197FN	4-Bit Binary Counter	3-26	SDLD001
SN74LS197N	4-Bit Binary Counter	3-26	SDLD001
SN74LS221D	Dual Monostable Multivibrator	3-20	SDLD001
SN74LS221FN	Dual Monostable Multivibrator	3-20	SDLD001
SN74LS221N	Dual Monostable Multivibrator	3-20	SDLD001
SN74LS222J	FIFO Memory 16 × 4	10-9	SDVD001
SN74LS222N	FIFO Memory 16 × 4	10-9	SDVD001
SN74LS224J	FIFO Memory 16 × 4	10-9	SDVD001
SN74LS224N	FIFO Memory 16 × 4	10-9	SDVD001
SN74LS227J	FIFO Memory 16 × 4 OC	10-9	SDVD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74LS227N	FIFO Memory 16 × 4 OC	10-9	SDVD001
SN74LS228J	FIFO Memory 16 × 4 OC	10-9	SDVD001
SN74LS228N	FIFO Memory 16 × 4 OC	10-9	SDVD001
SN74LS240DW	Octal Buffer/Line Driver	3-12	SDLD001
SN74LS240FN	Octal Buffer/Line Driver	3-12	SDLD001
SN74LS240N	Octal Buffer/Line Driver	3-12	SDLD001
SN74LS241DW	Octal Buffer/Line Driver	3-12	SDLD001
SN74LS241FN	Octal Buffer/Line Driver	3-12	SDLD001
SN74LS241N	Octal Buffer/Line Driver	3-12	SDLD001
SN74LS242D	Quad Bus Transceiver	3-13	SDLD001
SN74LS242FN	Quad Bus Transceiver	3-13	SDLD001
SN74LS242N	Quad Bus Transceiver	3-13	SDLD001
SN74LS243D	Quad Bus Transceiver	3-13	SDLD001
SN74LS243FN	Quad Bus Transceiver	3-13	SDLD001
SN74LS243N	Quad Bus Transceiver	3-13	SDLD001
SN74LS244DW	Octal Buffer/Line Driver	3-12	SDLD001
SN74LS244FN	Octal Buffer/Line Driver	3-12	SDLD001
SN74LS244N	Octal Buffer/Line Driver	3-12	SDLD001
SN74LS245DW	Octal Bus Transceiver	3-13	SDLD001
SN74LS245FN	Octal Bus Transceiver	3-13	SDLD001
SN74LS245N	Octal Bus Transceiver	3-13	SDLD001
SN74LS247D	BCD-to-7-Segment Decoder	3-30	SDLD001
SN74LS247FN	BCD-to-7-Segment Decoder	3-30	SDLD001
SN74LS247N	BCD-to-7-Segment Decoder	3-30	SDLD001
SN74LS251D	8-1 Data Selector/Multiplexer	3-29	SDLD001
SN74LS251FN	8-1 Data Selector/Multiplexer	3-29	SDLD001
SN74LS251N	8-1 Data Selector/Multiplexer	3-29	SDLD001
SN74LS253D	4-1 Data Selector/Multiplexer	3-28	SDLD001
SN74LS253FN	4-1 Data Selector/Multiplexer	3-28	SDLD001
SN74LS253N	4-1 Data Selector/Multiplexer	3-28	SDLD001
SN74LS257BD	Quad 2-Input Data Selector/Multiplexer	3-28	SDLD001
SN74LS257BFN	Quad 2-Input Data Selector/Multiplexer	3-28	SDLD001
SN74LS257BN	Quad 2-Input Data Selector/Multiplexer	3-28	SDLD001
SN74LS258BD	Quad 2-Input Data Selector/Multiplexer	3-28	SDLD001
SN74LS258BFN	Quad 2-Input Data Selector/Multiplexer	3-28	SDLD001
SN74LS258BN	Quad 2-Input Data Selector/Multiplexer	3-28	SDLD001
SN74LS259BD	8-Bit Addressable Latch	3-21	SDLD001
SN74LS259BFN	8-Bit Addressable Latch	3-21	SDLD001
SN74LS259BN	8-Bit Addressable Latch	3-21	SDLD001
SN74LS266D	Quad 2-Input Exclusive OR Gate OC	3-7	SDLD001
SN74LS266FN	Quad 2-Input Exclusive OR Gate OC	3-7	SDLD001
SN74LS266N	Quad 2-Input Exclusive OR Gate OC	3-7	SDLD001
SN74LS273DW	Octal D-Type Flip-Flop	3-18	SDLD001
SN74LS273FN	Octal D-Type Flip-Flop	3-18	SDLD001
SN74LS273N	Octal D-Type Flip-Flop	3-18	SDLD001
SN74LS279AD	Quad Set/Reset Latch	3-20	SDLD001
SN74LS279AFN	Quad Set/Reset Latch	3-20	SDLD001
SN74LS279AN	Quad Set/Reset Latch	3-20	SDLD001
SN74LS280D	9-Bit Parity Generator/Checker	3-33	SDLD001
SN74LS280FN	9-Bit Parity Generator/Checker	3-33	SDLD001
SN74LS280N	9-Bit Parity Generator/Checker	3-33	SDLD001
SN74LS283D	4-Bit Full Adder	3-34	SDLD001
SN74LS283FN	4-Bit Full Adder	3-34	SDLD001
SN74LS283N	4-Bit Full Adder	3-34	SDLD001
SN74LS290D	Decade Counter	3-26	SDLD001
SN74LS290FN	Decade Counter	3-26	SDLD001
SN74LS290N	Decade Counter	3-26	SDLD001
SN74LS292N	30-Bit Programmable Counter	3-27	SDLD001
SN74LS293D	4-Bit Binary Counter	3-26	SDLD001
SN74LS293FN	4-Bit Binary Counter	3-26	SDLD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74LS293N	4-Bit Binary Counter	3-26	SDLD001
SN74LS294N	16-Bit Programmable Counter	3-27	SDLD001
SN74LS295BD	4-Bit Shift Register	3-22	SDLD001
SN74LS295BFN	4-Bit Shift Register	3-22	SDLD001
SN74LS295BN	4-Bit Shift Register	3-22	SDLD001
SN74LS297N	Digital Phase Lock Loop	3-31	SDLD001
SN74LS298D	Quad 2-Input Multiplexer	3-28	SDLD001
SN74LS298FN	Quad 2-Input Multiplexer	3-28	SDLD001
SN74LS298N	Quad 2-Input Multiplexer	3-28	SDLD001
SN74LS299DW	8-Bit Shift Register	3-22	SDLD001
SN74LS299FN	8-Bit Shift Register	3-22	SDLD001
SN74LS299N	8-Bit Shift Register	3-22	SDLD001
SN74LS321D	Crystal Controlled Oscillator	3-31	SDLD001
SN74LS321FN	Crystal Controlled Oscillator	3-31	SDLD001
SN74LS321N	Crystal Controlled Oscillator	3-31	SDLD001
SN74LS322ADW	8-Bit Shift Register	3-22	SDLD001
SN74LS322AFN	8-Bit Shift Register	3-22	SDLD001
SN74LS322AN	8-Bit Shift Register	3-22	SDLD001
SN74LS323DW	8-Bit Shift/Storage Register	3-22	SDLD001
SN74LS323FN	8-Bit Shift/Storage Register	3-22	SDLD001
SN74LS323N	8-Bit Shift/Storage Register	3-22	SDLD001
SN74LS348D	8-3 Line Encoder	3-29	SDLD001
SN74LS348FN	8-3 Line Encoder	3-29	SDLD001
SN74LS348N	8-3 Line Encoder	3-29	SDLD001
SN74LS352D	Dual Data Selector/Multiplexer	3-28	SDLD001
SN74LS352FN	Dual Data Selector/Multiplexer	3-28	SDLD001
SN74LS352N	Dual Data Selector/Multiplexer	3-28	SDLD001
SN74LS353D	Dual Data Selector/Multiplexer	3-28	SDLD001
SN74LS353FN	Dual Data Selector/Multiplexer	3-28	SDLD001
SN74LS353N	Dual Data Selector/Multiplexer	3-28	SDLD001
SN74LS354DW	8-1 Selector/Multiplexer Register	3-29	SDLD001
SN74LS354FN	8-1 Selector/Multiplexer Register	3-29	SDLD001
SN74LS354N	8-1 Selector/Multiplexer Register	3-29	SDLD001
SN74LS356DW	8-1 Selector/Multiplexer Register	3-24	SDLD001
SN74LS356FN	8-1 Selector/Multiplexer Register	3-24	SDLD001
SN74LS356N	8-1 Selector/Multiplexer Register	3-24	SDLD001
SN74LS365AD	Hex Bus Driver	3-10	SDLD001
SN74LS365AFN	Hex Bus Driver	3-10	SDLD001
SN74LS365AN	Hex Bus Driver	3-10	SDLD001
SN74LS366AD	Hex Bus Driver	3-10	SDLD001
SN74LS366AFN	Hex Bus Driver	3-10	SDLD001
SN74LS366AN	Hex Bus Driver	3-10	SDLD001
SN74LS367AD	Hex Bus Driver	3-10	SDLD001
SN74LS367AFN	Hex Bus Driver	3-10	SDLD001
SN74LS367AN	Hex Bus Driver	3-10	SDLD001
SN74LS368AD	Hex Bus Driver	3-10	SDLD001
SN74LS368AFN	Hex Bus Driver	3-10	SDLD001
SN74LS368AN	Hex Bus Driver	3-10	SDLD001
SN74LS373DW	Octal D-Type Latch	3-21	SDLD001
SN74LS373FN	Octal D-Type Latch	3-21	SDLD001
SN74LS373N	Octal D-Type Latch	3-21	SDLD001
SN74LS374DW	Octal D-Type Flip-Flop	3-18	SDLD001
SN74LS374FN	Octal D-Type Flip-Flop	3-18	SDLD001
SN74LS374N	Octal D-Type Flip-Flop	3-18	SDLD001
SN74LS375D	4-Bit Bistable Latch	3-20	SDLD001
SN74LS375FN	4-Bit Bistable Latch	3-20	SDLD001
SN74LS375N	4-Bit Bistable Latch	3-20	SDLD001
SN74LS377DW	Octal D-Type Flip-Flop	3-18	SDLD001
SN74LS377FN	Octal D-Type Flip-Flop	3-18	SDLD001
SN74LS377N	Octal D-Type Flip-Flop	3-18	SDLD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74LS378D	Hex D-Type Flip-Flop	3-18	SDLD001
SN74LS378FN	Hex D-Type Flip-Flop	3-18	SDLD001
SN74LS378N	Hex D-Type Flip-Flop	3-18	SDLD001
SN74LS379D	Quad D-Type Flip-Flop	3-18	SDLD001
SN74LS379FN	Quad D-Type Flip-Flop	3-18	SDLD001
SN74LS379N	Quad D-Type Flip-Flop	3-18	SDLD001
SN74LS381ADW	ALU/Function Generator	3-34	SDLD001
SN74LS381AFN	ALU/Function Generator	3-34	SDLD001
SN74LS381AN	ALU/Function Generator	3-34	SDLD001
SN74LS382ADW	ALU/Function Generator	3-34	SDLD001
SN74LS382AFN	ALU/Function Generator	3-34	SDLD001
SN74LS382AN	ALU/Function Generator	3-34	SDLD001
SN74LS390D	4-Bit Decade Counter	3-26	SDLD001
SN74LS390FN	4-Bit Decade Counter	3-26	SDLD001
SN74LS390N	4-Bit Decade Counter	3-26	SDLD001
SN74LS393D	4-Bit Binary Counter	3-26	SDLD001
SN74LS393FN	4-Bit Binary Counter	3-26	SDLD001
SN74LS393N	4-Bit Binary Counter	3-26	SDLD001
SN74LS395AD	4-Bit Cascadable Shift Register	3-22	SDLD001
SN74LS395AFN	4-Bit Cascadable Shift Register	3-22	SDLD001
SN74LS395AN	4-Bit Cascadable Shift Register	3-22	SDLD001
SN74LS399D	Quad 2-Input Multiplexer with Storage	3-28	SDLD001
SN74LS399FN	Quad 2-Input Multiplexer with Storage	3-28	SDLD001
SN74LS399N	Quad 2-Input Multiplexer with Storage	3-28	SDLD001
SN74LS423D	Retriggerable Multivibrator	3-20	SDLD001
SN74LS423FN	Retriggerable Multivibrator	3-20	SDLD001
SN74LS423N	Retriggerable Multivibrator	3-20	SDLD001
SN74LS442DW	Bus Transceiver	3-13	SDLD001
SN74LS442FN	Bus Transceiver	3-13	SDLD001
SN74LS442N	Bus Transceiver	3-13	SDLD001
SN74LS465DW	Bus Transceiver	3-12	SDLD001
SN74LS465FN	Bus Transceiver	3-12	SDLD001
SN74LS465N	Bus Transceiver	3-12	SDLD001
SN74LS466DW	Octal Buffer	3-12	SDLD001
SN74LS466FN	Octal Buffer	3-12	SDLD001
SN74LS466N	Octal Buffer	3-12	SDLD001
SN74LS540DW	Octal Buffer/Line Driver	3-12	SDLD001
SN74LS540FN	Octal Buffer/Line Driver	3-12	SDLD001
SN74LS540N	Octal Buffer/Line Driver	3-12	SDLD001
SN74LS541DW	Octal Buffer/Line Driver	3-12	SDLD001
SN74LS541FN	Octal Buffer/Line Driver	3-12	SDLD001
SN74LS541N	Octal Buffer/Line Driver	3-12	SDLD001
SN74LS590D	Binary Counter with Output Register	3-27	SDLD001
SN74LS590FN	Binary Counter with Output Register	3-27	SDLD001
SN74LS590N	Binary Counter with Output Register	3-27	SDLD001
SN74LS592D	Binary Counter with Input Register	3-27	SDLD001
SN74LS592FN	Binary Counter with Input Register	3-27	SDLD001
SN74LS592N	Binary Counter with Input Register	3-27	SDLD001
SN74LS593DW	Binary Counter with Input Register	3-27	SDLD001
SN74LS593FN	Binary Counter with Input Register	3-27	SDLD001
SN74LS593N	Binary Counter with Input Register	3-27	SDLD001
SN74LS595D	Shift Register with Output Latch	3-23	SDLD001
SN74LS595FN	Shift Register with Output Latch	3-23	SDLD001
SN74LS595N	Shift Register with Output Latch	3-23	SDLD001
SN74LS597D	Shift Register with Input Latch	3-23	SDLD001
SN74LS597FN	Shift Register with Input Latch	3-23	SDLD001
SN74LS597N	Shift Register with Input Latch	3-23	SDLD001
SN74LS598DW	Shift Register with Input Latch	3-23	SDLD001
SN74LS598FN	Shift Register with Input Latch	3-23	SDLD001
SN74LS598N	Shift Register with Input Latch	3-23	SDLD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74LS599D	Shift Register with Output Latch	3-23	SDLD001
SN74LS599FN	Shift Register with Output Latch	3-23	SDLD001
SN74LS599N	Shift Register with Output Latch	3-23	SDLD001
SN74LS607FN	16-to-8 Multiplexed Latch	3-28	SDLD001
SN74LS607N	16-to-8 Multiplexed Latch	3-28	SDLD001
SN74LS610FN	Memory Mapper with Latch	3-31	SDLD001
SN74LS610JD	Memory Mapper with Latch	3-31	SDLD001
SN74LS610N	Memory Mapper with Latch	3-31	SDLD001
SN74LS611FN	Memory Mapper with Latch	3-31	SDLD001
SN74LS611JD	Memory Mapper with Latch	3-31	SDLD001
SN74LS611N	Memory Mapper with Latch	3-31	SDLD001
SN74LS612FN	Memory Mapper	3-31	SDLD001
SN74LS612JD	Memory Mapper	3-31	SDLD001
SN74LS612N	Memory Mapper	3-31	SDLD001
SN74LS613FN	Memory Mapper	3-31	SDLD001
SN74LS613JD	Memory Mapper	3-31	SDLD001
SN74LS613N	Memory Mapper	3-31	SDLD001
SN74LS623DW	Octal Bus Transceiver	3-16	SDLD001
SN74LS623FN	Octal Bus Transceiver	3-15	SDLD001
SN74LS623N	Octal Bus Transceiver	3-15	SDLD001
SN74LS624D	Voltage-Controlled Oscillator	3-31	SDLD001
SN74LS624FN	Voltage-Controlled Oscillator	3-31	SDLD001
SN74LS624N	Voltage-Controlled Oscillator	3-31	SDLD001
SN74LS625D	Voltage-Controlled Oscillator	3-31	SDLD001
SN74LS625FN	Voltage-Controlled Oscillator	3-31	SDLD001
SN74LS625N	Voltage-Controlled Oscillator	3-31	SDLD001
SN74LS628D	Voltage-Controlled Oscillator	3-31	SDLD001
SN74LS628FN	Voltage-Controlled Oscillator	3-31	SDLD001
SN74LS628N	Voltage-Controlled Oscillator	3-31	SDLD001
SN74LS629D	Voltage-Controlled Oscillator	3-31	SDLD001
SN74LS629FN	Voltage-Controlled Oscillator	3-31	SDLD001
SN74LS629N	Voltage-Controlled Oscillator	3-31	SDLD001
SN74LS630N	Error Detection and Correction Circuit	3-33	SDLD001
SN74LS640DW	Octal Bus Transceiver	3-13	SDLD001
SN74LS640FN	Octal Bus Transceiver	3-13	SDLD001
SN74LS640N	Octal Bus Transceiver	3-13	SDLD001
SN74LS640-1DW	Octal Bus Transceiver	3-13	SDLD001
SN74LS640-1FN	Octal Bus Transceiver	3-13	SDLD001
SN74LS640-1N	Octal Bus Transceiver	3-13	SDLD001
SN74LS641DW	Octal Bus Transceiver	3-11	SDLD001
SN74LS641FN	Octal Bus Transceiver	3-11	SDLD001
SN74LS641N	Octal Bus Transceiver	3-11	SDLD001
SN74LS641-1DW	Octal Bus Transceiver	3-11	SDLD001
SN74LS641-1FN	Octal Bus Transceiver	3-11	SDLD001
SN74LS641-1N	Octal Bus Transceiver	3-11	SDLD001
SN74LS642DW	Octal Bus Transceiver	3-11	SDLD001
SN74LS642FN	Octal Bus Transceiver	3-11	SDLD001
SN74LS642N	Octal Bus Transceiver	3-11	SDLD001
SN74LS642-1DW	Octal Bus Transceiver	3-11	SDLD001
SN74LS642-1FN	Octal Bus Transceiver	3-11	SDLD001
SN74LS642-1N	Octal Bus Transceiver	3-11	SDLD001
SN74LS644DW	Octal Bus Transceiver	3-11	SDLD001
SN74LS644FN	Octal Bus Transceiver	3-11	SDLD001
SN74LS644N	Octal Bus Transceiver	3-11	SDLD001
SN74LS644-1DW	Octal Bus Transceiver	3-11	SDLD001
SN74LS644-1N	Octal Bus Transceiver	3-11	SDLD001
SN74LS645DW	Octal Bus Transceiver	3-15	SDLD001
SN74LS645FN	Octal Bus Transceiver	3-15	SDLD001
SN74LS645N	Octal Bus Transceiver	3-15	SDLD001
SN74LS645-1DW	Octal Bus Transceiver	3-15	SDLD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74LS645-1FN	Octal Bus Transceiver	3-15	SDLD001
SN74LS645-1N	Octal Bus Transceiver	3-15	SDLD001
SN74LS646DW	Octal Bus Transceiver and Register	3-14	SDLD001
SN74LS646FN	Octal Bus Transceiver and Register	3-14	SDLD001
SN74LS646NT	Octal Bus Transceiver and Register	3-14	SDLD001
SN74LS648DW	Octal Bus Transceiver and Register	3-14	SDLD001
SN74LS648FN	Octal Bus Transceiver and Register	3-14	SDLD001
SN74LS648NT	Octal Bus Transceiver and Register	3-14	SDLD001
SN74LS651DW	Octal Bus Transceiver and Register	3-14	SDLD001
SN74LS651FN	Octal Bus Transceiver and Register	3-14	SDLD001
SN74LS651NT	Octal Bus Transceiver and Register	3-14	SDLD001
SN74LS652DW	Octal Bus Transceiver and Register	3-14	SDLD001
SN74LS652FN	Octal Bus Transceiver and Register	3-14	SDLD001
SN74LS652NT	Octal Bus Transceiver and Register	3-14	SDLD001
SN74LS669D	4-Bit UP/Down Counter	3-25	SDLD001
SN74LS669FN	4-Bit Up/Down Counter	3-25	SDLD001
SN74LS669N	4-Bit Up/Down Counter	3-25	SDLD001
SN74LS670D	4-by-4 Register File	3-23	SDLD001
SN74LS670FN	4-by-4 Register File	3-23	SDLD001
SN74LS670N	4-by-4 Register File	3-23	SDLD001
SN74LS674DW	16-Bit Shift Register	3-22	SDLD001
SN74LS674FN	16-Bit Shift Register	3-22	SDLD001
SN74LS674N	16-Bit Shift Register	3-22	SDLD001
SN74LS681DW	4-Bit Binary Accumulator	3-34	SDLD001
SN74LS681FN	4-Bit Binary Accumulator	3-34	SDLD001
SN74LS681N	4-Bit Binary Accumulator	3-34	SDLD001
SN74LS682DW	8-Bit Identity Comparator	3-32	SDLD001
SN74LS682FN	8-Bit Identity Comparator	3-32	SDLD001
SN74LS682N	8-Bit Identity Comparator	3-32	SDLD001
SN74LS684DW	8-Bit Identity Comparator	3-32	SDLD001
SN74LS684FN	8-Bit Identity Comparator	3-32	SDLD001
SN74LS684N	8-Bit Identity Comparator	3-32	SDLD001
SN74LS688DW	8-Bit Magnitude Comparator	3-32	SDLD001
SN74LS688FN	8-Bit Magnitude Comparator	3-32	SDLD001
SN74LS688N	8-Bit Magnitude Comparator	3-32	SDLD001
SN74LS697DW	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN74LS697FN	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN74LS697N	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN74LS699DW	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN74LS699FN	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN74LS699N	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN74S00D	Quad 2-Input NAND Gate	3-4	SDLD001
SN74S00FN	Quad 2-Input NAND Gate	3-4	SDLD001
SN74S00N	Quad 2-Input NAND Gate	3-4	SDLD001
SN74S02D	Quad 2-Input NOR Gate	3-6	SDLD001
SN74S02FN	Quad 2-Input NOR Gate	3-6	SDLD001
SN74S02N	Quad 2-Input NOR Gate	3-6	SDLD001
SN74S03D	Quad 2-Input NAND Gate OC	3-5	SDLD001
SN74S03FN	Quad 2-Input NAND Gate OC	3-5	SDLD001
SN74S03N	Quad 2-Input NAND Gate OC	3-5	SDLD001
SN74S04D	Hex Inverter	3-9	SDLD001
SN74S04FN	Hex Inverter	3-9	SDLD001
SN74S04N	Hex Inverter	3-9	SDLD001
SN74S05D	Hex Inverter OC	3-9	SDLD001
SN74S05FN	Hex Inverter OC	3-9	SDLD001
SN74S05N	Hex Inverter OC	3-9	SDLD001
SN74S08D	Quad 2-Input AND Gate	3-5	SDLD001
SN74S08FN	Quad 2-Input AND Gate	3-5	SDLD001
SN74S08N	Quad 2-Input AND Gate	3-5	SDLD001
SN74S09D	Quad 2-Input AND Gate OC	3-5	SDLD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74S09FN	Quad 2-Input AND Gate OC	3-5	SDLD001
SN74S09N	Quad 2-Input AND Gate OC	3-5	SDLD001
SN74S10D	Triple 3-Input NAND Gate	3-4	SDLD001
SN74S10FN	Triple 3-Input NAND Gate	3-4	SDLD001
SN74S10N	Triple 3-Input NAND Gate	3-4	SDLD001
SN74S11D	Triple 3-Input AND Gate	3-5	SDLD001
SN74S11FN	Triple 3-Input AND Gate	3-5	SDLD001
SN74S11N	Triple 3-Input AND Gate	3-5	SDLD001
SN74S15D	Triple 3-Input AND Gate OC	3-5	SDLD001
SN74S15FN	Triple 3-Input AND Gate OC	3-5	SDLD001
SN74S15N	Triple 3-Input AND Gate OC	3-5	SDLD001
SN74S20D	Dual 4-Input NAND Gate	3-4	SDLD001
SN74S20FN	Dual 4-Input NAND Gate	3-4	SDLD001
SN74S20N	Dual 4-Input NAND Gate	3-4	SDLD001
SN74S22D	Dual 4-Input NAND Gate OC	3-5	SDLD001
SN74S22FN	Dual 4-Input NAND Gate OC	3-5	SDLD001
SN74S22N	Dual 4-Input NAND Gate OC	3-5	SDLD001
SN74S30D	8-Input NAND Gate	3-4	SDLD001
SN74S30FN	8-Input NAND Gate	3-4	SDLD001
SN74S30N	8-Input NAND Gate	3-4	SDLD001
SN74S32D	Quad 2-Input OR Gate	3-6	SDLD001
SN74S32FN	Quad 2-Input OR Gate	3-6	SDLD001
SN74S32N	Quad 2-Input OR Gate	3-6	SDLD001
SN74S37D	Quad 2-Input NAND Buffer	3-4	SDLD001
SN74S37FN	Quad 2-Input NAND Buffer	3-4	SDLD001
SN74S37N	Quad 2-Input NAND Buffer	3-4	SDLD001
SN74S38D	Quad 2-Input NAND Buffer OC	3-4	SDLD001
SN74S38FN	Quad 2-Input NAND Buffer OC	3-4	SDLD001
SN74S38N	Quad 2-Input NAND Buffer OC	3-4	SDLD001
SN74S40D	Dual 4-Input NAND Buffer	3-4	SDLD001
SN74S40FN	Dual 4-Input NAND Buffer	3-4	SDLD001
SN74S40N	Dual 4-Input NAND Buffer	3-4	SDLD001
SN74S51D	Dual AND-OR-Invert Gate	3-7	SDLD001
SN74S51FN	Dual AND-OR-Invert Gate	3-7	SDLD001
SN74S51N	Dual AND-OR-Invert Gate	3-7	SDLD001
SN74S64D	AND-OR-Invert Gate	3-7	SDLD001
SN74S64FN	AND-OR-Invert Gate	3-7	SDLD001
SN74S64N	AND-OR-Invert Gate	3-7	SDLD001
SN74S65D	AND-OR-Invert Gate OC	3-7	SDLD001
SN74S65FN	AND-OR-Invert Gate OC	3-7	SDLD001
SN74S65N	AND-OR-Invert Gate OC	3-7	SDLD001
SN74S74D	Dual D-Type Flip-Flop	3-17	SDLD001
SN74S74FN	Dual D-Type Flip-Flop	3-17	SDLD001
SN74S74N	Dual D-Type Flip-Flop	3-17	SDLD001
SN74S85D	4-Bit Magnitude Comparator	3-32	SDLD001
SN74S85FN	4-Bit Magnitude Comparator	3-32	SDLD001
SN74S85N	4-Bit Magnitude Comparator	3-32	SDLD001
SN74S86D	Quad 2-Input Exclusive OR Gate	3-7	SDLD001
SN74S86FN	Quad 2-Input Exclusive OR Gate	3-7	SDLD001
SN74S86N	Quad 2-Input Exclusive OR Gate	3-7	SDLD001
SN74S112AD	Dual J-K Flip-Flop	3-17	SDLD001
SN74S112AFN	Dual J-K Flip-Flop	3-17	SDLD001
SN74S112AN	Dual J-K Flip-Flop	3-17	SDLD001
SN74S113AD	Dual J-K Flip-Flop	3-17	SDLD001
SN74S113AFN	Dual J-K Flip-Flop	3-17	SDLD001
SN74S113AN	Dual J-K Flip-Flop	3-17	SDLD001
SN74S114AD	Dual J-K Flip-Flop	3-17	SDLD001
SN74S114AFN	Dual J-K Flip-Flop	3-17	SDLD001
SN74S114AN	Dual J-K Flip-Flop	3-17	SDLD001
SN74S124D	Dual Voltage-Controlled Oscillator	3-31	SDLD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74S124FN	Dual Voltage-Controlled Oscillator	3-31	SDLD001
SN74S124N	Dual Voltage-Controlled Oscillator	3-31	SDLD001
SN74S132D	Quad 2-Input NAND Schmitt-Trigger	3-4	SDLD001
SN74S132FN	Quad 2-Input NAND Schmitt-Trigger	3-4	SDLD001
SN74S132N	Quad 2-Input NAND Schmitt-Trigger	3-4	SDLD001
SN74S133D	13-Input NAND Gate	3-4	SDLD001
SN74S133FN	13-Input NAND Gate	3-4	SDLD001
SN74S133N	13-Input NAND Gate	3-4	SDLD001
SN74S134D	12-Input NAND Gate	3-4	SDLD001
SN74S134FN	12-Input NAND Gate	3-4	SDLD001
SN74S134N	12-Input NAND Gate	3-4	SDLD001
SN74S135D	Quad Exclusive OR/NOR Gate	3-7	SDLD001
SN74S135FN	Quad Exclusive OR/NOR Gate	3-7	SDLD001
SN74S135N	Quad Exclusive OR/NOR Gate	3-7	SDLD001
SN74S138AD	3-8 Line Decoder/Demultiplexer	3-30	SDLD001
SN74S138AFN	3-8 Line Decoder/Demultiplexer	3-30	SDLD001
SN74S138AN	3-8 Line Decoder/Demultiplexer	3-30	SDLD001
SN74S139AD	Dual 2-4 Decoder/Demultiplexer	3-30	SDLD001
SN74S139AFN	Dual 2-4 Decoder/Demultiplexer	3-30	SDLD001
SN74S139AN	Dual 2-4 Decoder/Demultiplexer	3-30	SDLD001
SN74S140D	Dual 50 Ohm Line Driver	3-15	SDLD001
SN74S140FN	Dual 50 Ohm Line Driver	3-15	SDLD001
SN74S140N	Dual 50 Ohm Line Driver	3-15	SDLD001
SN74S151D	8-1 Data Select/Multiplexer	3-29	SDLD001
SN74S151FN	8-1 Data Select/Multiplexer	3-29	SDLD001
SN74S151N	8-1 Data Select/Multiplexer	3-29	SDLD001
SN74S153D	Dual 4-1 Data Selector/Multiplexer	3-28	SDLD001
SN74S153FN	Dual 4-1 Data Selector/Multiplexer	3-28	SDLD001
SN74S153N	Dual 4-1 Data Selector/Multiplexer	3-28	SDLD001
SN74S157D	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN74S157FN	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN74S157N	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN74S158D	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN74S158FN	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN74S158N	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN74S162D	4-Bit Synchronous Decade Counter	3-25	SDLD001
SN74S162FN	4-Bit Synchronous Decade Counter	3-25	SDLD001
SN74S162N	4-Bit Synchronous Decade Counter	3-25	SDLD001
SN74S163D	4-Bit Synchronous Binary Counter	3-25	SDLD001
SN74S163FN	4-Bit Synchronous Binary Counter	3-25	SDLD001
SN74S163N	4-Bit Synchronous Binary Counter	3-25	SDLD001
SN74S169D	4-Bit Synchronous Binary Counter	3-26	SDLD001
SN74S169FN	4-Bit Synchronous Binary Counter	3-26	SDLD001
SN74S169N	4-Bit Synchronous Binary Counter	3-26	SDLD001
SN74S174D	Hex D-Type Flip-Flop	3-18	SDLD001
SN74S174FN	Hex D-Type Flip-Flop	3-18	SDLD001
SN74S174N	Hex D-Type Flip-Flop	3-18	SDLD001
SN74S175D	Quad D-Type Flip-Flop	3-18	SDLD001
SN74S175FN	Quad D-Type Flip-Flop	3-18	SDLD001
SN74S175N	Quad D-Type Flip-Flop	3-18	SDLD001
SN74S181DW	4-Bit ALU	3-34	SDLD001
SN74S181FN	4-Bit ALU	3-34	SDLD001
SN74S181N	4-Bit ALU	3-34	SDLD001
SN74S182D	Look-Ahead Carry Generator	3-34	SDLD001
SN74S182FN	Look-Ahead Carry Generator	3-34	SDLD001
SN74S182N	Look-Ahead Carry Generator	3-34	SDLD001
SN74S194D	4-Bit Universal Shift Register	3-22	SDLD001
SN74S194FN	4-Bit Universal Shift Register	3-22	SDLD001
SN74S194N	4-Bit Universal Shift Register	3-22	SDLD001
SN74S195D	4-Bit Shift Register	3-22	SDLD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74S195FN	4-Bit Shift Register	3-22	SDLD001
SN74S195N	4-Bit Shift Register	3-22	SDLD001
SN74S196D	4-Bit BCD Counter	3-26	SDLD001
SN74S196FN	4-Bit BCD Counter	3-26	SDLD001
SN74S196N	4-Bit BCD Counter	3-26	SDLD001
SN74S197D	4-Bit Binary Counter	3-26	SDLD001
SN74S197FN	4-Bit Binary Counter	3-26	SDLD001
SN74S197N	4-Bit Binary Counter	3-26	SDLD001
SN74S225J	FIFO 16 × 5	10-9	SDVD001
SN74S225N	FIFO 16 × 5	10-9	SDVD001
SN74S240DW	Octal Buffer/Line Driver	3-12	SDLD001
SN74S240FN	Octal Buffer/Line Driver	3-12	SDLD001
SN74S240N	Octal Buffer/Line Driver	3-12	SDLD001
SN74S241DW	Octal Buffer/Line Driver	3-12	SDLD001
SN74S241FN	Octal Buffer/Line Driver	3-12	SDLD001
SN74S241N	Octal Buffer/Line Driver	3-12	SDLD001
SN74S244DW	Octal Buffer/Line Driver	3-12	SDLD001
SN74S244FN	Octal Buffer/Line Driver	3-12	SDLD001
SN74S244N	Octal Buffer/Line Driver	3-12	SDLD001
SN74S251D	8-1 Data Selector/Multiplexer	3-29	SDLD001
SN74S251FN	8-1 Data Selector/Multiplexer	3-29	SDLD001
SN74S251N	8-1 Data Selector/Multiplexer	3-29	SDLD001
SN74S253D	4-1 Data Selector/Multiplexer	3-28	SDLD001
SN74S253FN	4-1 Data Selector/Multiplexer	3-28	SDLD001
SN74S253N	4-1 Data Selector/Multiplexer	3-28	SDLD001
SN74S257D	Quad 2-Input Data Selector/Multiplexer	3-28	SDLD001
SN74S257FN	Quad 2-Input Data Selector/Multiplexer	3-28	SDLD001
SN74S257N	Quad 2-Input Data Selector/Multiplexer	3-28	SDLD001
SN74S258D	Quad 2-Input Data Selector/Multiplexer	3-28	SDLD001
SN74S258FN	Quad 2-Input Data Selector/Multiplexer	3-28	SDLD001
SN74S258N	Quad 2-Input Multiplexer	3-28	SDLD001
SN74S260D	Dual 5-Input NOR Gate	3-6	SDLD001
SN74S260FN	Dual 5-Input NOR Gate	3-6	SDLD001
SN74S260N	Dual 5-Input NOR Gate	3-6	SDLD001
SN74S280D	9-Bit Parity Generator/Checker	3-33	SDLD001
SN74S280FN	9-Bit Parity Generator/Checker	3-33	SDLD001
SN74S280N	9-Bit Parity Generator/Checker	3-33	SDLD001
SN74S283D	4-Bit Full Adder	3-34	SDLD001
SN74S283FN	4-Bit Full Adder	3-34	SDLD001
SN74S283N	4-Bit Full Adder	3-34	SDLD001
SN74S299DW	8-Bit Shift Register	3-22	SDLD001
SN74S299FN	8-Bit Shift Register	3-22	SDLD001
SN74S299N	8-Bit Shift Register	3-22	SDLD001
SN74S373DW	Octal D-Type Latch	3-21	SDLD001
SN74S373FN	Octal D-Type Latch	3-21	SDLD001
SN74S373N	Octal D-Type Latch	3-21	SDLD001
SN74S374DW	Octal D-Type Flip-Flop	3-18	SDLD001
SN74S374FN	Octal D-Type Flip-Flop	3-18	SDLD001
SN74S374N	Octal D-Type Flip-Flop	3-18	SDLD001
SN74S381DW	ALU/Function Generator	3-34	SDLD001
SN74S381FN	ALU/Function Generator	3-34	SDLD001
SN74S381N	ALU/Function Generator	3-34	SDLD001
SN7400D	Quad 2-Input NAND Gate	3-4	SDLD001
SN7400FN	Quad 2-Input NAND Gate	3-4	SDLD001
SN7400N	Quad 2-Input NAND Gate	3-4	SDLD001
SN7401N	Quad 2-Input NAND Gate OC	3-5	SDLD001
SN7402N	Quad 2-Input NOR Gate	3-6	SDLD001
SN7403N	Quad 2-Input NAND Gate OC	3-5	SDLD001
SN7404N	Hex Inverter	3-9	SDLD001
SN7405N	Hex Inverter OC	3-9	SDLD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN7406D	Hex Inverter OC	3-9	SDLD001
SN7406FN	Hex Inverter OC	3-9	SDLD001
SN7406N	Hex Inverter OC	3-9	SDLD001
SN7407D	Hex Buffer/Driver OC	3-10	SDLD001
SN7407FN	Hex Buffer/Driver OC	3-10	SDLD001
SN7407N	Hex Buffer/Driver OC	3-10	SDLD001
SN7408N	Quad 2-Input AND Gate	3-5	SDLD001
SN7409N	Quad 2-Input AND Gate OC	3-5	SDLD001
SN7410N	Triple 3-Input NAND Gate	3-4	SDLD001
SN7412N	Triple 3-Input NAND Gate OC	3-5	SDLD001
SN7413N	Dual 4-Input NAND Schmitt-Trigger	3-4	SDLD001
SN7414D	Hex Schmitt-Trigger Inverter	3-9	SDLD001
SN7414N	Hex Schmitt-Trigger Inverter	3-9	SDLD001
SN7416D	Hex Inverter/Driver	3-9	SDLD001
SN7416N	Hex Inverter/Driver	3-9	SDLD001
SN7417D	Hex Buffer/Driver OC	3-10	SDLD001
SN7417FN	Hex Buffer/Driver OC	3-10	SDLD001
SN7417N	Hex Buffer/Driver OC	3-10	SDLD001
SN7420N	Dual 4-Input NAND Gate	3-4	SDLD001
SN7422N	Dual 4-Input NAND Gate OC	3-5	SDLD001
SN7423N	Dual 4-Input NOR Gate with Strobe	3-8	SDLD001
SN7425D	Dual 4-Input NOR Gate	3-6	SDLD001
SN7425N	Dual 4-Input NOR Gate	3-6	SDLD001
SN7426N	Quad 2-Input NAND Gate	3-4	SDLD001
SN7427N	Triple 3-Input NOR Gate	3-6	SDLD001
SN7428N	Quad 2-Input NOR Buffer	3-6	SDLD001
SN7430N	8-Input NAND Gate	3-4	SDLD001
SN7432N	Quad 2-Input OR Gate	3-6	SDLD001
SN7433N	Quad 2-Input NOR Buffer OC	3-6	SDLD001
SN7437N	Quad 2-Input NAND Buffer	3-4	SDLD001
SN7438D	Quad 2-Input NAND Buffer OC	3-4	SDLD001
SN7438N	Quad 2-Input NAND Buffer OC	3-4	SDLD001
SN7439D	Quad 2-Input NAND Buffer OC	3-4	SDLD001
SN7439N	Quad 2-Input NAND Buffer OC	3-4	SDLD001
SN7440N	Dual 4-Input NAND Buffer	3-4	SDLD001
SN7442AN	BCD-to-Decimal Decoder	3-30	SDLD001
SN7445N	BCD-to-Decimal Decoder/Driver	3-30	SDLD001
SN7446AN	BCD-7-Segment Decoder/Driver	3-30	SDLD001
SN7447AN	BCD-7-Segment Decoder/Driver	3-30	SDLD001
SN7450N	Dual AND-OR-Invert Gate	3-8	SDLD001
SN7451N	Dual AND-OR-Invert Gate	3-7	SDLD001
SN7454N	AND-OR-Invert Gate	3-7	SDLD001
SN7470N	AND-Gated J-K Flip-Flop	3-17	SDLD001
SN7473N	Dual J-K Flip-Flop	3-17	SDLD001
SN7474D	Dual D-Type Flip-Flop	3-17	SDLD001
SN7474N	Dual D-Type Flip-Flop	3-17	SDLD001
SN7475N	4-Bit Latch	3-20	SDLD001
SN7476N	Dual J-K Flip-Flop	3-17	SDLD001
SN7483AN	4-Bit Binary Adder	3-34	SDLD001
SN7485N	4-Bit Magnitude Comparator	3-32	SDLD001
SN7486N	Quad 2-Input Exclusive OR Gate	3-7	SDLD001
SN7492AN	Divide-by-12 Counter	3-26	SDLD001
SN7493AN	4-Bit Binary Counter	3-26	SDLD001
SN7495AN	4-Bit Shift Register	3-22	SDLD001
SN7496N	5-Bit Shift Register	3-22	SDLD001
SN7497N	Binary Rate Multiplier	3-27	SDLD001
SN74107N	Dual J-K Flip-Flop	3-17	SDLD001
SN74109N	Dual J-K Flip-Flop	3-17	SDLD001
SN74116N	Dual 4-Bit Latch	3-21	SDLD001
SN74120N	Dual Pulse Synchronizer/Driver	3-16	SDLD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74121D	One-Shot Multivibrator	3-20	SDLD001
SN74121N	One-Shot Multivibrator	3-20	SDLD001
SN74122N	One-Shot Multivibrator	3-20	SDLD001
SN74123N	Dual Monostable Multivibrator	3-20	SDLD001
SN74125N	Quad 3-State Buffer	3-12	SDLD001
SN74126N	Quad 3-State Buffer	3-12	SDLD001
SN74128D	50 Ohm Line Driver	3-16	SDLD001
SN74128N	50 Ohm Line Driver	3-16	SDLD001
SN74132N	Quad 2-Input NAND Schmitt-Trigger	3-4	SDLD001
SN74136N	Quad 2-Input Exclusive OR Gate OC	3-7	SDLD001
SN74143N	4-Bit Counter/Latch/Lamp Driver	3-31	SDLD001
SN74145N	BCD-to-Decimal Decoder/Driver	3-30	SDLD001
SN74147N	10-to-4 Line Encoder	3-29	SDLD001
SN74148N	8-to-3 Line Encoder	3-29	SDLD001
SN74150DW	Data Selector/Multiplexer	3-29	SDLD001
SN74150N	Data Selector/Multiplexer	3-29	SDLD001
SN74151AN	8-1 Data Selector/Multiplexer	3-29	SDLD001
SN74153N	Dual 4-1 Data Selector/Multiplexer	3-28	SDLD001
SN74154DW	4-to-16 Line Decoder	3-30	SDLD001
SN74154N	4-to-16 Line Decoder	3-30	SDLD001
SN74155N	Dual 1-4 Decoder	3-30	SDLD001
SN74156N	Dual 1-4 Decoder OC	3-30	SDLD001
SN74157N	Quad 2-1 Data Selector/Multiplexer	3-28	SDLD001
SN74159N	4-16 Line Decoder/Demultiplexer	3-30	SDLD001
SN74160N	4-Bit Synchronous Decade Counter	3-25	SDLD001
SN74161D	4-Bit Synchronous Binary Counter	3-25	SDLD001
SN74161FN	4-Bit Synchronous Binary Counter	3-25	SDLD001
SN74161N	4-Bit Synchronous Binary Counter	3-25	SDLD001
SN74163N	4-Bit Binary Counter	3-25	SDLD001
SN74164N	8-Bit Shift Register	3-22	SDLD001
SN74165N	8-Bit Shift Register	3-22	SDLD001
SN74166N	8-Bit Shift Register	3-22	SDLD001
SN74167N	Synchronous Rate Multiplexer	3-27	SDLD001
SN74170N	4-BY-4 Register File	3-23	SDLD001
SN74172N	16-Bit Register File	3-23	SDLD001
SN74173N	4-Bit D-Type Register	3-24	SDLD001
SN74174N	Hex D-Type Flip-Flop	3-18	SDLD001
SN74175N	Quad D-Type Flip-Flop	3-18	SDLD001
SN74176N	4-Bit BCD Counter	3-26	SDLD001
SN74177N	4-Bit Binary Counter	3-26	SDLD001
SN74180D	Parity Generator/Checker	3-33	SDLD001
SN74180N	Parity Generator/Checker	3-33	SDLD001
SN74190N	Synchronous Up/Down Decade Counter	3-25	SDLD001
SN74191N	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN74192N	Synchronous Up/Down Decade Counter	3-25	SDLD001
SN74193N	Synchronous Up/Down Binary Counter	3-26	SDLD001
SN74194N	4-Bit Universal Shift Register	3-22	SDLD001
SN74195N	4-Bit Shift Register	3-22	SDLD001
SN74196N	4-Bit BCD Counter	3-26	SDLD001
SN74197N	4-Bit Binary Counter	3-26	SDLD001
SN74198N	8-Bit Shift Register	3-22	SDLD001
SN74199N	8-Bit Shift Register	3-22	SDLD001
SN74221N	Dual Monostable Multivibrator	3-20	SDLD001
SN74251N	8-1 Data Selector/Multiplexer	3-29	SDLD001
SN74259N	8-Bit Addressable Latch	3-21	SDLD001
SN74265N	Quad AND/NAND Gate	3-8	SDLD001
SN74273N	Octal D-Type Flip-Flop	3-18	SDLD001
SN74276N	Quad J-K Flip-Flop	3-18	SDLD001
SN74279N	Quad Set/Reset Latch	3-20	SDLD001
SN74283N	4-Bit Full Adder	3-34	SDLD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN74293N	4-Bit Binary Counter	3-26	SDLD001
SN74298N	Quad 2-Input Multiplexer	3-28	SDLD001
SN74365AN	Hex Bus Driver	3-10	SDLD001
SN74366AN	Hex Bus Driver	3-10	SDLD001
SN74367AN	Hex Bus Driver	3-10	SDLD001
SN74368AN	Hex Bus Driver	3-10	SDLD001
SN74376N	Quad J-K Flip-Flop	3-18	SDLD001
SN74390N	4-Bit Decade Counter	3-26	SDLD001
SN74393N	4-Bit Binary Counter	3-26	SDLD001
SN75ALS056DW	Bus Transceiver	6-5	SLLS028A
SN75ALS056N	Bus Transceiver	6-5	SLLS028A
SN75ALS057DW	Bus Transceiver	6-5	SLLS028A
SN75ALS057N	Bus Transceiver	6-5	SLLS028A
SN75ALS121D	Line Driver	6-2	SLLS030
SN75ALS121J	Line Driver	6-2	SLLS030
SN75ALS121N	Line Driver	6-2	SLLS030
SN75ALS123D	Line Receiver	6-3	SLLS031
SN75ALS123J	Line Receiver	6-3	SLLS031
SN75ALS123N	Line Receiver	6-3	SLLS031
SN75ALS126D	Line Driver	6-2	SLYD002
SN75ALS126N	Line Driver	6-2	SLYD002
SN75ALS127D	Line Receiver	6-3	SLLS027
SN75ALS127J	Line Receiver	6-3	SLLS027
SN75ALS127N	Line Receiver	6-3	SLLS027
SN75ALS130D	Line Driver	6-2	SLYD002
SN75ALS130N	Line Driver	6-2	SLYD002
SN75ALS160	Bus Transceiver	6-5	SLYD002
SN75ALS161DW	Bus Transceiver	6-5	SLYD002
SN75ALS161J	Bus Transceiver	6-5	SLYD002
SN75ALS161N	Bus Transceiver	6-5	SLYD002
SN75ALS162DW	Bus Transceiver	6-5	SLYD002
SN75ALS162N	Bus Transceiver	6-5	SLYD002
SN75ALS163DW	Bus Transceiver	6-5	SLYD002
SN75ALS163J	Bus Transceiver	6-5	SLYD002
SN75ALS163N	Bus Transceiver	6-5	SLYD002
SN75ALS164DW	Bus Transceiver	6-5	SLYD002
SN75ALS164N	Bus Transceiver	6-5	SLYD002
SN75ALS165DW	Bus Transceiver	6-5	SLYD002
SN75ALS165J	Bus Transceiver	6-5	SLYD002
SN75ALS165N	Bus Transceiver	6-5	SLYD002
SN75ALS192D	Line Driver	6-2	SLYD002
SN75ALS192J	Line Driver	6-2	SLYD002
SN75ALS192N	Line Driver	6-2	SLYD002
SN75ALS193J	Line Receiver	6-3	SLYD002
SN75ALS194D	Line Driver	6-2	SLYD002
SN75ALS194J	Line Driver	6-2	SLYD002
SN75ALS194N	Line Driver	6-2	SLYD002
SN75ALS195J	Line Receiver	6-3	SLYD002
SN28827	Sonar Ranging Module	7-22	SLYD001
SN28828	Sonar Ranging Module	7-22	SLSS001
SN55107AFK	Line Receiver	6-4,6-11	SLYD002
SN55107AJ	Line Receiver	6-4,6-11	SLYD002
SN55107BFK	Line Receiver	6-4,6-11	SLYD002
SN55107BJ	Line Receiver	6-4,6-11	SLYD002
SN55108AFK	Line Receiver	6-4,6-11	SLYD002
SN55108AJ	Line Receiver	6-4,6-11	SLYD002
SN55108BFK	Line Receiver	6-4,6-11	SLYD002
SN55108BJ	Line Receiver	6-4,6-11	SLYD002
SN55109AFK	Line Driver	6-2	SLYD002
SN55109AJ	Line Driver	6-2	SLYD002

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN55110AFK	Line Driver	6-2	SLYD002
SN55110AJ	Line Driver	6-2	SLYD002
SN55113FK	Line Driver	6-2	SLYD002
SN55113J	Line Driver	6-2	SLYD002
SN55113W	Line Driver	6-2	SLYD002*
SN55114FK	Line Driver	6-2	SLYD002
SN55114J	Line Driver	6-2	SLYD002
SN55114W	Line Driver	6-2	SLYD002*
SN55115FK	Line Receiver	6-4	SLYD002
SN55115J	Line Receiver	6-4	SLYD002
SN55115W	Line Receiver	6-4	SLYD002*
SN55116FK	Line Transceiver	6-5	SLYD002
SN55116J	Line Transceiver	6-5	SLYD002
SN55117FK	Line Transceiver	6-5	SLYD002
SN55117JG	Line Transceiver	6-5	SLYD002
SN55118FK	Line Transceiver	6-5	SLYD002
SN55118J	Line Transceiver	6-5	SLYD002
SN55119FK	Line Transceiver	6-5	SLYD002
SN55119JG	Line Transceiver	6-5	SLYD002
SN55121FK	Line Driver	6-2	SLYD002
SN55121J	Line Driver	6-2	SLYD002
SN55122FK	Line Receiver	6-3	SLYD002
SN55122J	Line Receiver	6-3	SLYD002
SN55138FK	Bus Transceiver	6-5	SLYD002
SN55138J	Bus Transceiver	6-5	SLYD002
SN55150FK	Line Driver	6-2	SLYD002
SN55150JG	Line Driver	6-2	SLYD002
SN55152FK	Line Receiver	6-3	SLYD002
SN55152J	Line Receiver	6-3	SLYD002
SN55154FK	Line Receiver	6-3	SLYD002
SN55154J	Line Receiver	6-3	SLYD002
SN55157FK	Line Receiver	6-3	SLYD002*
SN55157JG	Line Receiver	6-3	SLYD002
SN55173FK	Line Receiver	6-3	SLYD002*
SN55173J	Line Receiver	6-3	SLYD002*
SN55182FK	Line Receiver	6-4	SLYD002
SN55182J	Line Receiver	6-4	SLYD002
SN55182W	Line Receiver	6-4	SLYD002*
SN55183FK	Line Driver	6-2	SLYD002
SN55183J	Line Driver	6-2	SLYD002
SN55183W	Line Driver	6-2	SLYD002*
SN55188FK	Line Driver	6-2	SLYD002
SN55188J	Line Driver	6-2	SLYD002
SN55189AFK	Line Receiver	6-3	SLYD002
SN55189AJ	Line Receiver	6-3	SLYD002
SN55189FK	Line Receiver	6-3	SLYD002
SN55189J	Line Receiver	6-3	SLYD002
SN55234J	Sense Amplifier	—	SLYD002
SN55234W	Sense Amplifier	—	SLYD002*
SN55325J	Memory Core Driver	—	SLYD002
SN55325W	Memory Core Driver	—	SLYD002*
SN55326J	Memory Core Driver	—	SLYD002
SN55326W	Memory Core Driver	—	SLYD002*
SN55327J	Memory Core Driver	—	SLYD002
SN55327W	Memory Core Driver	—	SLYD002*
SN55365FK	Quad NAND TTL-to-MOS Driver	—	LCC5921
SN55365J	Quad NAND TTL-to-MOS Driver	—	LCC5921
SN55426BJ	AC Plasma Display Driver	—	SLYD002
SN55427BJ	AC Plasma Display Driver	—	SLYD002
SN55450BFK	Actuator/Driver	—	SLYD002

*Use TI Reference Document for Electrical Parameters.

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN55450BJ	Actuator/Driver	—	SLYD002
SN55451BFK	Actuator/Driver	6-9	SLYD002
SN55451BJG	Actuator/Driver	6-9	SLYD002
SN55452BFK	Actuator/Driver	6-9	SLYD002
SN55452BJG	Actuator/Driver	6-9	SLYD002
SN55453BFK	Actuator/Driver	6-9	SLYD002
SN55453BJG	Actuator/Driver	6-9	SLYD002
SN55454BFK	Actuator/Driver	6-9	SLYD002
SN55454BJG	Actuator/Driver	6-9	SLYD002
SN55461FK	Actuator/Driver	6-9	SLYD002
SN55461JG	Actuator/Driver	6-9	SLYD002
SN55462FK	Actuator/Driver	6-9	SLYD002
SN55462JG	Actuator/Driver	6-9	SLYD002
SN55463FK	Actuator/Driver	6-9	SLYD002
SN55463JG	Actuator/Driver	6-9	SLYD002
SN55464FK	Actuator/Driver	—	SLYD002
SN55464JG	Actuator/Driver	—	SLYD002
SN55471FK	Actuator/Driver	6-10	SLYD002
SN55471JG	Actuator/Driver	6-10	SLYD002
SN55472FK	Actuator/Driver	6-10	SLYD002
SN55472JG	Actuator/Driver	6-10	SLYD002
SN55473FK	Actuator/Driver	6-10	SLYD002
SN55473JG	Actuator/Driver	6-10	SLYD002
SN55474FK	Actuator/Driver	—	SLYD002
SN55474JG	Actuator/Driver	—	SLYD002
SN55500EFD	AC Plasma Display Driver	6-8	SLYD002
SN55500EJD	AC Plasma Display Driver	6-8	SLYD002
SN55501EFD	AC Plasma Display Driver	6-8	SLYD002
SN55501EJD	AC Plasma Display Driver	6-8	SLYD002
SN55551FD	Display Driver	6-6	SLYD002
SN55552FD	Display Driver	6-6	SLYD002
SN55553FD	Display Driver	6-6	SLYD002
SN55554FD	Display Driver	6-6	SLYD002
SN65176BD	Bus Transceiver	6-5	SLYD002
SN65176BP	Bus Transceiver	6-5	SLYD002
SN65500EN	Display Driver	6-8	SLYD002
SN65500FN	Display Driver	6-8	SLYD002
SN65501EFN	Display Driver	6-8	SLYD002
SN65501EN	Display Driver	6-8	SLYD002
SN65508FN	Display Driver	—	SLYD002
SN65509FN	Display Driver	—	SLYD002
SN65512BN	Display Driver	6-7	SLYD002
SN65513BN	Display Driver	6-7	SLYD002
SN65518FN	Display Driver	6-7	SLYD002
SN65518N	Display Driver	6-7	SLYD002
SN65551FN	Display Driver	6-6	SLYD002
SN65551N	Display Driver	6-6	SLYD002
SN65552FN	Display Driver	6-6	SLYD002
SN65552N	Display Driver	6-6	SLYD002
SN65553FN	Display Driver	6-6	SLYD002
SN65553N	Display Driver	6-6	SLYD002
SN65554FN	Display Driver	6-6	SLYD002
SN65554N	Display Driver	6-6	SLYD002
SN65555FN	Display Driver	6-6	SLYD002
SN65555N	Display Driver	6-6	SLYD002
SN65556FN	Display Driver	6-6	SLYD002
SN65556N	Display Driver	6-6	SLYD002
SN65563FN	Display Driver	6-6	SLYD002
SN65564FN	Display Driver	6-6	SLYD002
SN65567FN	Display Driver	6-6	SLYD002

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN65568FN	Display Driver	6-6	SLYD002
SN75061DW	Driver/Receiver Pair with Squelch	6-5	SLYD002
SN75061N	Driver/Receiver Pair with Squelch	6-5	SLYD002
SN75062DW	Driver/Receiver Pair with Squelch	6-5	SLLS029
SN75062N	Driver/Receiver Pair with Squelch	6-5	SLLS029
SN75064NE	Actuator/Driver	6-9	SLYD002
SN75065NE	Actuator/Driver	6-9	SLYD002
SN75066NE	Actuator/Driver	6-9	SLYD002
SN75067NE	Actuator/Driver	6-9	SLYD002
SN75068NE	Actuator/Driver	6-9	SLYD002
SN75069NE	Actuator/Driver	6-9	SLYD002
SN75107AD	Line Receiver	6-4,6-11	SLYD002
SN75107AJ	Line Receiver	6-4,6-11	SLYD002
SN75107AN	Line Receiver	6-4,6-11	SLYD002
SN75107BD	Line Receiver	6-4,6-11	SLYD002
SN75107BJ	Line Receiver	6-4,6-11	SLYD002
SN75107BN	Line Receiver	6-4,6-11	SLYD002
SN75108AD	Line Receiver	6-4,6-11	SLYD002
SN75108AJ	Line Receiver	6-4,6-11	SLYD002
SN75108AN	Line Receiver	6-4,6-11	SLYD002
SN75108BD	Line Receiver	6-4,6-11	SLYD002
SN75108BJ	Line Receiver	6-4,6-11	SLYD002
SN75108BN	Line Receiver	6-4,6-11	SLYD002
SN75109AD	Line Receiver	6-2	SLYD002
SN75109AJ	Line Driver	6-2	SLYD002
SN75109AN	Line Driver	6-2	SLYD002
SN75110AD	Line Driver	6-2	SLYD002
SN75110AJ	Line Driver	6-2	SLYD002
SN75110AN	Line Driver	6-2	SLYD002
SN75111D	Line Driver	6-2	SLYD002
SN75111J	Line Driver	6-2	SLYD002
SN75111N	Line Driver	6-2	SLYD002
SN75112D	Line Driver	6-2	SLYD002
SN75112J	Line Driver	6-2	SLYD002
SN75112N	Line Driver	6-2	SLYD002
SN75113D	Line Driver	6-2	SLYD002
SN75113J	Line Driver	6-2	SLYD002
SN75113N	Line Driver	6-2	SLYD002
SN75114FK	Line Driver	6-2	SLYD002
SN75114J	Line Driver	6-2	SLYD002
SN75114N	Line Driver	6-2	SLYD002
SN75115D	Line Receiver	6-4	SLYD002
SN75115J	Line Receiver	6-4	SLYD002
SN75115N	Line Receiver	6-4	SLYD002
SN75116D	Line Transceiver	6-5	SLYD002
SN75116J	Line Transceiver	6-5	SLYD002
SN75116N	Line Transceiver	6-5	SLYD002
SN75117D	Line Transceiver	6-5	SLYD002
SN75117JG	Line Transceiver	6-5	SLYD002
SN75117P	Line Transceiver	6-5	SLYD002
SN75118D	Line Transceiver	6-5	SLYD002
SN75118J	Line Transceiver	6-5	SLYD002
SN75118N	Line Transceiver	6-5	SLYD002
SN75119D	Line Transceiver	6-5	SLYD002
SN75119JG	Line Transceiver	6-5	SLYD002
SN75119P	Line Transceiver	6-5	SLYD002
SN75121D	Line Driver	6-2	SLYD002
SN75121J	Line Driver	6-2	SLYD002
SN75121N	Line Driver	6-2	SLYD002
SN75122D	Line Receiver	6-3	SLYD002

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN75122J	Line Receiver	6-3	SLYD002
SN75122N	Line Receiver	6-3	SLYD002
SN75123D	Line Driver	6-2	SLYD002
SN75123J	Line Driver	6-2	SLYD002
SN75123N	Line Driver	6-2	SLYD002
SN75124D	Line Receiver	6-3	SLYD002
SN75124J	Line Receiver	6-3	SLYD002
SN75124N	Line Receiver	6-3	SLYD002
SN75125D	Line Receiver	6-3	SLYD002
SN75125J	Line Receiver	6-3	SLYD002
SN75125N	Line Receiver	6-3	SLYD002
SN75127D	Line Receiver	6-3	SLYD002
SN75127J	Line Receiver	6-3	SLYD002
SN75127N	Line Receiver	6-3	SLYD002
SN75128J	Line Receiver	6-3	SLYD002
SN75128N	Line Receiver	6-3	SLYD002
SN75129J	Line Receiver	6-3	SLYD002
SN75129N	Line Receiver	6-3	SLYD002
SN75136D	Bus Transceiver	6-5	SLYD002
SN75136J	Bus Transceiver	6-5	SLYD002
SN75136N	Bus Transceiver	6-5	SLYD002
SN75138D	Bus Transceiver	6-5	SLYD002
SN75138J	Bus Transceiver	6-5	SLYD002
SN75138N	Bus Transceiver	6-5	SLYD002
SN75140D	Line Receiver	6-3	SLYD002
SN75140JG	Line Receiver	6-3	SLYD002
SN75140P	Line Receiver	6-3	SLYD002
SN75141D	Line Receiver	6-3	SLYD002
SN75141JG	Line Receiver	6-3	SLYD002
SN75141P	Line Receiver	6-3	SLYD002
SN75146D	Line Receiver	6-3	SLYD002
SN75146P	Line Receiver	6-3	SLYD002
SN75150D	Line Driver	6-2	SLYD002
SN75150JG	Line Driver	6-2	SLYD002
SN75150P	Line Driver	6-2	SLYD002
SN75151J	Line Driver	6-2	SLYD002
SN75151N	Line Driver	6-2	SLYD002
SN75152D	Line Receiver	6-3	SLYD002
SN75152J	Line Receiver	6-3	SLYD002
SN75152N	Line Receiver	6-3	SLYD002
SN75153J	Line Driver	6-2	SLYD002
SN75153N	Line Driver	6-2	SLYD002
SN75154D	Line Receiver	6-3	SLYD002
SN75154J	Line Receiver	6-3	SLYD002
SN75154N	Line Receiver	6-3	SLYD002
SN75155D	Line Driver and Receiver	6-5	SLYD002
SN75155P	Line Driver and Receiver	6-5	SLYD002
SN75157D	Line Receiver	6-3	SLYD002
SN75157JG	Line Receiver	6-3	SLYD002
SN75157P	Line Receiver	6-3	SLYD002
SN75158D	Line Driver	6-2	SLYD002
SN75158JG	Line Driver	6-2	SLYD002
SN75158P	Line Driver	6-2	SLYD002
SN75159D	Line Driver	6-2	SLYD002
SN75159J	Line Driver	6-2	SLYD002
SN75159N	Line Driver	6-2	SLYD002
SN75160AN	Bus Transceiver	6-5	SLYD002
SN75160BN	Bus Transceiver	6-5	SLYD002
SN75161AN	Bus Transceiver	6-5	SLYD002
SN75161BDW	Bus Transceiver	6-5	SLYD002

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN75161BJ	Bus Transceiver	6-5	SLYD002
SN75161BN	Bus Transceiver	6-5	SLYD002
SN75162AN	Bus Transceiver	6-5	SLYD002
SN75162BN	Bus Transceiver	6-5	SLYD002
SN75163AN	Bus Transceiver	6-5	SLYD002
SN75163BDW	Bus Transceiver	6-5	SLYD002
SN75163BJ	Bus Transceiver	6-5	SLYD002
SN75163BN	Bus Transceiver	6-5	SLYD002
SN75164BN	Bus Transceiver	6-5	SLYD002
SN75172J	Line Driver	6-2	SLYD002
SN75172N	Line Driver	6-2	SLYD002
SN75173D	Line Receiver	6-3	SLYD002
SN75173J	Line Receiver	6-3	SLYD002
SN75173N	Line Receiver	6-3	SLYD002
SN75174J	Line Driver	6-2	SLYD002
SN75174N	Line Driver	6-2	SLYD002
SN75175D	Line Receiver	6-3	SLYD002
SN75175J	Line Receiver	6-3	SLYD002
SN75175N	Line Receiver	6-3	SLYD002
SN75176BD	Bus Transceiver	6-5	SLYD002
SN75176BP	Bus Transceiver	6-5	SLYD002
SN75177BD	Bus Repeater	6-5	SLYD002
SN75177BP	Bus Repeater	6-5	SLYD002
SN75178BD	Bus Repeater	6-5	SLYD002
SN75178BP	Bus Repeater	6-5	SLYD002
SN75179BD	Line Driver and Receiver Pair	6-5	SLYD002
SN75179BP	Line Driver and Receiver Pair	6-5	SLYD002
SN75182D	Line Receiver	6-4	SLYD002
SN75182J	Line Receiver	6-4	SLYD002
SN75182N	Line Receiver	6-4	SLYD002
SN75183D	Line Driver	6-2	SLYD002
SN75183J	Line Driver	6-2	SLYD002
SN75183N	Line Driver	6-2	SLYD002
SN75188D	Line Driver	6-2	SLYD002
SN75188J	Line Driver	6-2	SLYD002
SN75188N	Line Driver	6-2	SLYD002
SN75189AD	Line Receiver	6-3	SLYD002
SN75189AJ	Line Receiver	6-3	SLYD002
SN75189AN	Line Receiver	6-3	SLYD002
SN75189D	Line Receiver	6-3	SLYD002
SN75189J	Line Receiver	6-3	SLYD002
SN75189N	Line Receiver	6-3	SLYD002
SN75207BD	Line Receiver	6-4,6-11	SLYD002
SN75207BJ	Line Receiver	6-4,6-11	SLYD002
SN75207BN	Line Receiver	6-4,6-11	SLYD002
SN75207D	Line Receiver	6-4,6-11	SLYD002
SN75207J	Line Receiver	6-4,6-11	SLYD002
SN75207N	Line Receiver	6-4,6-11	SLYD002
SN75208BD	Sense Amp or Line Receiver	6-4,6-11	SLYD002
SN75208BJ	Sense Amp or Line Receiver	6-4,6-11	SLYD002
SN75208BN	Sense Amp or Line Receiver	6-4,6-11	SLYD002
SN75208D	Sense Amp or Line Receiver	6-4,6-11	SLYD002
SN75208J	Sense Amp or Line Receiver	6-4,6-11	SLYD002
SN75208N	Sense Amp or Line Receiver	6-4,6-11	SLYD002
SN75372D	MOSFET Driver	6-9	SLYD002
SN75372P	MOSFET Driver	6-9	SLYD002
SN75374D	MOSFET Driver	6-9	SLYD002
SN75374N	MOSFET Driver	6-9	SLYD002
SN75407P	Actuator/Driver	6-9	SLYD002
SN75408P	Actuator/Driver	6-9	SLYD002

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN75512BDW	Display Driver	6-7	SLYD002
SN75512BN	Display Driver	6-7	SLYD002
SN75513BDW	Display Driver	6-7	SLYD002
SN75513BN	Display Driver	6-7	SLYD002
SN75514N	Display Driver	6-7	SLYD002
SN75518FN	Display Driver	6-7	SLYD002
SN75518N	Display Driver	6-7	SLYD002
SN75551FN	Display Driver	6-6	SLYD002
SN75551N	Display Driver	6-6	SLYD002
SN75552FN	Display Driver	6-6	SLYD002
SN75552N	Display Driver	6-6	SLYD002
SN75553FN	Display Driver	6-6	SLYD002
SN75553N	Display Driver	6-6	SLYD002
SN75554FN	Display Driver	6-6	SLYD002
SN75554N	Display Driver	6-6	SLYD002
SN75555FN	Display Driver	6-6	SLYD002
SN75555N	Display Driver	6-6	SLYD002
SN75556FN	Display Driver	6-6	SLYD002
SN75556N	Display Driver	6-6	SLYD002
SN75557FN	Display Driver	6-6	SLYD002
SN75558FN	Display Driver	6-6	SLYD002
SN75563FN	Display Driver	6-6	SLYD002
SN75564FN	Display Driver	6-6	SLYD002
SN75567FN	Display Driver	6-6	SLYD002
SN75568FN	Display Driver	6-6	SLYD002
SN75581J	Display Driver	6-8	SLYD002
SN75581N	Display Driver	6-8	SLYD002
SN75603KC	Motor Driver	6-10	SLYD002
SN75603KH	Motor Driver	6-10	SLYD002
SN75603KV	Motor Driver	6-10	SLYD002
SN75604KC	Motor Driver	6-10	SLYD002
SN75604KH	Motor Driver	6-10	SLYD002
SN75604KV	Motor Driver	6-10	SLYD002
SN75605KC	Motor Driver	6-10	SLYD002
SN75605KH	Motor Driver	6-10	SLYD002
SN75605KV	Motor Driver	6-10	SLYD002
SN75608KV	Flux-Regulating Actuator	6-10	SLYD002
SN75609KV	Flux-Regulating Actuator	6-10	SLYD002
SN76494N	Sound Generator	7-22	SLFS013
SN76496N	Sound Generator	7-22	SLFS013
SN95160BFK	Octal Bus Transceiver	—	SGLS014
SN95160BJ	Octal Bus Transceiver	—	SGLS014
SN95161BFK	Octal Bus Transceiver	—	SGLS015
SN95161BJ	Octal Bus Transceiver	—	SGLS015
SN751506FT	Display Driver	6-8	SLYD002
SN751508FT	Display Driver	6-8	SLYD001
SN751516FT	Display Driver	6-8	SLYD002
SN751518FT	Display Driver	6-8	SLYD002
SN754410NE	Motor Driver	6-10	SLYD002
SN754411NE	Motor Driver	6-10	SLYD002
TACT1010-65JD	16 × 16 Multiplier/Accumulator	3-34	SCSS002
TACT2150-20JD	Cache Address Comparator 512 × 9	4-61	SCSS003B
TACT2150-30JD	Cache Address Comparator 512 × 9	4-61	SCSS003B
TCK102	TC102 Evaluation Kit	8-2	SOYD002
TCK103	TC103 Evaluation Kit	8-2	SOYD002
TCK104	TC104 Evaluation Kit	8-2	SOYD002
TCK106-1	Image Sensor Evaluation Kit	8-2	SOYD002
TCM29C13DW	PCM CODEC and Filter	9-4	SCTD001
TCM29C13J	PCM CODEC and Filter	9-4	SCTD001
TCM29C14DW	PCM CODEC and Filter	9-4	SCTD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
SN75435NE	Actuator/Driver	6-9	SLYD002
SN75436NE	Actuator/Driver	6-9	SLYD002
SN75437ANE	Actuator/Driver	6-9	SLYD002
SN75438NE	Actuator/Driver	6-9	SLYD002
SN75440NE	Actuator/Driver	6-9	SLYD002
SN75446D	Actuator/Driver	6-9	SLYD002
SN75446P	Actuator/Driver	6-9	SLYD002
SN75447D	Actuator/Driver	6-9	SLYD002
SN75447P	Actuator/Driver	6-9	SLYD002
SN75448D	Actuator/Driver	6-9	SLYD002
SN75448P	Actuator/Driver	6-9	SLYD002
SN75449D	Actuator/Driver	6-9	SLYD002
SN75449P	Actuator/Driver	6-9	SLYD002
SN75451BD	Actuator/Driver	6-9	SLYD002
SN75451BP	Actuator/Driver	6-9	SLYD002
SN75452BD	Actuator/Driver	6-9	SLYD002
SN75452BP	Actuator/Driver	6-9	SLYD002
SN75453BD	Actuator/Driver	6-9	SLYD002
SN75453BP	Actuator/Driver	6-9	SLYD002
SN75454BD	Actuator/Driver	6-9	SLYD002
SN75454BP	Actuator/Driver	6-9	SLYD002
SN75461D	Actuator/Driver	6-9	SLYD002
SN75461P	Actuator/Driver	6-9	SLYD002
SN75462D	Actuator/Driver	6-9	SLYD002
SN75462P	Actuator/Driver	6-9	SLYD002
SN75463D	Actuator/Driver	6-9	SLYD002
SN75463P	Actuator/Driver	6-9	SLYD002
SN75465D	Actuator/Driver	6-10	SLYD002
SN75465J	Actuator/Driver	6-10	SLYD002
SN75465N	Actuator/Driver	6-10	SLYD002
SN75466D	Actuator/Driver	6-10	SLYD002
SN75466J	Actuator/Driver	6-10	SLYD002
SN75466N	Actuator/Driver	6-10	SLYD002
SN75467D	Actuator/Driver	6-10	SLYD002
SN75467N	Actuator/Driver	6-10	SLYD002
SN75468D	Actuator/Driver	6-10	SLYD002
SN75468N	Actuator/Driver	6-10	SLYD002
SN75469D	Actuator/Driver	6-10	SLYD002
SN75469N	Actuator/Driver	6-10	SLYD002
SN75471D	Actuator/Driver	6-10	SLYD002
SN75471P	Actuator/Driver	6-10	SLYD002
SN75472D	Actuator/Driver	6-10	SLYD002
SN75472P	Actuator/Driver	6-10	SLYD002
SN75473D	Actuator/Driver	6-10	SLYD002
SN75473P	Actuator/Driver	6-10	SLYD002
SN75476D	Actuator/Driver	6-10	SLYD002
SN75476P	Actuator/Driver	6-10	SLYD002
SN75477D	Actuator/Driver	6-10	SLYD002
SN75477P	Actuator/Driver	6-10	SLYD002
SN75478D	Actuator/Driver	6-10	SLYD002
SN75478P	Actuator/Driver	6-10	SLYD002
SN75479D	Actuator/Driver	6-10	SLYD002
SN75479P	Actuator/Driver	6-10	SLYD002
SN75494N	Display Driver	6-7	SLYD002
SN75500EFN	Display Driver	6-8	SLYD002
SN75500EN	Display Driver	6-8	SLYD002
SN75501EFN	Display Driver	6-8	SLYD002
SN75501EN	Display Driver	6-8	SLYD002
SN75508FN	Display Driver	6-8	SLYD002
SN75509FN	Display Driver	6-8	SLYD002

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
TCM29C14J	PCM CODEC and Filter	9-4	SCTD001
TCM29C16J	PCM CODEC and Filter	9-4	SCTD001
TCM29C16N	PCM CODEC and Filter	9-4	SCTD001
TCM29C17J	PCM CODEC and Filter	9-4	SCTD001
TCM29C17N	PCM CODEC and Filter	9-4	SCTD001
TCM29C18	Digital Signal Processor	7-15,9-4	SCTS021
TCM29C19	Digital Signal Processor	7-15,9-4	SCTS021
TCM1501BP	Telephone Ringer Driver	9-5	SCTS020
TCM1506BP	Telephone Ringer Driver	9-5	SCTD001
TCM1512B	Ring Detector	9-5	SCTD001
TCM1520AP	Ring Detector	9-5	SCTD001
TCM1531P	Tone Ringer Driver	9-5	SCTS020
TCM1532P	Tone Ringer Driver	9-5	SCTS020
TCM1536P	Tone Ringer Driver	9-5	SCTS020
TCM1539P	Tone Ringer Driver	9-5	SCTD001
TCM2202J	Encoder/Decoder AMI/HDB3	9-2	SCTD001
TCM2203J	Equipment Line Interface	9-2	SCTD001
TCM2222J	Encoder/Decoder, AMI/HDB3	9-2	SCTD001
TCM2909	PCM CODEC	9-3	SCTD001
TCM2910AJ	PCM CODEC	9-3	SCTD001
TCM2910AN	PCM CODEC	9-3	SCTD001
TCM2912BJ	PCM Line Filter	9-3	SCTD001
TCM2912CJ	PCM Line Filter	9-3	SCTD001
TCM2913J	PCM CODEC and Filter	9-3	SCTD001
TCM2913J-3	PCM CODEC and Filter	9-3	SCTD001
TCM2914J	PCM CODEC and Filter	9-3	SCTD001
TCM2916J	PCM CODEC and Filter	9-3	SCTD001
TCM2917J	PCM CODEC and Filter	9-3	SCTD001
TCM3105JE	FSK Modem	9-4	SCTD001
TCM3105JL	FSK Modem	9-4	SCTD001
TCM4204AJ	Subscriber-Line Control Circuit	9-5	SCTD001
TCM4204J	Subscriber-Line Control Circuit	9-5	SCTD001
TCM4205AJ	Subscriber-Line Control Circuit	9-5	SCTD001
TCM4205J	Subscriber-Line Control Circuit	9-5	SCTD001
TCM4207AJ	Subscriber-Line Control Circuit	9-5	SCTD001
TCM4207J	Subscriber-Line Control Circuit	9-5	SCTD001
TCM4208	Subscriber-Line Interface Circuit	9-5	SCTD001
TCM5087N	Tone Encoder	9-5	SCTD001
TCM5089N	Tone Encoder	9-5	SCTD001
TCM78808FN	Asynchronous Receiver/Transmitter	9-4	SCTS022
TCM78808HA	Asynchronous Receiver/Transmitter	9-4	SCTS022
TCM78808HB	Asynchronous Receiver/Transmitter	9-4	SCTS022
TC102	Image Sensor, Line Array	8-2	SOYD002
TC102-1	Image Sensor, Line Array	8-2	SOYD002
TC103	Image Sensor, Line Array	8-2	SOYD002
TC103-1	Image Sensor, Line Array	8-2	SOYD002
TC104	Image Sensor, Line Array	8-2	SOYD002
TC104-1	Image Sensor, Line Array	8-2	SOYD002
TC106-1	Image Sensor, Line Array	8-2	SOYD002
TC210	Area Image Sensor	8-2	SOYD002
TC211	Image Sensor, Area array	8-2	SOYD002
TC240	Image Sensor, Area array	8-2	SOYD002
TC241	Image Sensor, Area array	8-2	SOYD002
THCT1010-100JD	16 × 16 Multiplier/Accumulator	3-34	SCSS001
THCT1010-140JDE	16 × 16 Multiplier/Accumulator	3-34	SCSS001
THCT2000N	Direction Discriminator	—	SCLS044
THCT4502BFN	256K Dynamic RAM Controller	3-31	SCCS005B
THCT4502BJD	256K Dynamic RAM Controller	3-31	SCCS005B
THCT4502BN	256K Dynamic RAM Controller	3-31	SCCS005B
TIBPALR19L8CFN	High Performance PAL Circuit	3-37	SDZD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
TIBPALR19L8CNT	High Performance PAL Circuit	3-37	SDZD001B
TIBPALR19R4CFN	High Performance PAL Circuit	3-37	SDZD001B
TIBPALR19R4CNT	High Performance PAL Circuit	3-37	SDZD001B
TIBPALR19R6CFN	High Performance PAL Circuit	3-37	SDZD001B
TIBPALR19R6CNT	High Performance PAL Circuit	3-37	SDZD001B
TIBPALR19R8CFN	High Performance PAL Circuit	3-37	SDZD001B
TIBPALR19R8CNT	High Performance PAL Circuit	3-37	SDZD001B
TIBPALT19L8CFN	High Performance PAL Circuit	3-37	SDZD001B
TIBPALT19L8CNT	High Performance PAL Circuit	3-37	SDZD001B
TIBPALT19R4CNT	High Performance PAL Circuit	3-37	SDZD001B
TIBPALT19R6CFN	High Performance PAL Circuit	3-37	SDZD001B
TIBPALT19R6CNT	High Performance PAL Circuit	3-37	SDZD001B
TIBPALT19R8CFN	High Performance PAL Circuit	3-37	SDZD001B
TIBPALT19R8CNT	High Performance PAL Circuit	3-37	SDZD001B
TIBPAL16L8-10CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16L8-10CN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16L8-12CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16L8-12CN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16L8-15CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16L8-15CN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16L8-15FK	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16L8-15J	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16L8-15W	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16L8-20FK	High Performance PAL Circuit	—	SDZD001B
TIBPAL16L8-20J	High Performance PAL Circuit	—	SDZD001B
TIBPAL16L8-20W	High Performance PAL Circuit	—	SDZD001B
TIBPAL16L8-25CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16L8-25CN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16L8-30FK	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16L8-30J	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16L8-30W	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R4-10CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R4-10CN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R4-12CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R4-12CN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R4-15CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R4-15CN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R4-15FK	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R4-15J	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R4-15W	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R4-20FK	High Performance PAL Circuit	—	SDZD001B
TIBPAL16R4-20J	High Performance PAL Circuit	—	SDZD001B
TIBPAL16R4-20W	High Performance PAL Circuit	—	SDZD001B
TIBPAL16R4-25CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R4-25CN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R4-30FK	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R4-30J	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R4-30W	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R6-10CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R6-10CN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R6-12CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R6-12CN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R6-15CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R6-15CN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R6-15FK	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R6-15J	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R6-15W	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R6-20FK	High Performance PAL Circuit	—	SDZD001B
TIBPAL16R6-20J	High Performance PAL Circuit	—	SDZD001B
TIBPAL16R6-20W	High Performance PAL Circuit	—	SDZD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
TIBPAL16R6-25CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R6-25CN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R6-30FK	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R6-30J	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R6-30W	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R8-10CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R8-10CN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R8-12CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R8-12CN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R8-15CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R8-15CN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R8-15FK	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R8-15J	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R8-15W	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R8-20FK	High Performance PAL Circuit	—	SDZD001B
TIBPAL16R8-20J	High Performance PAL Circuit	—	SDZD001B
TIBPAL16R8-20W	High Performance PAL Circuit	—	SDZD001B
TIBPAL16R8-25CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R8-25CN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R8-30FK	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R8-30J	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL16R8-30W	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20L8-15CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20L8-15CNT	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20L8-20FK	High Performance PAL Circuit	—	SDZD001B
TIBPAL20L8-20JT	High Performance PAL Circuit	—	SDZD001B
TIBPAL20L8-25CNT	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20L10-20CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20L10-20CNT	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20L10-25FK	High Performance PAL Circuit	—	SDZD001B
TIBPAL20L10-25JT	High Performance PAL Circuit	—	SDZD001B
TIBPAL20L10-30CNT	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20R4-15CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20R4-15CNT	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20R4-20FK	High Performance PAL Circuit	—	SDZD001B
TIBPAL20R4-20JT	High Performance PAL Circuit	—	SDZD001B
TIBPAL20R4-25CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20R4-25CNT	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20R6-15CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20R6-15CNT	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20R6-20FK	High Performance PAL Circuit	—	SDZD001B
TIBPAL20R6-20JT	High Performance PAL Circuit	—	SDZD001B
TIBPAL20R6-25CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20R6-25CNT	High Performance PAL Circuit	3-36	SDPS020
TIBPAL20R8-15CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20R8-15CNT	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20R8-20FK	High Performance PAL Circuit	—	SDZD001B
TIBPAL20R8-20JT	High Performance PAL Circuit	—	SDZD001B
TIBPAL20R8-25CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20R8-25CNT	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20X4-20CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20X4-20CNT	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20X4-25FK	High Performance PAL Circuit	—	SDZD001B
TIBPAL20X4-25JT	High Performance PAL Circuit	—	SDZD001B
TIBPAL20X4-30CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20X4-30CNT	High Performance PAL Circuit	3-36	SDZD001A
TIBPAL20X8-20CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20X8-20CNT	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20X8-25FK	High Performance PAL Circuit	—	SDZD001B
TIBPAL20X8-25JT	High Performance PAL Circuit	—	SDZD001B

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
TIBPAL20X8-30CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20X8-30CNT	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20X10-20CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20X10-20CNT	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20X10-25FK	High Performance PAL Circuit	—	SDZD001B
TIBPAL20X10-25JT	High Performance PAL Circuit	—	SDZD001B
TIBPAL20X10-30CFN	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL20X10-30CNT	High Performance PAL Circuit	3-36	SDZD001B
TIBPAL22VP10-20CFN	High Performance PAL Circuit	3-37	SDZD001B
TIBPAL22VP10-20CNT	High Performance PAL Circuit	3-37	SDZD001B
TIBPAL22V10ACFN	High Performance PAL Circuit	3-37	SDZD001B
TIBPAL22V10ACNT	High Performance PAL Circuit	3-37	SDZD001B
TIBPAL22V10AFK	High Performance PAL Circuit	3-37	SDZD001B
TIBPAL22V10AJT	High Performance PAL Circuit	3-37	SDZD001B
TIBPAL22V10AW	High Performance PAL Circuit	3-37	SDZD001B
TIBPAL22V10CFN	High Performance PAL Circuit	3-37	SDZD001B
TIBPAL22V10CNT	High Performance PAL Circuit	3-37	SDZD001B
TIB82S105BCFN	High Performance PAL Circuit	3-37	SDZD001B
TIB82S105BCN	High Performance PAL Circuit	3-37	SDZD001B
TIB82S167BCFN	High Performance PAL Circuit	3-37	SDZD001B
TIB82S167BCNT	High Performance PAL Circuit	3-37	SDZD001B
TICPAL16L8-55JL	High Performance CMOS PAL Circuit	3-37	TBA
TICPAL16L8-55N	High Performance CMOS PAL Circuit	3-37	TBA
TICPAL16R4-55JL	High Performance CMOS PAL Circuit	3-37	TBA
TICPAL16R4-55N	High Performance CMOS PAL Circuit	3-37	TBA
TICPAL16R6-55JL	High Performance CMOS PAL Circuit	3-37	TBA
TICPAL16R6-55N	High Performance CMOS PAL Circuit	3-37	TBA
TICPAL16R8-55JL	High Performance CMOS PAL Circuit	3-37	TBA
TICPAL16R8-55N	High Performance CMOS PAL Circuit	3-37	TBA
TIEPAL10H16P8-6CJT	High Performance ECL PAL Circuit	—	SDPS018
TIFPLA839CFN	Field Programmable Logic Array	3-37	SDZD001B
TIFPLA839CNT	Field Programmable Logic Array	3-37	SDZD001B
TIFPLA840CFN	Field Programmable Logic Array	3-37	SDZD001B
TIFPLA840CNT	Field Programmable Logic Array	3-37	SDZD001B
TIL23	Infrared-Emitting Diode	8-7	SOYD002
TIL24	Infrared-Emitting Diode	8-7	SOYD002
TIL24HR2	Infrared-Emitting Diode	8-7	SOYD002
TIL25	Infrared-Emitting Diode	8-7	SOYD002
TIL102	Optocoupler	8-4	SOYD002
TIL103	Optocoupler	8-4	SOYD002
TIL111	Optocoupler	8-4	SOYD002
TIL112	Optocoupler	8-4	SOYD002
TIL113	Optocoupler	8-4	SOYD002
TIL114	Optocoupler	8-4	SOYD002
TIL115	Optocoupler	8-4	SOYD002
TIL116	Optocoupler	8-4	SOYD002
TIL117	Optocoupler	8-4	SOYD002
TIL118	Optocoupler	8-4	SOYD002
TIL119	Optocoupler	8-4	SOYD002
TIL119A	Optocoupler	8-4	SOYD002
TIL120	Optocoupler	8-4	SOYD002
TIL121	Optocoupler	8-4	SOYD002
TIL124	Optocoupler	8-4	SOYD002
TIL125	Optocoupler	8-4	SOYD002
TIL126	Optocoupler	8-4	SOYD002
TIL127	Optocoupler	8-5	SOYD002
TIL128	Optocoupler	8-5	SOYD002
TIL128A	Optocoupler	8-5	SOYD002
TIL153	Optocoupler	8-5	SOYD002
TIL154	Optocoupler	8-5	SOYD002

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
TIL155	Optocoupler	8-5	SOYD002
TIL156	Optocoupler	8-5	SOYD002
TIL157	Optocoupler	8-5	SOYD002
TIL157A	Optocoupler	8-5	SOYD002
TIL181	Optocoupler	8-5	SOYD002
TIL186	Optocoupler	8-5	SOYD002
TIL187	Optocoupler	8-5	SOYD002
TIL188	Optocoupler	8-5	SOYD002
TIL189	Optocoupler	8-5	SOYD002
TIL190	Optocoupler	8-5	SOYD002
TIL302	Numeric Display, LED	8-7	SOYD002
TIL302A	Numeric Display, LED	8-7	SOYD002
TIL303	Numeric Display, LED	8-7	SOYD002
TIL303A	Numeric Display, LED	8-7	SOYD002
TIL304	Numeric Display, LED	8-7	SOYD002
TIL304A	Numeric Display, LED	8-7	SOYD002
TIL305	Alphanumeric Display, LED	8-7	SOYD002
TIL306	Numeric Display, LED	8-7	SOYD002
TIL306A	Numeric Display, LED	8-7	SOYD002
TIL307	Numeric Display, LED	8-7	SOYD002
TIL307A	Numeric Display, LED	8-7	SOYD002
TIL308	Numeric Display, LED	8-7	SOYD002
TIL308A	Numeric Display, LED	8-7	SOYD002
TIL309	Numeric Display, LED	8-7	SOYD002
TIL309A	Numeric Display, LED	8-7	SOYD002
TIL311	Hexadecimal Display, LED	8-7	SOYD002
TIL311A	Hexadecimal Display, LED	8-7	SOYD002
TIL601	Phototransistor	8-7	SOYD002
TIL602	Phototransistor	8-7	SOYD002
TIL603	Phototransistor	8-7	SOYD002
TIL604	Phototransistor	8-7	SOYD002
TIL604HR2	Phototransistor	8-7	SOYD002
TLC04D	Switched-Capacitance Filter	7-15	SLYD002
TLC04N	Switched-Capacitance Filter	7-15	SLYD002
TLC04P	Switched-Capacitance Filter	7-15	SLYD002
TLC10CFN	Switched-Capacitance Filter	7-15	SLYD002
TLC10CN	Switched-Capacitance Filter	7-15	SLYD002
TLC14D	Switched-Capacitance Filter	7-15	SLYD002
TLC14N	Switched-Capacitance Filter	7-15	SLYD002
TLC20CN	Switched-Capacitance Filter	7-15	SLYD002
TLC25L2ACD	Operational Amplifier	7-7	SLYD001
TLC25L2ACP	Operational Amplifier	7-7	SLYD001
TLC25L2BCD	Operational Amplifier	7-7	SLYD001
TLC25L2BCP	Operational Amplifier	7-7	SLYD001
TLC25L2CD	Operational Amplifier	7-7	SLYD001
TLC25L2CP	Operational Amplifier	7-7	SLYD001
TLC25L4ACD	Operational Amplifier	7-9	SLYD001
TLC25L4ACN	Operational Amplifier	7-9	SLYD001
TLC25L4BCD	Operational Amplifier	7-9	SLYD001
TLC25L4BCN	Operational Amplifier	7-9	SLYD001
TLC25L4CD	Operational Amplifier	7-9	SLYD001
TLC25L4CN	Operational Amplifier	7-9	SLYD001
TLC25M2ACD	Operational Amplifier	7-7	SLYD001
TLC25M2ACP	Operational Amplifier	7-7	SLYD001
TLC25M2BCD	Operational Amplifier	7-7	SLYD001
TLC25M2BCP	Operational Amplifier	7-7	SLYD001
TLC25M2CD	Operational Amplifier	7-7	SLYD001
TLC25M2CP	Operational Amplifier	7-7	SLYD001
TLC25M4ACD	Operational Amplifier	7-9	SLYD001
TLC25M4ACN	Operational Amplifier	7-9	SLYD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
TLC25M4BCD	Operational Amplifier	7-10	SLYD001
TLC25M4BCN	Operational Amplifier	7-10	SLYD001
TLC25M4CD	Operational Amplifier	7-10	SLYD001
TLC25M4CN	Operational Amplifier	7-10	SLYD001
TLC27L2ACD	Operational Amplifier	7-7	SLO3006
TLC27L2ACP	Operational Amplifier	7-7	SLO3006
TLC27L2AID	Operational Amplifier	7-5	SLO3006
TLC27L2AIP	Operational Amplifier	7-5	SLO3006
TLC27L2AMFK	Operational Amplifier	7-5	SLO3006*
TLC27L2AMJG	Operational Amplifier	7-5	SLO3006*
TLC27L2BCD	Operational Amplifier	7-7	SLO3006
TLC27L2BCP	Operational Amplifier	7-7	SLO3006
TLC27L2BID	Operational Amplifier	7-5	SLO3006
TLC27L2BIP	Operational Amplifier	7-5	SLO3006
TLC27L2CD	Operational Amplifier	7-7	SLO3006
TLC27L2CP	Operational Amplifier	7-7	SLO3006
TLC27L2ID	Operational Amplifier	7-5	SLO3006
TLC27L2IP	Operational Amplifier	7-5	SLO3006
TLC27L2MFK	Operational Amplifier	7-5	SLO3006*
TLC27L2MJ	Operational Amplifier	7-5	SLO3006*
TLC27L4ACD	Operational Amplifier	7-10	SLO3002
TLC27L4ACN	Operational Amplifier	7-10	SLO3002
TLC27L4AID	Operational Amplifier	7-8	SLO3002
TLC27L4AIN	Operational Amplifier	7-8	SLO3002
TLC27L4AMFK	Operational Amplifier	7-8	SLO3002*
TLC27L4AMJ	Operational Amplifier	7-8	SLO3002*
TLC27L4BCD	Operational Amplifier	7-10	SLO3002
TLC27L4BCN	Operational Amplifier	7-10	SLO3002
TLC27L4BID	Operational Amplifier	7-8	SLO3002
TLC27L4BIN	Operational Amplifier	7-8	SLO3002
TLC27L4CD	Operational Amplifier	7-10	SLO3002
TLC27L4CN	Operational Amplifier	7-10	SLO3002
TLC27L4ID	Operational Amplifier	7-8	SLO3002
TLC27L4IN	Operational Amplifier	7-8	SLO3002
TLC27L4MFK	Operational Amplifier	7-8	SLO3002*
TLC27L4MJ	Operational Amplifier	7-8	SLO3002*
TLC27L7CD	Operational Amplifier	7-7	SLO3006
TLC27L7CP	Operational Amplifier	7-7	SLO3006
TLC27L7ID	Operational Amplifier	7-5	SLO3006
TLC27L7IP	Operational Amplifier	7-5	SLO3006
TLC27L7MFK	Operational Amplifier	7-5	SLO3006*
TLC27L7MJG	Operational Amplifier	7-5	SLO3006*
TLC27L9CD	Operational Amplifier	7-10	SLO3002
TLC27L9CJ	Operational Amplifier	7-10	SLO3002
TLC27L9ID	Operational Amplifier	7-8	SLO3002
TLC27L9IN	Operational Amplifier	7-8	SLO3002
TLC27M2ACD	Operational Amplifier	7-7	SLO3005
TLC27M2ACP	Operational Amplifier	7-7	SLO3005
TLC27M2AID	Operational Amplifier	7-5	SLO3005
TLC27M2AIP	Operational Amplifier	7-5	SLO3005
TLC27M2AMFK	Operational Amplifier	7-5	SLO3005*
TLC27M2AMJG	Operational Amplifier	7-5	SLO3005*
TLC27M2BCD	Operational Amplifier	7-7	SLO3005
TLC27M2BCP	Operational Amplifier	7-7	SLO3005
TLC27M2BID	Operational Amplifier	7-5	SLO3005
TLC27M2BIP	Operational Amplifier	7-5	SLO3005
TLC27M2CD	Operational Amplifier	7-7	SLO3005
TLC27M2CP	Operational Amplifier	7-7	SLO3005
TLC27M2ID	Operational Amplifier	7-5	SLO3005
TLC27M2IP	Operational Amplifier	7-5	SLO3005

*Use TI Reference Document for Electrical Parameters.

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
TLC27M2MFK	Operational Amplifier	7-5	SLO3005*
TLC27M2MJG	Operational Amplifier	7-5	SLO3005*
TLC27M4ACD	Operational Amplifier	7-10	SLO3003
TLC27M4ACN	Operational Amplifier	7-10	SLO3003
TLC27M4AID	Operational Amplifier	7-8	SLO3003
TLC27M4AIN	Operational Amplifier	7-8	SLO3003
TLC27M4AMFK	Operational Amplifier	7-10	SLO3003*
TLC27M4AMJ	Operational Amplifier	7-10	SLO3003*
TLC27M4BCD	Operational Amplifier	7-10	SLO3003
TLC27M4BCN	Operational Amplifier	7-10	SLO3003
TLC27M4BID	Operational Amplifier	7-8	SLO3003
TLC27M4BIN	Operational Amplifier	7-8	SLO3003
TLC27M4CD	Operational Amplifier	7-10	SLO3003
TLC27M4CN	Operational Amplifier	7-10	SLO3003
TLC27M4ID	Operational Amplifier	7-8	SLO3003
TLC27M4IN	Operational Amplifier	7-8	SLO3003
TLC27M4MFK	Operational Amplifier	7-10	SLO3003*
TLC27M4MJ	Operational Amplifier	7-10	SLO3003*
TLC27M7CD	Operational Amplifier	7-7	SLO3005
TLC27M7CP	Operational Amplifier	7-7	SLO3005
TLC27M7ID	Operational Amplifier	7-5	SLO3005
TLC27M7IP	Operational Amplifier	7-5	SLO3005
TLC27M7MFK	Operational Amplifier	7-7	SLO3005*
TLC27M7MJG	Operational Amplifier	7-7	SLO3005*
TLC27M9D	Operational Amplifier	7-8,7-10	SLO3003
TLC27M9J	Operational Amplifier	7-8,7-10	SLO3003
TLC27M9N	Operational Amplifier	7-8,7-10	SLO3003
TLC251ACD	Operational Amplifier	7-5	SLYD001
TLC251ACP	Operational Amplifier	7-5	SLYD001
TLC251BCD	Operational Amplifier	7-5	SLYD001
TLC251BCP	Operational Amplifier	7-5	SLYD001
TLC251CD	Operational Amplifier	7-5	SLYD001
TLC251CP	Operational Amplifier	7-5	SLYD001
TLC252ACD	Operational Amplifier	7-7	SLYD001
TLC252ACP	Operational Amplifier	7-7	SLYD001
TLC252BCD	Operational Amplifier	7-7	SLYD001
TLC252BCP	Operational Amplifier	7-7	SLYD001
TLC252CD	Operational Amplifier	7-7	SLYD001
TLC252CP	Operational Amplifier	7-7	SLYD001
TLC254ACD	Operational Amplifier	7-9	SLYD001
TLC254ACN	Operational Amplifier	7-9	SLYD001
TLC254BCD	Operational Amplifier	7-9	SLYD001
TLC254BCN	Operational Amplifier	7-9	SLYD001
TLC254CD	Operational Amplifier	7-9	SLYD001
TLC254CN	Operational Amplifier	7-9	SLYD001
TLC271ACD	Operational Amplifier	7-5	SLO3007
TLC271ACP	Operational Amplifier	7-5	SLO3007
TLC271AID	Operational Amplifier	7-3	SLO3007
TLC271AIP	Operational Amplifier	7-3	SLO3007
TLC271AMFK	Operational Amplifier	7-5	SLO3007
TLC271AMJG	Operational Amplifier	7-5	SLO3007
TLC271BCD	Operational Amplifier	7-5	SLO3007
TLC271BCP	Operational Amplifier	7-5	SLO3007
TLC271BID	Operational Amplifier	7-3	SLO3007
TLC271BIP	Operational Amplifier	7-3	SLO3007
TLC271CD	Operational Amplifier	7-5	SLO3007
TLC271CP	Operational Amplifier	7-5	SLO3007
TLC271ID	Operational Amplifier	7-3	SLO3007
TLC271IP	Operational Amplifier	7-3	SLO3007
TLC271MFK	Operational Amplifier	7-5	SLO3007

*Use TI Reference Document for Electrical Parameters.

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
TLC271MJG	Operational Amplifier	7-5	SLO3007
TLC272ACD	Operational Amplifier	7-7	SLO3004
TLC272ACP	Operational Amplifier	7-7	SLO3004
TLC272AID	Operational Amplifier	7-5	SLO3004
TLC272AIP	Operational Amplifier	7-5	SLO3004
TLC272AMFK	Operational Amplifier	7-7	SLO3004
TLC272AMJ	Operational Amplifier	7-7	SLO3004
TLC272AMJG	Operational Amplifier	7-7	SLO3004
TLC272BCD	Operational Amplifier	7-7	SLO3004
TLC272BCP	Operational Amplifier	7-7	SLO3004
TLC272BID	Operational Amplifier	7-5	SLO3004
TLC272BIP	Operational Amplifier	7-5	SLO3004
TLC272CD	Operational Amplifier	7-7	SLO3004
TLC272CP	Operational Amplifier	7-7	SLO3004
TLC272ID	Operational Amplifier	7-5	SLO3004
TLC272IP	Operational Amplifier	7-5	SLO3004
TLC272MFK	Operational Amplifier	7-7	SLO3004
TLC272MJ	Operational Amplifier	7-7	SLO3004
TLC272MJG	Operational Amplifier	7-7	SLO3004
TLC274ACD	Operational Amplifier	7-9	SLO3001
TLC274ACN	Operational Amplifier	7-9	SLO3001
TLC274AID	Operational Amplifier	7-8	SLO3001
TLC274AIN	Operational Amplifier	7-8	SLO3001
TLC274AMFK	Operational Amplifier	7-9	SLO3001
TLC274AMJ	Operational Amplifier	7-9	SLO3001
TLC274BCD	Operational Amplifier	7-9	SLO3001
TLC274BCN	Operational Amplifier	7-9	SLO3001
TLC274BID	Operational Amplifier	7-8	SLO3001
TLC274BIN	Operational Amplifier	7-8	SLO3001
TLC274CD	Operational Amplifier	7-9	SLO3001
TLC274CN	Operational Amplifier	7-9	SLO3001
TLC274ID	Operational Amplifier	7-8	SLO3001
TLC274IN	Operational Amplifier	7-8	SLO3001
TLC274MFK	Operational Amplifier	7-9	SLO3001
TLC274MJ	Operational Amplifier	7-9	SLO3001
TLC277CD	Operational Amplifier	7-7	SLO3004
TLC277CP	Operational Amplifier	7-7	SLO3004
TLC277ID	Operational Amplifier	7-5	SLO3004
TLC277IP	Operational Amplifier	7-5	SLO3004
TLC277MFK	Operational Amplifier	7-7	SLO3004
TLC277MJG	Operational Amplifier	7-7	SLO3004
TLC279CD	Operational Amplifier	7-9	SLO3001
TLC279CJ	Operational Amplifier	7-9	SLO3001
TLC279CN	Operational Amplifier	7-9	SLO3001
TLC279ID	Operational Amplifier	7-8	SLO3001
TLC279IJ	Operational Amplifier	7-8	SLO3001
TLC279IN	Operational Amplifier	7-8	SLO3001
TLC339CD	Voltage Comparator	7-12	SLNS018
TLC339CN	Voltage Comparator	7-12	SLNS018
TLC339ID	Voltage Comparator	7-11	SLNS018
TLC339IN	Voltage Comparator	7-11	SLNS018
TLC352CD	Voltage Comparator	7-12	SLOS007
TLC352CP	Voltage Comparator	7-12	SLOS007
TLC354CD	Voltage Comparator	7-12	SLOS008
TLC354CN	Voltage Comparator	7-12	SLOS008
TLC372CD	Voltage Comparator	7-12	SLNS002A
TLC372CP	Voltage Comparator	7-12	SLNS002A
TLC372ID	Voltage Comparator	7-12	SLNS002A
TLC372IP	Voltage Comparator	7-12	SLNS002A
TLC372MFK	Voltage Comparator	7-12	SLNS002A

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
TLC372MJG	Voltage Comparator	7-12	SLNS002A
TLC374CD	Voltage Comparator	7-11,7-12	SLNS003A
TLC374CN	Voltage Comparator	7-11,7-12	SLNS003A
TLC374ID	Voltage Comparator	7-11,7-12	SLNS003A
TLC374IN	Voltage Comparator	7-11,7-12	SLNS003A
TLC374MFK	Voltage Comparator	7-11,7-12	SLNS003A
TLC374MJ	Voltage Comparator	7-11,7-12	SLNS003A
TLC393CD	Voltage Comparator	7-12	SLNS017
TLC393CP	Voltage Comparator	7-12	SLNS017
TLC393ID	Voltage Comparator	7-11	SLNS017
TLC393IP	Voltage Comparator	7-11	SLNS017
TLC532AIN	A/D Converter Peripheral	7-14	SLYD002
TLC532AMN	A/D Converter Peripheral	7-14	SLYD002
TLC533AIN	A/D Converter Peripheral	7-14	SLYD002
TLC533AMN	A/D Converter Peripheral	7-14	SLYD002
TLC540IFN	A/D Converter Peripheral	7-14	SLYD002
TLC540IN	A/D Converter Peripheral	7-14	SLYD002
TLC541IFN	A/D Converter Peripheral	7-14	SLYD002
TLC541IN	A/D Converter Peripheral	7-14	SLYD002
TLC545IFN	A/D Converter Peripheral	7-14	SLYD002
TLC545IN	A/D Converter Peripheral	7-14	SLYD002
TLC546IFN	A/D Converter Peripheral	7-14	SLYD002
TLC546IN	A/D Converter Peripheral	7-14	SLYD002
TLC548CD	A/D Converter Peripheral	7-14	SLYD002
TLC548IP	A/D Converter Peripheral	7-14	SLYD002
TLC549CD	A/D Converter Peripheral	7-14	SLYD002
TLC549IP	A/D Converter Peripheral	7-14	SLYD002
TLC551CD	LinCMOS Timers	7-20	SLYD001
TLC551CP	LinCMOS Timers	7-20	SLYD001
TLC552CD	LinCMOS Timers	7-20	SLYD001
TLC552CN	LinCMOS Timers	7-20	SLYD001
TLC555CD	LinCMOS Timers	7-20	SLYD001
TLC555CP	LinCMOS Timers	7-20	SLYD001
TLC555ID	LinCMOS Timers	7-20	SLYD001
TLC555IP	LinCMOS Timers	7-20	SLYD001
TLC555MFK	Dual Timer	7-20	SLNS001A
TLC555MJG	Dual Timer	7-20	SLNS001A
TLC556CD	LinCMOS Timers	7-20	SLNS008
TLC556CN	LinCMOS Timers	7-20	SLNS008
TLC556ID	LinCMOS Timers	7-20	SLNS008
TLC556IN	LinCMOS Timers	7-20	SLNS008
TLC556MFK	Quad Timer	7-20	SLNS008
TLC556MJ	Quad Timer	7-20	SLNS008
TLC0820ACN	A/D Converter	7-14,7-15	SLYD002
TLC0820AFN	A/D Converter	7-14,7-15	SLYD002
TLC0820AIN	A/D Converter	7-14,7-15	SLYD002
TLC0820AMN	A/D Converter	7-14,7-15	SLYD002
TLC0820BCFN	A/D Converter	7-14,7-15	SLYD002
TLC0820BCN	A/D Converter	7-14,7-15	SLYD002
TLC0820BIFN	A/D Converter	7-14,7-15	SLYD002
TLC0820BIN	A/D Converter	7-14,7-15	SLYD002
TLC1541IFN	A/D Converter Peripheral	7-14	SLYD002
TLC1541IN	A/D Converter Peripheral	7-14	SLYD002
TLC3702CD	Voltage Comparator	7-12	SLNS015
TLC3702CP	Voltage Comparator	7-12	SLNS015
TLC3702ID	Voltage Comparator	7-11	SLNS015
TLC3702IP	Voltage Comparator	7-11	SLNS015
TLC3704CD	Voltage Comparator	7-12	SLNS016
TLC3704CN	Voltage Comparator	7-12	SLNS016
TLC3704ID	Voltage Comparator	7-11	SLNS016

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
TLC3704IN	Voltage Comparator	7-11	SLNS016
TLC4016IN	Analog Switch	7-15	SLYD002
TLC4066ID	Analog Switch	7-15	SLYD002
TLC4066IN	Analog Switch	7-15	SLYD002
TLC7524CD	D/A Converter	7-14,7-15	SLYD002
TLC7524CN	D/A Converter	7-14,7-15	SLYD002
TLC7524ID	D/A Converter	7-14,7-15	SLYD002
TLC7524IN	D/A Converter	7-14,7-15	SLYD002
TLC7528CN	D/A Converter	7-14	SLYD002
TLC7528IN	D/A Converter	7-14	SLYD002
TLC32040MN	Analog Interface Circuit	7-15	SLYD002
TLC32040IN	Analog Interface Circuit	7-15	SLYD002
TLP298KV	Motor Driver	—	SLRS012
TL010CP	Current Mirror	7-21	SLYD001
TL010IP	Current Mirror	7-21	SLYD001
TL011CLP	Current Mirror	7-21	SLYD001
TL011ILP	Current Mirror	7-21	SLYD001
TL012CLP	Current Mirror	7-21	SLYD001
TL012ILP	Current Mirror	7-21	SLYD001
TL014CLP	Current Mirror	7-21	SLYD001
TL014ILP	Current Mirror	7-21	SLYD001
TL021CLP	Current Mirror	7-21	SLYD001
TL021ILP	Current Mirror	7-21	SLYD001
TL022CJG	Operational Amplifier	7-6	SLYD001
TL022CP	Operational Amplifier	7-6	SLYD001
TL022MJG	Operational Amplifier	7-6	SLYD001
TL026CD	Video Amplifier	7-10	SLFS007
TL026CP	Video Amplifier	7-10	SLFS007
TL027CD	Video Amplifier	7-10	SLFS008
TL027CN	Video Amplifier	7-10	SLFS008
TL040CD	Video Amplifier	7-10	SLFS012
TL040CN	Video Amplifier	7-10	SLFS012
TL041CDW	Read/Write Control, Streaming Tape	7-10	SLFS015
TL041CNT	Read/Write Control, Streaming Tape	7-10	SLFS015
TL044CD	Operational Amplifier	7-9	SLYD001
TL044CN	Operational Amplifier	7-9	SLYD001
TL044MJG	Operational Amplifier	7-9	SLYD001
TL060ACP	Operational Amplifier	7-2	SLYD001
TL060BCP	Operational Amplifier	7-2	SLYD001
TL060BD	Operational Amplifier	7-2	SLYD001
TL060CD	Operational Amplifier	7-2	SLYD001
TL060CP	Operational Amplifier	7-2	SLYD001
TL060IP	Operational Amplifier	7-2	SLYD001
TL061ACD	Operational Amplifier	7-4	SLYD001
TL061ACJG	Operational Amplifier	7-4	SLYD001
TL061ACP	Operational Amplifier	7-4	SLYD001
TL061BCJG	Operational Amplifier	7-4	SLYD001
TL061BCP	Operational Amplifier	7-4	SLYD001
TL061CD	Operational Amplifier	7-4	SLYD001
TL061CJG	Operational Amplifier	7-4	SLYD001
TL061CP	Operational Amplifier	7-4	SLYD001
TL061IJG	Operational Amplifier	7-3	SLYD001
TL061IP	Operational Amplifier	7-3	SLYD001
TL061MFK	Operational Amplifier	7-3	SLYD001
TL061MJG	Operational Amplifier	7-3	SLYD001
TL062ACD	Operational Amplifier	7-6	SLYD001
TL062ACJG	Operational Amplifier	7-6	SLYD001
TL062ACP	Operational Amplifier	7-6	SLYD001
TL062BCD	Operational Amplifier	7-6	SLYD001
TL062BCJG	Operational Amplifier	7-6	SLYD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
TL062BCP	Operational Amplifier	7-6	SLYD001
TL062CD	Operational Amplifier	7-6	SLYD001
TL062CJG	Operational Amplifier	7-6	SLYD001
TL062CP	Operational Amplifier	7-6	SLYD001
TL062ID	Operational Amplifier	7-6	SLYD001
TL062IJG	Operational Amplifier	7-6	SLYD001
TL062IP	Operational Amplifier	7-6	SLYD001
TL062MFK	Operational Amplifier	7-6	SLYD001
TL062MJG	Operational Amplifier	7-6	SLYD001
TL064ACD	Operational Amplifier	7-9	SLYD001
TL064ACJ	Operational Amplifier	7-9	SLYD001
TL064ACN	Operational Amplifier	7-9	SLYD001
TL064BCD	Operational Amplifier	7-9	SLYD001
TL064BCJ	Operational Amplifier	7-9	SLYD001
TL064BCN	Operational Amplifier	7-9	SLYD001
TL064CD	Operational Amplifier	7-9	SLYD001
TL064CJ	Operational Amplifier	7-9	SLYD001
TL064CN	Operational Amplifier	7-9	SLYD001
TL064ID	Operational Amplifier	7-8	SLYD001
TL064IJ	Operational Amplifier	7-8	SLYD001
TL064IN	Operational Amplifier	7-8	SLYD001
TL064MFK	Operational Amplifier	7-9	SLYD001
TL064MJ	Operational Amplifier	7-9	SLYD001
TL066ACD	Operational Amplifier	7-4	SLYD001
TL066ACJG	Operational Amplifier	7-4	SLYD001
TL066ACP	Operational Amplifier	7-4	SLYD001
TL066BCD	Operational Amplifier	7-4	SLYD001
TL066BCJG	Operational Amplifier	7-4	SLYD001
TL066BCP	Operational Amplifier	7-4	SLYD001
TL066CJG	Operational Amplifier	7-4	SLYD001
TL066CP	Operational Amplifier	7-4	SLYD001
TL066ID	Operational Amplifier	7-3	SLYD001
TL066IJG	Operational Amplifier	7-3	SLYD001
TL066IP	Operational Amplifier	7-3	SLYD001
TL070ACP	Operational Amplifier	7-2	SLYD001
TL070CP	Operational Amplifier	7-2	SLYD001
TL070IP	Operational Amplifier	7-2	SLYD001
TL071ACD	Operational Amplifier	7-4	SLYD001
TL071ACJG	Operational Amplifier	7-4	SLYD001
TL071ACP	Operational Amplifier	7-4	SLYD001
TL071BCD	Operational Amplifier	7-4	SLYD001
TL071BCJG	Operational Amplifier	7-4	SLYD001
TL071BCP	Operational Amplifier	7-4	SLYD001
TL071CD	Operational Amplifier	7-4	SLYD001
TL071CJG	Operational Amplifier	7-4	SLYD001
TL071CP	Operational Amplifier	7-4	SLYD001
TL071ID	Operational Amplifier	7-3	SLYD001
TL071IJG	Operational Amplifier	7-3	SLYD001
TL071IP	Operational Amplifier	7-3	SLYD001
TL071MFK	Operational Amplifier	7-4	SLYD001
TL071MJG	Operational Amplifier	7-4	SLYD001
TL072ACD	Operational Amplifier	7-6	SLYD001
TL072ACJG	Operational Amplifier	7-6	SLYD001
TL072ACP	Operational Amplifier	7-6	SLYD001
TL072BCD	Operational Amplifier	7-6	SLYD001
TL072BCJG	Operational Amplifier	7-6	SLYD001
TL072BCP	Operational Amplifier	7-6	SLYD001
TL072CD	Operational Amplifier	7-6	SLYD001
TL072CJG	Operational Amplifier	7-6	SLYD001
TL072CP	Operational Amplifier	7-6	SLYD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
TL072ID	Operational Amplifier	7-6	SLYD001
TL072IJG	Operational Amplifier	7-6	SLYD001
TL072IP	Operational Amplifier	7-6	SLYD001
TL072MFK	Operational Amplifier	7-6	SLYD001
TL072MJG	Operational Amplifier	7-6	SLYD001
TL074ACD	Operational Amplifier	7-9	SLYD001
TL074ACJ	Operational Amplifier	7-9	SLYD001
TL074ACN	Operational Amplifier	7-9	SLYD001
TL074BCD	Operational Amplifier	7-9	SLYD001
TL074BCJ	Operational Amplifier	7-9	SLYD001
TL074BCN	Operational Amplifier	7-9	SLYD001
TL074CD	Operational Amplifier	7-9	SLYD001
TL074CJ	Operational Amplifier	7-9	SLYD001
TL074CN	Operational Amplifier	7-9	SLYD001
TL074ID	Operational Amplifier	7-8	SLYD001
TL074IJ	Operational Amplifier	7-8	SLYD001
TL074IN	Operational Amplifier	7-8	SLYD001
TL074MFK	Operational Amplifier	7-9	SLYD001
TL074MJ	Operational Amplifier	7-9	SLYD001
TL075CJ	Operational Amplifier	7-9	SLYD001
TL075CN	Operational Amplifier	7-9	SLYD001
TL080ACJG	Operational Amplifier	7-2	SLYD001
TL080ACP	Operational Amplifier	7-2	SLYD001
TL080CJG	Operational Amplifier	7-2	SLYD001
TL080CP	Operational Amplifier	7-2	SLYD001
TL080IJG	Operational Amplifier	7-2	SLYD001
TL080IP	Operational Amplifier	7-2	SLYD001
TL081ACD	Operational Amplifier	7-4	SLYD001
TL081ACJG	Operational Amplifier	7-4	SLYD001
TL081ACP	Operational Amplifier	7-4	SLYD001
TL081BCD	Operational Amplifier	7-4	SLYD001
TL081BCJG	Operational Amplifier	7-4	SLYD001
TL081BCP	Operational Amplifier	7-4	SLYD001
TL081CD	Operational Amplifier	7-4	SLYD001
TL081CJG	Operational Amplifier	7-4	SLYD001
TL081CP	Operational Amplifier	7-4	SLYD001
TL081ID	Operational Amplifier	7-3	SLYD001
TL081IJG	Operational Amplifier	7-3	SLYD001
TL081IP	Operational Amplifier	7-3	SLYD001
TL081MFK	Operational Amplifier	7-4	SLYD001
TL081MJG	Operational Amplifier	7-4	SLYD001
TL082ACD	Operational Amplifier	7-6	SLYD001
TL082ACJG	Operational Amplifier	7-6	SLYD001
TL082ACP	Operational Amplifier	7-6	SLYD001
TL082BCD	Operational Amplifier	7-6	SLYD001
TL082BCJG	Operational Amplifier	7-6	SLYD001
TL082BCP	Operational Amplifier	7-6	SLYD001
TL082CD	Operational Amplifier	7-6	SLYD001
TL082CJG	Operational Amplifier	7-6	SLYD001
TL082CP	Operational Amplifier	7-6	SLYD001
TL082ID	Operational Amplifier	7-6	SLYD001
TL082IJG	Operational Amplifier	7-6	SLYD001
TL082IP	Operational Amplifier	7-6	SLYD001
TL082MFK	Operational Amplifier	7-6	SLYD001
TL082MJG	Operational Amplifier	7-6	SLYD001
TL083ACJ	Operational Amplifier	7-6	SLYD001
TL083ACN	Operational Amplifier	7-6	SLYD001
TL083CJ	Operational Amplifier	7-6	SLYD001
TL083CN	Operational Amplifier	7-6	SLYD001
TL083IJ	Operational Amplifier	7-6	SLYD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
TL083IN	Operational Amplifier	7-6	SLYD001
TL084ACD	Operational Amplifier	7-9	SLYD001
TL084ACJ	Operational Amplifier	7-9	SLYD001
TL084ACN	Operational Amplifier	7-9	SLYD001
TL084BCD	Operational Amplifier	7-9	SLYD001
TL084BCJ	Operational Amplifier	7-9	SLYD001
TL084BCN	Operational Amplifier	7-9	SLYD001
TL084CD	Operational Amplifier	7-9	SLYD001
TL084CJ	Operational Amplifier	7-9	SLYD001
TL084CN	Operational Amplifier	7-9	SLYD001
TL084ID	Operational Amplifier	7-8	SLYD001
TL084IJ	Operational Amplifier	7-8	SLYD001
TL084IN	Operational Amplifier	7-8	SLYD001
TL084MFK	Operational Amplifier	7-9	SLYD001
TL084MJ	Operational Amplifier	7-9	SLYD001
TL085CN	Operational Amplifier	7-9	SLYD001
TL087CD	Operational Amplifier	7-4,7-6	SLYD001
TL087CJG	Operational Amplifier	7-4,7-6	SLYD001
TL087CP	Operational Amplifier	7-4,7-6	SLYD001
TL087ID	Operational Amplifier	7-3,7-6	SLYD001
TL087IJG	Operational Amplifier	7-3,7-6	SLYD001
TL087IP	Operational Amplifier	7-3,7-6	SLYD001
TL088CD	Operational Amplifier	7-4,7-6	SLYD001
TL088CJG	Operational Amplifier	7-4,7-6	SLYD001
TL088CP	Operational Amplifier	7-4,7-6	SLYD001
TL088ID	Operational Amplifier	7-3,7-6	SLYD001
TL088IJG	Operational Amplifier	7-3,7-6	SLYD001
TL088IP	Operational Amplifier	7-3,7-6	SLYD001
TL136CJ	Operational Amplifier	7-9	SLYD001
TL136CN	Operational Amplifier	7-9	SLYD001
TL170CLP	Hall-Effect Device	7-21	SLYD001
TL172CLP	Hall-Effect Device	7-21	SLYD001
TL173CLP	Hall-Effect Device	7-21	SLYD001
TL182CN	Analog Switch	7-15	SLYD002
TL182IN	Analog Switch	7-15	SLYD002
TL185CN	Analog Switch	7-15	SLYD002
TL185IN	Analog Switch	7-15	SLYD002
TL188CN	Analog Switch	7-15	SLYD002
TL188IN	Analog Switch	7-15	SLYD002
TL191CN	Analog Switch	7-15	SLYD002
TL191IN	Analog Switch	7-15	SLYD002
TL287CJG	Operational Amplifier	7-6	SLYD001
TL287CP	Operational Amplifier	7-6	SLYD001
TL287IJG	Operational Amplifier	7-6	SLYD001
TL287IP	Operational Amplifier	7-6	SLYD001
TL288CD	Operational Amplifier	7-6	SLYD001
TL288CJG	Operational Amplifier	7-6	SLYD001
TL288CP	Operational Amplifier	7-6	SLYD001
TL288ID	Operational Amplifier	7-6	SLYD001
TL288IP	Operational Amplifier	7-6	SLYD001
TL317CD	Voltage Regulator	7-16	SLVS004
TL317LP	Voltage Regulator	7-16	SLVS004
TL321CJG	Operational Amplifier	7-4	SLYD001
TL321CP	Operational Amplifier	7-4	SLYD001
TL321ID	Operational Amplifier	7-4	SLYD001
TL321IP	Operational Amplifier	7-4	SLYD001
TL322CD	Operational Amplifier	7-7	SLYD001
TL322CP	Operational Amplifier	7-7	SLYD001
TL322ID	Operational Amplifier	7-5	SLYD001
TL322IP	Operational Amplifier	7-5	SLYD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
TL331CP	Voltage Comparator	7-12	SLYD001
TL331IP	Voltage Comparator	7-3,7-11	SLYD001
TL376CD	Motor Driver	6-10	SLYD002
TL376CNE	Motor Driver	6-10	SLYD002
TL430CD	Voltage Regulator	7-16	SLYD001
TL430CLP	Voltage Regulator	7-16	SLYD001
TL431CD	Voltage Regulator	7-16	SLVS005
TL431CLP	Voltage Regulator	7-16	SLYD001
TL431CP	Voltage Regulator	7-16	SLYD001
TL431ILP	Voltage Regulator	7-16	SLYD001
TL431IP	Voltage Regulator	7-16	SLYD001
TL431MJG	Voltage Regulator	7-16	SLYD001
TL441AMJ	Logarithmic Amplifier	—	SLAS010
TL441CJ	Logarithmic Amplifier	7-10	SLAS010
TL441CN	Logarithmic Amplifier	7-10	SLAS010
TL493CN	PWM Controller	7-19	SLYD001
TL494CD	PWM Controller	7-19	SLYD001
TL494CJ	PWM Controller	7-19	SLYD001
TL494CN	PWM Controller	7-19	SLYD001
TL494IJ	PWM Controller	7-19	SLYD001
TL494IN	PWM Controller	7-19	SLYD001
TL494MJ	PWM Controller	7-19	SLYD001
TL495CN	PWM Controller	7-19	SLYD001
TL496CP	Power Supply Controller, 9 V	7-19	SLVS012
TL497ACD	Switching Voltage Regulator	7-19	SLVS009
TL497ACJ	Switching Voltage Regulator	7-19	SLVS009
TL497ACN	Switching Voltage Regulator	7-19	SLVS009
TL497AIJ	Switching Voltage Regulator	7-19	SLVS009
TL497AIN	Switching Voltage Regulator	7-19	SLVS009
TL500CJ	A/D Converter Circuit	7-13	SLYD002
TL501CJ	A/D Converter Circuit	7-13	SLYD002
TL502CN	A/D Converter Circuit	7-13	SLYD002
TL503CN	A/D Converter Circuit	7-13	SLYD002
TL505CN	A/D Converter	7-13	SLYD002
TL506J	Operational Amplifier	7-12	SLYD001
TL506N	Operational Amplifier	7-12	SLYD001
TL507CP	A/D Converter	7-13	SLYD002
TL507IP	A/D Converter	7-13	SLYD002
TL510CJG	Voltage Comparator	7-12	SLYD001
TL510CP	Voltage Comparator	7-12	SLYD001
TL514CN	Voltage Comparator	7-12	SLYD001
TL514MFK	Voltage Comparator	7-12	SLYD001
TL514MJ	Voltage Comparator	7-12	SLYD001
TL592AD	Video Amplifier	7-10	SLOS015
TL592AP	Video Amplifier	7-10	SLOS015
TL592BN	Video Amplifier	7-10	SLFS001
TL592BP	Video Amplifier	7-10	SLFS001
TL592B-8D	Video Amplifier	7-10	SLFS001
TL592B-14D	Video Amplifier	7-10	SLFS001
TL592D	Video Amplifier	7-10	SLFS001
TL592P	Video Amplifier	7-10	SLFS001
TL594CJ	PWM Controller	7-19	SLYD001
TL594CN	PWM Controller	7-19	SLYD001
TL594IJ	PWM Controller	7-19	SLYD001
TL594IN	PWM Controller	7-19	SLYD001
TL595CN	PWM Controller	7-19	SLYD001
TL601CP	Analog Switch	7-15	SLYD002
TL601IP	Analog Switch	7-15	SLYD002
TL604CP	Analog Switch	7-15	SLYD002
TL604IP	Analog Switch	7-15	SLYD002

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
TL607CP	Analog Switch	7-15	SLYD002
TL607IP	Analog Switch	7-15	SLYD002
TL610CP	Analog Switch	7-15	SLYD002
TL610IP	Analog Switch	7-15	SLYD002
TL710CJ	Voltage Comparator	7-12	SLYD001
TL710CJG	Voltage Comparator	7-12	SLYD001
TL710CN	Voltage Comparator	7-12	SLYD001
TL710CP	Voltage Comparator	7-12	SLYD001
TL710MJ	Voltage Comparator	7-12	SLYD001
TL710MJG	Voltage Comparator	7-12	SLYD001
TL712CD	Voltage Comparator	7-10,7-12	SLCS002
TL712CP	Voltage Comparator	7-10,7-12	SLCS002
TL721CD	Voltage Comparator	7-10,7-12	SLCS001
TL721CP	Voltage Comparator	7-10,7-12	SLCS001
TL780-05CKC	Voltage Regulator	7-17	SLYD001
TL780-12CKC	Voltage Regulator	7-17	SLYD001
TL780-15CKC	Voltage Regulator	7-17	SLYD001
TL783CKC	Voltage Regulator	7-16	SLYD001
TL0808FN	A/D Converter	7-14	SLYD002
TL0808N	A/D Converter	7-14	SLYD002
TL0809FN	A/D Converter	7-14	SLYD002
TL0809N	A/D Converter	7-14	SLYD002
TL810CJG	Voltage Comparator	7-12	SLYD001
TL810CP	Voltage Comparator	7-12	SLYD001
TL811CJ	Voltage Comparator	7-12	SLYD001
TL811CN	Voltage Comparator	7-12	SLYD001
TL820CJ	Voltage Comparator	7-12	SLYD001
TL820CN	Voltage Comparator	7-12	SLYD001
TL820MJ	Voltage Comparator	7-12	SLYD001
TL851CN	Sonar Circuit	7-22	SLYD001
TL852CN	Sonar Circuit	7-22	SLYD001
TL853CN	Sonar Circuit	7-22	SLSS002
TL1593E	Image Sensor Support Function	8-3	SOYD002
TL3013CLU	Hall-Effect Device	7-21	SLFS004
TL3019CLU	Hall-Effect Device	7-21	SLFS005
TL3020CLU	Hall-Effect Device	7-21	SLFS006
TL3101CLU	Hall-Effect Device	7-21	SLFS003
TL3103CLP	Hall-Effect Device	7-21	SLFS003
TL3103CLU	Hall-Effect Device	7-21	SLFS003
TL4810BDW	Display Driver	6-7	SLYD002
TL4810BIN	Display Driver	6-7	SLYD002
TL4810BN	Display Driver	6-7	SLYD002
TL5812IFN	Display Driver	6-7	SLYD002
TL5812IN	Display Driver	6-7	SLYD002
TL5812N	Display Driver	6-7	SLYD002
TL7702ACD	Supply Supervisor	7-16	SLYD001
TL7702ACP	Supply Supervisor	7-16	SLYD001
TL7702AIP	Supply Supervisor	7-16	SLYD001
TL7705ACD	Supply Supervisor	7-16	SLYD001
TL7705ACP	Supply Supervisor	7-16	SLYD001
TL7705AIP	Supply Supervisor	7-16	SLYD001
TL7709ACD	Supply Supervisor	7-16	SLYD001
TL7709ACP	Supply Supervisor	7-16	SLYD001
TL7709AIP	Supply Supervisor	7-16	SLYD001
TL7712ACD	Supply Supervisor	7-16	SLYD001
TL7712ACP	Supply Supervisor	7-16	SLYD001
TL7712AIP	Supply Supervisor	7-16	SLYD001
TL7715ACD	Supply Supervisor	7-16	SLYD001
TL7715ACP	Supply Supervisor	7-16	SLYD001
TL7715AIP	Supply Supervisor	7-16	SLYD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
TMDP380ASIC	TMS380 ASIC-LAN Tool Kit	4-25,12-2	SPWT018A
TMDSP2400PK	DSP2400 Prototype Kit	12-2	SPRT033
TMDS380LLC	TMS380 802.2 LLC Evaluation Kit	4-25,12-2	SPWT018A
TMDS380PC	IBM PC Token Ring Evaluation Board	4-25	SPWT018A
TMDS7040210-08	DEC VAX VMS Assembler Linker	4-29	SND001B
TMDS7040810-02	PC/MS-DOS Assembler Linker	4-29	SND001B
TMDS7062220	CMOS XDS	4-28,4-29	SND001B
TMDS3411804420	TMS34010 Software Development Board	4-14	SPPU002A
TMDS3411804420	TMS34010 Software Development Board	4-14	SPVU003
TMDS3440200059	VAX Assembler Package, VMS	4-14	SPVU004
TMDS3440200069	VAX Assembler Package, DEC ULTRIX	4-14	SPVU004
TMDS3440200089	VAX Assembler Package, UNIX System V	4-14	SPVU004
TMDS3440202208	VAX Graphics/Math Function Library	4-14	SPVB066
TMDS3440202308	VAX Font Library	4-14	SPVU007
TMDS3440205059	VAX "C" Compiler Package, VMS	4-14	SPVU005
TMDS3440205069	VAX "C" Compiler Package, DEC ULTRIX	4-14	SPVU005
TMDS3440205089	VAX "C" Compiler Package, UNIX System V	4-14	SPVU005
TMDS3440802202	PC Graphics/Math Function Library	4-14,4-18	SPVB066
TMDS3440802302	PC Font Library	4-14,4-18	SPVU007
TMDS3440805002	PC "C" Compiler Package, MS-DOS 2.11+	4-14,4-18	SPVU005
TMDS3440806002	PC Debugger Dev Pkg (Not for Resale)	4-14,4-18	SPVB066A
TMDS3440806003	PC Debugger Dev Pkg (for Resale)	4-14,4-18	SPVB066A
TMDS3440808002	PC Assembler Package, MS-DOS 2.11+	4-14,4-18	SPVU004
TMDS3469910000	TMS34010 XDS-22 Real-Time Emulator (US)	4-14	SPVB066A
TMDS3469981000	TMS34010 XDS-22 Real-Time Emulator (EU)	4-14	SPVB066A
TMDS3471804000	TMS34061 Color Graphics Controller Board	4-14	SPPU019A
TMDX380BMP	TMS380 Bridge Design Kit	4-25,12-2	SPWT018A
TMD380TWC-1	Token Ring Test Wiring Concentrator	4-25	SPWT018A
TMS27C292-3JL	16K 35 ns CMOS EPROM, 600-MIL, 5%	10-2	SMLS291A
TMS27C292-45JL	16K 45 ns CMOS EPROM, 600-MIL, 10%	10-2	SMLS291A
TMS27C292-50JL	16K 50 ns CMOS EPROM, 600-MIL, 10%	10-2	SMLS291A
TMS27C292JL	16K 45 ns CMOS EPROM, 600-MIL, 5%	10-2	SMLS291A
TMS2732A-17JL	32K NMOS EPROM, 170 ns, JEDEC Pinout	10-2	SMYD006
TMS2732A-20JL	32K NMOS EPROM, 200 ns, JEDEC Pinout	10-2	SMYD006
TMS2732A-25JL	32K NMOS EPROM, 250 ns, JEDEC Pinout	10-2	SMYD006
TMS2732A-45JL	32K NMOS EPROM, 450 ns, JEDEC Pinout	10-2	SMYD006
TMS2764-17JL	64K NMOS EPROM, 170 ns, JEDEC Pinout	10-2	SMYD006
TMS2764-20JL	64K NMOS EPROM, 200 ns, JEDEC Pinout	10-2	SMYD006
TMS2764-25JL	64K NMOS EPROM, 250 ns, JEDEC Pinout	10-2	SMYD006
TMS2764-45JL	64K NMOS EPROM, 450 ns, JEDEC Pinout	10-2	SMYD006
TMS27C64-1JL	64K CMOS EPROM, 150 ns, 5% VCC	10-2	SMYD006
TMS27C64-2JL	64K CMOS EPROM, 200 ns, 5% VCC	10-2	SMYD006
TMS27C64-3JL	64K CMOS EPROM, 300 ns, 5% VCC	10-2	SMYD006
TMS27C64-4JL	64K CMOS EPROM, 450 ns, 5% VCC	10-2	SMYD006
TMS27C64-15JL	64K CMOS EPROM, 150 ns, 10% VCC	10-2	SMYD006
TMS27C64-20JL	64K CMOS EPROM, 200 ns, 10% VCC	10-2	SMYD006
TMS27C64-25JL	64K CMOS EPROM, 250 ns, 10% VCC	10-2	SMYD006
TMS27C64-30JL	64K CMOS EPROM, 300 ns, 10% VCC	10-2	SMYD006
TMS27C64-45JL	64K CMOS EPROM, 450 ns, 10% VCC	10-2	SMYD006
TMS27C64JL	64K CMOS EPROM, 250 ns, 5% VCC	10-2	SMYD006
TMS27C128-1JL	128K CMOS EPROM, 150 ns, 5% VCC	10-2	SMYD006
TMS27C128-2JL	128K CMOS EPROM, 200 ns, 5% VCC	10-2	SMYD006
TMS27C128-3JL	128K CMOS EPROM, 300 ns, 5% VCC	10-2	SMYD006
TMS27C128-4JL	128K CMOS EPROM, 450 ns, 5% VCC	10-2	SMYD006
TMS27C128-15JL	128K CMOS EPROM, 150 ns, 10% VCC	10-2	SMYD006
TMS27C128-20JL	128K CMOS EPROM, 200 ns, 10% VCC	10-2	SMYD006
TMS27C128-25JL	128K CMOS EPROM, 250 ns, 10% VCC	10-2	SMYD006
TMS27C128-30JL	128K CMOS EPROM, 300 ns, 10% VCC	10-2	SMYD006
TMS27C128-45JL	128K CMOS EPROM, 450 ns, 10% VCC	10-2	SMYD006
TMS27C128JL	128K CMOS EPROM, 250 ns, 5% VCC	10-2	SMYD006

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
TMS27C256-1JL	256K CMOS EPROM, 170 ns, 5% VCC	10-2	SMYD006
TMS27C256-2JL	256K CMOS EPROM, 200 ns, 5% VCC	10-2	SMYD006
TMS27C256-3JL	256K CMOS EPROM, 300 ns, 5% VCC	10-2	SMYD006
TMS27C256-4JL	256K CMOS EPROM, 450 ns, 5% VCC	10-2	SMYD006
TMS27C256-17JL	256K CMOS EPROM, 170 ns, 10% VCC	10-2	SMYD006
TMS27C256-20JL	256K CMOS EPROM, 200 ns, 10% VCC	10-2	SMYD006
TMS27C256-25JL	256K CMOS EPROM, 250 ns, 10% VCC	10-2	SMYD006
TMS27C256-30JL	256K CMOS EPROM, 300 ns, 10% VCC	10-2	SMYD006
TMS27C256-45JL	256K CMOS EPROM, 450 ns, 10% VCC	10-2	SMYD006
TMS27C256-150JL	256K CMOS EPROM, 150 ns, 5% VCC	10-2	SMLS256B
TMS27C256JL	256K CMOS EPROM, 250 ns, 5% VCC	10-2	SMYD006
TMS27C512-2JL	512K CMOS EPROM, 200 ns, 5% VCC	10-2	SMLS512A
TMS27C512-3JL	512K CMOS EPROM, 300 ns, 5% VCC	10-2	SMLS512A
TMS27C512-4JL	512K CMOS EPROM, 450 ns, 5% VCC	10-2	SMLS512A
TMS27C512-20JL	512K CMOS EPROM, 200 ns, 10% VCC	10-2	SMLS512A
TMS27C512-25JL	512K CMOS EPROM, 250 ns, 10% VCC	10-2	SMLS512A
TMS27C512-30JL	512K CMOS EPROM, 300 ns, 10% VCC	10-2	SMLS512A
TMS27C512-45JL	512K CMOS EPROM, 450 ns, 10% VCC	10-2	SMLS512A
TMS27C512JL	512K CMOS EPROM, 250 ns, 5% VCC	10-2	SMLS512A
TMX27C010-20JL	1M, 128K × 8 CMOS EPROM, 200 ns, 5% VCC	10-3	SMLS010
TMX27C010-25JL	1M, 128K × 8 CMOS EPROM, 250 ns, 5% VCC	10-3	SMLS010
TMX27C010-30JL	1M, 128K × 8 CMOS EPROM, 300 ns, 5% VCC	10-3	SMLS010
TMX27C010-200JL	1M, 128K × 8 CMOS EPROM, 200 ns, 10% VCC	10-3	SMLS010
TMX27C010-250JL	1M, 128K × 8 CMOS EPROM, 250 ns, 10% VCC	10-3	SMLS010
TMX27C010-300JL	1M, 128K × 8 CMOS EPROM, 300 ns, 10% VCC	10-3	SMLS010
TMX27C210-20JL	1M, 16K × 16 CMOS EPROM, 200 ns, 10% VCC	10-3	SMLS210
TMX27C210-25JL	1M, 16K × 16 CMOS EPROM, 250 ns, 10% VCC	10-3	SMLS210
TMX27C210-30JL	1M, 16K × 16 CMOS EPROM, 300 ns, 10% VCC	10-3	SMLS210
TMX27C210-200JL	1M, 16K × 16 CMOS EPROM, 200 ns, 5% VCC	10-3	SMLS210
TMX27C210-250JL	1M, 16K × 16 CMOS EPROM, 250 ns, 5% VCC	10-3	SMLS210
TMX27C210-300JL	1M, 16K × 16 CMOS EPROM, 300 ns, 5% VCC	10-3	SMLS210
TMS27PC291-3FNL	16K 35 ns CMOS PROM, PLCC, 5%	—	SMLS291A
TMS27PC291-45FNL	16K 45 ns CMOS PROM, PLCC, 10%	—	SMLS291A
TMS27PC291-50FNL	16K 50 ns CMOS PROM, PLCC, 10%	—	SMLS291A
TMS27PC291FNL	16K 45 ns CMOS PROM, PLCC, 5%	—	SMLS291A
TMS27PC64-1NL	64K CMOS PROM, 150 ns, 5% VCC	10-3	SMLS064
TMS27PC64-2NL	64K CMOS PROM, 200 ns, 5% VCC	10-3	SMLS064
TMS27PC64-3NL	64K CMOS PROM, 300 ns, 5% VCC	10-3	SMLS064
TMS27PC64-4NL	64K CMOS PROM, 450 ns, 5% VCC	10-3	SMLS064
TMS27PC64-15NL	64K CMOS PROM, 150 ns, 10% VCC	10-3	SMLS064
TMS27PC64-20NL	64K CMOS PROM, 200 ns, 10% VCC	10-3	SMLS064
TMS27PC64-25NL	64K CMOS PROM, 250 ns, 10% VCC	10-3	SMLS064
TMS27PC64-30NL	64K CMOS PROM, 300 ns, 10% VCC	10-3	SMLS064
TMS27PC64-45NL	64K CMOS PROM, 450 ns, 10% VCC	10-3	SMLS064
TMS27PC64NL	64K CMOS PROM, 250 ns, 5% VCC	10-3	SMLS064
TMS27PC128-1NL	128K CMOS PROM, 170 ns, 5% VCC	10-3	SMPS128A
TMS27PC128-2NL	128K CMOS PROM, 200 ns, 5% VCC	10-3	SMPS128A
TMS27PC128-3NL	128K CMOS PROM, 300 ns, 5% VCC	10-3	SMPS128A
TMS27PC128-4NL	128K CMOS PROM, 450 ns, 5% VCC	10-3	SMPS128A
TMS27PC128-20NL	128K CMOS PROM, 200 ns, 10% VCC	10-3	SMPS128A
TMS27PC128-25NL	128K CMOS PROM, 250 ns, 10% VCC	10-3	SMPS128A
TMS27PC128-30NL	128K CMOS PROM, 300 ns, 10% VCC	10-3	SMPS128A
TMS27PC128-45NL	128K CMOS PROM, 450 ns, 10% VCC	10-3	SMPS128A
TMS27PC128NL	128K CMOS PROM, 250 ns, 5% VCC	10-3	SMPS128A
TMS27PC128-1FML	128K CMOS PROM, 170 ns, 5% VCC, PLCC	10-3	SMPS128A
TMS27PC128-2FML	128K CMOS PROM, 200 ns, 5% VCC, PLCC	10-3	SMPS128A
TMS27PC128-3FML	128K CMOS PROM, 300 ns, 5% VCC, PLCC	10-3	SMPS128A
TMS27PC128-4FML	128K CMOS PROM, 450 ns, 5% VCC, PLCC	10-3	SMPS128A
TMS27PC128-20FML	128K CMOS PROM, 200 ns, 10% VCC, PLCC	10-3	SMPS128A
TMS27PC128-25FML	128K CMOS PROM, 250 ns, 10% VCC, PLCC	10-3	SMPS128A
TMS27PC128-30FML	128K CMOS PROM, 300 ns, 10% VCC, PLCC	10-3	SMPS128A
TMS27PC128-45FML	128K CMOS PROM, 450 ns, 10% VCC, PLCC	10-3	SMPS128A
TMS27PC128FML	128K CMOS PROM, 250 ns, 5% VCC, PLCC	10-3	SMPS128A

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
TMS27PC256-2NL	256K CMOS PROM, 200 ns, 5% VCC	10-3	SMPS256A
TMS27PC256-3NL	256K CMOS PROM, 300 ns, 5% VCC	10-3	SMPS256A
TMS27PC256-4NL	256K CMOS PROM, 450 ns, 5% VCC	10-3	SMPS256A
TMS27PC256-20NL	256K CMOS PROM, 200 ns, 10% VCC	10-3	SMPS256A
TMS27PC256-25NL	256K CMOS PROM, 250 ns, 10% VCC	10-3	SMPS256A
TMS27PC256-30NL	256K CMOS PROM, 300 ns, 10% VCC	10-3	SMPS256A
TMS27PC256-45NL	256K CMOS PROM, 450 ns, 10% VCC	10-3	SMPS256A
TMS27PC256NL	256K CMOS PROM, 250 ns, 5% VCC	10-3	SMPS256A
TMS27PC256-2FML	256K CMOS PROM, 200 ns, 5% VCC, PLCC	10-3	SMPS256A
TMS27PC256-3FML	256K CMOS PROM, 300 ns, 5% VCC, PLCC	10-3	SMPS256A
TMS27PC256-4FML	256K CMOS PROM, 450 ns, 5% VCC, PLCC	10-3	SMPS256A
TMS27PC256-20FML	256K CMOS PROM, 200 ns, 10% VCC, PLCC	10-3	SMPS256A
TMS27PC256-25FML	256K CMOS PROM, 250 ns, 10% VCC, PLCC	10-3	SMPS256A
TMS27PC256-30FML	256K CMOS PROM, 300 ns, 10% VCC, PLCC	10-3	SMPS256A
TMS27PC256-45FML	256K CMOS PROM, 450 ns, 10% VCC, PLCC	10-3	SMPS256A
TMS27PC256FML	256K CMOS PROM, 250 ns, 5% VCC, PLCC	10-3	SMPS256A
TMS27PC512-2NL	512K CMOS PROM, 200 ns, 5% VCC	10-3	SMPS512
TMS27PC512-3NL	512K CMOS PROM, 300 ns, 5% VCC	10-3	SMPS512
TMS27PC512-4NL	512K CMOS PROM, 450 ns, 5% VCC	10-3	SMPS512
TMS27PC512-20NL	512K CMOS PROM, 200 ns, 10% VCC	10-3	SMPS512
TMS27PC512-25NL	512K CMOS PROM, 250 ns, 10% VCC	10-3	SMPS512
TMS27PC512-30NL	512K CMOS PROM, 300 ns, 10% VCC	10-3	SMPS512
TMS27PC512-45NL	512K CMOS PROM, 450 ns, 10% VCC	10-3	SMPS512
TMS27PC512NL	512K CMOS PROM, 250 ns, 5% VCC	10-3	SMPS512
TMS27PC512-2FML	512K CMOS PROM, 200 ns, 5% VCC, PLCC	10-3	SMPS512
TMS27PC512-3FML	512K CMOS PROM, 300 ns, 5% VCC, PLCC	10-3	SMPS512
TMS27PC512-4FML	512K CMOS PROM, 450 ns, 5% VCC, PLCC	10-3	SMPS512
TMS27PC512-20FML	512K CMOS PROM, 200 ns, 10% VCC, PLCC	10-3	SMPS512
TMS27PC512-25FML	512K CMOS PROM, 250 ns, 10% VCC, PLCC	10-3	SMPS512
TMS27PC512-30FML	512K CMOS PROM, 300 ns, 10% VCC, PLCC	10-3	SMPS512
TMS27PC512-45FML	512K CMOS PROM, 450 ns, 10% VCC, PLCC	10-3	SMPS512
TMS27PC512FML	512K CMOS PROM, 250 ns, 5% VCC, PLCC	10-3	SMPS512
TMS70A2400	DSP2400 V.22bis Modem Controller	4-6	SPRT033
TMS70C00AFN	8-Bit CMOS Microcontroller	4-28	SPNT020
TMS70C00AN	8-Bit CMOS Microcontroller	4-28	SPNT020
TMS70C02FN	8-Bit CMOS Microcontroller	4-28	SPNT020
TMS70C02N	8-Bit CMOS Microcontroller	4-28	SPNT020
TMS70C20AFN	8-Bit CMOS Microcontroller	4-28	SPNT020
TMS70C20AN	8-Bit CMOS Microcontroller	4-28	SPNT020
TMS70C20AN2	8-Bit CMOS Microcontroller	4-28	SPNT020
TMS70C40AFN	8-Bit CMOS Microcontroller	4-28	SPNT020
TMS70C40AN	8-Bit CMOS Microcontroller	4-28	SPNT020
TMS70C40AN2	8-Bit CMOS Microcontroller	4-28	SPNT020
TMS70C42FN	8-Bit CMOS Microcontroller	4-28	SPNT020
TMS70C42N	8-Bit CMOS Microcontroller	4-28	SPNT020
TMS77C82JD	8-Bit CMOS EPROM Microcontroller	4-28	SPNT020
TMS320A2400	DSP2400 V.22bis Modem Chip-Set DSP	4-6	SPRT033
TMS320C10FN	CMOS 1st-Generation DSP (20 MHz)	4-5	SPRS009
TMS320C10FN-25	CMOS 1st-Generation DSP (25 MHz)	4-5	SPRS009
TMS320C10N	CMOS 1st-Generation DSP (20 MHz)	4-5	SPRS009
TMS320C10N-25	CMOS 1st-Generation DSP (25 MHz)	4-5	SPRS009
TMS320C15FN	320C10 DSP (20 MHz) with more RAM and ROM	4-5	SPRS009
TMS320C15FN-25	320C15 DSP (25 MHz)	4-5	SPRS009
TMS320C15N	320C10 DSP (20 MHz) with more RAM and ROM	4-5	SPRS009
TMS320C15N-25	320C15 DSP (25 MHz)	4-5	SPRS009
TMS320C17FN	320C15 DSP with Serial Port and Coproc.I/F	4-5	SPRS009
TMS320C17FN-25	320C17 DSP (25 MHz)	4-5	SPRS009
TMS320C17N	320C15 DSP with Serial Port and Coproc.I/F	4-5	SPRS009
TMS320C17N-25	320C17 DSP (25 MHz)	4-5	SPRS009
TMS320C25FN	CMOS 2nd-Generation DSP (40 MHz)	4-5	SPRS010
TMS320C30	CMOS 3rd-Generation DSP (33 Mflop)	4-5	SPRT036

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
TMS320DDK	TMS320 DSP Design Kit	12-2	SPRV011
TMS320 Dev Tools	TMS320 Development Tools	4-6	SPRU011
TMS320E15JD	320C15 DSP (20 MHz) with 4K-Words EPROM	4-5	SPRS009
TMS320E17JD	320C17 DSP (20 MHz) with 4K-Words EPROM	4-5	SPRS009
TMS320SA32N	32Kbps ADPCM Transcoder (320C10-based)	4-6	SPRS011
TMS320 Workshops	See RTCWS-320DSP1		SSRC007
" "	" RTCWS-320DSP1A		SSRC007
" "	" RTCWS-320DSP1B		SSRC007
" "	" RTCWS-320DSP2		SSRC007
" "	" RTCWS-320DSP2A		SSRC007
TMS340GDK	TMS340 Graphics Design Kit	4-14,12-3	SPVZ001
TMS340 Workshops	See RTCWS-34010	12-5	SSRC007
" "	" RTCWS-34061	12-5	SSRC007
TMS380LDK-1	TMS380 Design-In Accelerator Kit	4-25,12-2	SPWT018A
TMS380 Workshops	See RTCWS-380LAN1		SSRC007
" "	" RCTWS-380LAN1A		SSRC007
TMS2150-35DW	Cache Address Comparator	4-61	SDVD001
TMS2150-35JD	Cache Address Comparator	4-61	SDVD001
TMS2150-35NT	Cache Address Comparator	4-61	SDVD001
TMS2150-45DW	Cache Address Comparator	4-61	SDVD001
TMS2150-45JD	Cache Address Comparator	4-61	SDVD001
TMS2150-45NT	Cache Address Comparator	4-61	SDVD001
TMS2150-55JD	Cache Address Comparator	4-61	SDVD001
TMS3471C	Image Sensor Support Function	8-3	SOYD002
TMS3472A	Image Sensor Support Function	8-3	SOYD002
TMS3473B	Image Sensor Support Function	8-3	SOYD002
TMS4256-10FML	256K × 1 DRAM 100 ns Page Mode, PLCC	10-4	SMQS256B
TMS4256-10NL	256K × 1 DRAM 100 ns Page Mode, DIP	10-4	SMQS256B
TMS4256-12FML	256K × 1 DRAM 120 ns Page Mode, PLCC	10-4	SMQS256B
TMS4256-12FMLR	256K × 1 DRAM 120 ns Page Mode,Tape and Reel	10-4	SMQS256B
TMS4256-12NL	256K × 1 DRAM 120 ns Page Mode, DIP	10-4	SMQS256B
TMS4256-15FML	256K × 1 DRAM 150 ns Page Mode, PLCC	10-4	SMQS256B
TMS4256-15FMLR	256K × 1 DRAM 150 ns Page Mode,Tape & Reel	10-4	SMQS256B
TMS4256-15NL	256K × 1 DRAM 150 ns Page Mode, DIP	10-4	SMQS256B
TMS4256FML	256K × 1 DRAM Page Mode, PLCC	10-4	SMQS256B
TMS4256NL	256K × 1 DRAM Page Mode, DIP	10-4	SMQS256B
TMS4257-10FML	256K × 1 DRAM 100 ns Nibble Mode, PLCC	10-4	SMQS256B
TMS4257-10NL	256K × 1 DRAM 100 ns Nibble Mode, DIP	10-4	SMQS256B
TMS4257-12FML	256K × 1 DRAM 120 ns Nibble Mode, PLCC	10-4	SMQS256B
TMS4257-12FMLR	256K × 1 DRAM 120 ns Nibble,PLCC Tape/Reel	10-4	SMQS256B
TMS4257-12NL	256K × 1 DRAM 120 ns Nibble Mode, DIP	10-4	SMQS256B
TMS4257-15FML	256K × 1 DRAM 150 ns Nibble Mode, PLCC Pkg	10-4	SMQS256B
TMS4257-15FMLR	256K × 1 DRAM 150 ns Nibble,PLCC Tape/Reel	10-4	SMQS256B
TMS4257-15NL	256K × 1 DRAM 150 ns Nibble Mode, DIP	10-4	SMQS256B
TMS4257FML	256K × 1 DRAM Nibble Mode, PLCC	10-4	SMQS256B
TMS4257NL	256K × 1 DRAM Nibble Mode, DIP	10-4	SMQS256B
TMS4C1024-10DJ	1M × 1 DRAM 100 ns Page Mode, SOJ	10-4	SMGS024A
TMS4C1024-10N	1M × 1 DRAM 100 ns Page Mode, DIP	10-4	SMGS024A
TMS4C1024-12DJ	1M × 1 DRAM 120 ns Page Mode, SOJ	10-4	SMGS024A
TMS4C1024-12N	1M × 1 DRAM 120 ns Page Mode, DIP	10-4	SMGS024A
TMS4C1024-15DJ	1M × 1 DRAM 150 ns Page Mode, SOJ	10-4	SMGS024A
TMS4C1024-15N	1M × 1 DRAM 150 ns Page Mode, DIP	10-4	SMGS024A
TMS4C1024DJ	1M × 1 DRAM Page Mode, SOJ	10-4	SMGS024A
TMS4C1024N	1M × 1 DRAM Page Mode, DIP	10-4	SMGS024A
TMS4C1025-10DJ	1M × 1 DRAM 100 ns Nibble Mode, SOJ	10-4	SMGS025A
TMS4C1025-10N	1M × 1 DRAM 100 ns Nibble Mode, DIP	10-4	SMGS025A

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
TMS4C1025-12DJ	1M × 1 DRAM 120 ns Nibble Mode, SOJ	10-4	SMGS025A
TMS4C1025-12N	1M × 1 DRAM 120 ns Nibble Mode, DIP	10-4	SMGS025A
TMS4C1025-15DJ	1M × 1 DRAM 150 ns Nibble Mode, SOJ	10-4	SMGS025A
TMS4C1025-15N	1M × 1 DRAM 150 ns Nibble Mode, DIP	10-4	SMGS025A
TMS4C1025DJ	1M × 1 DRAM Nibble Mode, SOJ	10-4	SMGS025A
TMS4C1025N	1M × 1 DRAM Nibble Mode, DIP	10-4	SMGS025A
TMS4C1027-10DJ	1M × 1 DRAM 100 ns Static Column Decode	10-4	SMGS027
TMS4C1027-10N	1M × 1 DRAM 100 ns Static Column Decode	10-4	SMGS027
TMS4C1027-12DJ	1M × 1 DRAM 120 ns Static Column Decode	10-4	SMGS027
TMS4C1027-12N	1M × 1 DRAM 120 ns Static Column Decode	10-4	SMGS027
TMS4C1027-15DJ	1M × 1 DRAM 15O ns Static Column Decode	10-4	SMGS027
TMS4C1027-15N	1M × 1 DRAM 150 ns Static Column Decode	10-4	SMGS027
TMS4C1027DJ	1M × 1 DRAM Static Column Decode, SOJ	10-4	SMGS027
TMS4C1027N	1M × 1 DRAM Static Column Decode, DIP	10-4	SMGS027
TMS4461-12NL	256K Multiport Video RAM, 120 ns DIP	10-4	SMVS011A
TMS4461-15NL	256K Multiport Video RAM, 150 ns DIP	10-4	SMVS011A
TMS4461-12SDL	256K Multiport Video RAM, 120 ns ZIP	10-4	SMVS011A
TMS4461-15SDL	256K Multiport Video RAM, 150 ns ZIP	10-4	SMVS011A
TMS4464-10FML	64K × 4 DRAM 100 ns, PLCC	10-4	SMBS464B
TMS4464-10NL	64K × 4 DRAM 100 ns, DIP	10-4	SMBS464B
TMS4464-12FML	64K × 4 DRAM 120 ns, PLCC	10-4	SMBS464B
TMS4464-12NL	64K × 4 DRAM 120 ns, DIP	10-4	SMBS464B
TMS4464-15FML	64K × 4 DRAM 150 ns, PLCC	10-4	SMBS464B
TMS4464-15NL	64K × 4 DRAM 150 ns, DIP	10-4	SMBS464B
TMS4464FML	64K × 4 DRAM, PLCC	10-4	SMBS464B
TMS4464NL	64K × 4 DRAM, DIP	10-4	SMBS464B
TMS44C256-10DJ	256K × 4 DRAM 100 ns Page Mode, SOJ	10-4	SMGS256
TMS44C256-10N	256K × 4 DRAM 100 ns Page Mode, DIP	10-4	SMGS256
TMS44C256-12DJ	256K × 4 DRAM 120 ns Page Mode, SOJ	10-4	SMGS256
TMS44C256-12N	256K × 4 DRAM 120 ns Page Mode, DIP	10-4	SMGS256
TMS44C256-15DJ	256K × 4 DRAM 150 ns Page Mode, SOJ	10-4	SMGS256
TMS44C256-15N	256K × 4 DRAM 150 ns Page Mode, DIP	10-4	SMGS256
TMS44C256DJ	256K × 4 DRAM Page Mode, SOJ	10-4	SMGS256
TMS44C256N	256K × 4 DRAM Page Mode, DIP	10-4	SMGS256
TMS44C257-10DJ	256K × 4 DRAM 100 ns Static Column Decode	10-4	SMGS257
TMS44C257-10N	256K × 4 DRAM 100 ns Static Column Decode	10-4	SMGS257
TMS44C257-12DJ	256K × 4 DRAM 120 ns Static Column Decode	10-4	SMGS257
TMS44C257-12N	256K × 4 DRAM 120 ns Static Column Decode	10-4	SMGS257
TMS44C257-15DJ	256K × 4 DRAM 150 ns Static Column Decode	10-4	SMGS257
TMS44C257-15N	256K × 4 DRAM 150 ns Static Column Decode	10-4	SMGS257
TMS44C257DJ	256K × 4 DRAM, Static Column Decode, SOJ	10-4	SMGS257
TMS44C257N	256K × 4 DRAM, Static Column Decode, DIP	10-4	SMGS257
TMS4500A-150FN	DRAM Controller	3-31	SDVD001
TMS4500A-150N	DRAM Controller	3-31	SDVD001
TMS4500A-200FN	DRAM Controller	3-31	SDVD001
TMS4500A-200N	DRAM Controller	3-31	SDVD001
TMS9914A	General Purpose Interface Bus (GPIB)	4-28	SPPU013
TMS32010N	NMOS 1st-Generation DSP (20 MHz)	4-5	SPRS009
TMS32010N-14	NMOS 1st-Generation DSP (14 MHz)	4-5	SPRS009
TMS32010N-25	NMOS 1st-Generation DSP (25 MHz)	4-5	SPRS009
TMS32011N	NMOS 32010 DSP (20 MHz) with Serial Port	4-5	SPRS009
TMS32020GB	NMOS 2nd-Generation DSP (20 MHz)	4-5	SPRS010
TMS34010FNL-40	Graphics System Processor (40 MHz)	4-9,4-14	SPVU001
TMS34010FNL-50	Graphics System Processsor(50 MHz)	4-9,4-14	SPVU001
TMS34010GDK	TMS34010 Graphics Design Kit	4-14,12-3	SPVB061
TMS34061FNL	Video System Controller (10 MHz)	4-11,4-14	SPPU014A
TMS34061FNL-12	Video System Controller (12.5 MHz)	4-11,4-14	SPPU014A
TMS34070NL	Color Palette (36 MHz)	4-13,4-14	SPPU016A
TMS34070NL-20	Color Palette (20 MHz)	4-13,4-14	SPPU016A
TMS34070NL-66	Color Palette (66 MHz)	4-13,4-14	SPPU016A

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
TMS38010JDL	Token Ring Communications Processor	4-21,4-22	SPWU001D
TMS38020JDL	Token Ring Protocol Handler	4-21,4-22	SPWU001D
TMS38030GBL	Token Ring System Interface	4-21,4-22	SPWU001D
TMS38051NL	Token Ring Interface Controller	4-21,4-22	SPWU001D
TMS38052NL	Token Ring Interface Transceiver	4-21,4-22	SPWU001D
TMS99531N	Dual Tone Pulse Dialer	4-28	SPPS003
TMS99532	300 Baud Modem (Bell 103)	4-28	SPPS004
TM4256EC4-10L	256K × 4 SIP 100 ns Page Mode, Pinned	10-5	SMYD006
TM4256EC4-12L	256K × 4 SIP 120 ns Page Mode, Pinned	10-5	SMYD006
TM4256EC4-15L	256K × 4 SIP 150 ns Page Mode, Pinned	10-5	SMYD006
TM4256EL9-10L	256K × 9 SIP 100 ns Page Mode, Pinned	10-5	SMYD006
TM4256EL9-12L	256K × 9 SIP 120 ns Page Mode, Pinned	10-5	SMYD006
TM4256EL9-15L	256K × 9 SIP 150 ns Page Mode, Pinned	10-5	SMYD006
TM4256FC1-10L	1M × 1 SIP 100 ns Page Mode, Pinned	10-5	SMYD006
TM4256FC1-12L	1M × 1 SIP 120 ns Page Mode, Pinned	10-5	SMYD006
TM4256FC1-15L	1M × 1 SIP 150 ns Page Mode, Pinned	10-5	SMYD006
TM4256FL8-10L	256K × 8 SIP 100 ns Page Mode, Pinned	10-5	SMYD006
TM4256FL8-12L	256K × 8 SIP 120 ns Page Mode, Pinned	10-5	SMYD006
TM4256FL8-15L	256K × 8 SIP 150 ns Page Mode, Pinned	10-5	SMYD006
TM4256GU8-10L	256K × 8 SIP 100 ns Page Mode, Leadless	10-5	SMYD006
TM4256GU8-12L	256K × 8 SIP 120 ns Page Mode, Leadless	10-5	SMYD006
TM4256GU8-15L	256K × 8 SIP 150 ns Page Mode, Leadless	10-5	SMYD006
TM4256GU9-10L	256K × 9 SIP 100 ns Page Mode, Leadless	10-5	SMYD006
TM4256GU9-12L	256K × 9 SIP 120 ns Page Mode, Leadless	10-5	SMYD006
TM4256GU9-15L	256K × 9 SIP 150 ns Page Mode, Leadless	10-5	SMYD006
TM024EAD9-10L	1M × 9 SIP 100ns Page Mode, Leadless	10-5	SMMS102B
TM024EAD9-12L	1M × 9 SIP 120ns Page Mode, Leadless	10-5	SMMS102B
TM024EAD9-15L	1M × 9 SIP 150ns Page Mode, Leadless	10-5	SMMS102B
TM024GAD8-10L	1M × 8 SIP 100ns Page Mode, Leadless	10-5	SMMS102B
TM024GAD8-12L	1M × 8 SIP 120ns Page Mode, Leadless	10-5	SMMS102B
TM024GAD8-15L	1M × 8 SIP 150ns Page Mode, Leadless	10-5	SMMS102B
TM024HAC4-10L	1M × 4 SIP 100 ns Page Mode, Leaded	10-5	SMMS104
TM024HAC4-12L	1M × 4 SIP 120 ns Page Mode, Leaded	10-5	SMMS104
TM024HAC4-15L	1M × 4 SIP 150 ns Page Mode, Leaded	10-5	SMMS104
TSP50C40A	Speech Synthesizer	9-6	SPSS007
TSP50C50	Speech Processor	9-6	SLYD002
TSP60C20	Speech ROM	9-6	SLYD002
TSP5110ANL	Voice Synthesis Processor	9-6	SPSS004
TSP5110AN2L	Voice Synthesis Processor	9-6	SPSS004
TSP5220CNL	Voice Synthesis Processor	9-6	SPSS009
TSP5220CNS	Voice Synthesis Processor	9-6	SPSS009
TSP6100	Custom Speech ROM	9-6	SPSS008
μA78L02ACD	Voltage Regulator	7-17	SLVS010
μA78L02ACLP	Voltage Regulator	7-17	SLVS010
μA78L02CD	Voltage Regulator	7-17	SLVS010
μA78L02CLP	Voltage Regulator	7-17	SLVS010
μA78L05ACD	Voltage Regulator	7-17	SLVS010
μA78L05ACLP	Voltage Regulator	7-17	SLVS010
μA78L05CD	Voltage Regulator	7-17	SLVS010
μA78L05CLP	Voltage Regulator	7-17	SLVS010
μA78L06ACLP	Voltage Regulator	7-17	SLVS010
μA78L06CLP	Voltage Regulator	7-17	SLVS010
μA78L08ACD	Voltage Regulator	7-17	SLVS010
μA78L08ACLP	Voltage Regulator	7-17	SLVS010

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
μA78L08CD	Voltage Regulator	7-17	SLVS010
μA78L08CLP	Voltage Regulator	7-17	SLVS010
μA78L09ACLP	Voltage Regulator	7-17	SLYD001
μA78L09CLP	Voltage Regulator	7-17	SLYD001
μA78L10ACD	Voltage Regulator	7-17	SLYD001
μA78L10ACLP	Voltage Regulator	7-17	SLYD001
μA78L10CD	Voltage Regulator	7-17	SLYD001
μA78L10CLP	Voltage Regulator	7-17	SLYD001
μA78L12ACD	Voltage Regulator	7-17	SLYD001
μA78L12ACLP	Voltage Regulator	7-17	SLYD001
μA78L12CD	Voltage Regulator	7-17	SLYD001
μA78L12CLP	Voltage Regulator	7-17	SLYD001
μA78L15ACD	Voltage Regulator	7-17	SLYD001
μA78L15ACLP	Voltage Regulator	7-17	SLYD001
μA78L15CD	Voltage Regulator	7-17	SLYD001
μA78L15CLP	Voltage Regulator	7-17	SLYD001
μA78M05CKC	Voltage Regulator	7-17	SLYD001
μA78M05MFK	Voltage Regulator	7-17	SLYD001
μA78M05MJG	Voltage Regulator	7-17	SLYD001
μA78M06CKC	Voltage Regulator	7-17	SLYD001
μA78M08CKC	Voltage Regulator	7-17	SLYD001
μA78M10CKC	Voltage Regulator	7-17	SLYD001
μA78M12CKC	Voltage Regulator	7-17	SLYD001
μA78M12MFK	Voltage Regulator	7-17	SLYD001
μA78M12MJG	Voltage Regulator	7-17	SLYD001
μA78M15CKC	Voltage Regulator	7-17	SLYD001
μA78M20CKC	Voltage Regulator	7-18	SLYD001
μA78M24CKC	Voltage Regulator	7-18	SLYD001
μA79M05CKC	Voltage Regulator	7-18	SLYD001
μA79M05MFK	Voltage Regulator	7-18	SLYD001
μA79M05MJG	Voltage Regulator	7-18	SLYD001
μA79M06CKC	Voltage Regulator	7-18	SLYD001
μA79M08CKC	Voltage Regulator	7-18	SLYD001
μA79M12CKC	Voltage Regulator	7-18	SLYD001
μA79M12MFK	Voltage Regulator	7-18	SLYD001
μA79M12MJG	Voltage Regulator	7-18	SLYD001
μA79M15CKC	Voltage Regulator	7-18	SLYD001
μA79M20CKC	Voltage Regulator	7-18	SLYD001
μA79M24CKC	Voltage Regulator	7-18	SLYD001
μA709CD	Operational Amplifier	7-2	SLYD001
μA709CP	Operational Amplifier	7-2	SLYD001
μA710MJ	Voltage Comparator	—	SLYD001
μA710MJG	Voltage Comparator	—	SLYD001
μA723CD	Voltage Regulator	7-16	SLVS007
μA723CJ	Voltage Regulator	7-16	SLYD001
μA723CN	Voltage Regulator	7-16	SLYD001
μA723MFK	Voltage Regulator	7-16	SLYD001
μA723MJ	Voltage Regulator	7-16	SLYD001
μA733CD	Video Amplifier	7-10	SLYD001
μA733CJ	Video Amplifier	7-10	SLYD001
μA733CN	Video Amplifier	7-10	SLYD001
μA733MJ	Video Amplifier	7-10	SLYD001
μA741CD	Operational Amplifier	7-5	SLYD001
μA741CJG	Operational Amplifier	7-5	SLYD001
μA741CP	Operational Amplifier	7-5	SLYD001
μA741FK	Operational Amplifier	7-5	SLYD001
μA741IP	Operational Amplifier	7-5	SLYD001
μA741J	Operational Amplifier	7-5	SLYD001
μA741JG	Operational Amplifier	7-5	SLYD001
μA747CD	Operational Amplifier	7-7	SLYD001

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
μA747CJ	Operational Amplifier	7-7	SLYD001
μA747CN	Operational Amplifier	7-7	SLYD001
μA747FK	Operational Amplifier	7-7	LCC4781
μA747J	Operational Amplifier	7-7	SLYD001
μA747W	Operational Amplifier	7-7	LCC4781
μA747-1FK	Operational Amplifier	7-7	LCC4781
μA747-1J	Operational Amplifier	7-7	LCC4781
μA747-1W	Operational Amplifier	7-7	LCC4781
μA748CD	Operational Amplifier	7-2	SLYD001
μA748CJG	Operational Amplifier	7-2	SLYD001
μA748CP	Operational Amplifier	7-2	SLYD001
μA2240CN	Counter/Timer	7-20	SLYD001
μA7805CKC	Voltage Regulator	7-17	SLYD001
μA7806CKC	Voltage Regulator	7-17	SLYD001
μA7808CKC	Voltage Regulator	7-17	SLYD001
μA7810CKC	Voltage Regulator	7-17	SLYD001
μA7812CKC	Voltage Regulator	7-17	SLYD001
μA7815CKC	Voltage Regulator	7-17	SLYD001
μA7818CKC	Voltage Regulator	7-18	SLYD001
μA7824CKC	Voltage Regulator	7-18	SLYD001
μA7885CKC	Voltage Regulator	7-17	SLYD001
μA7905CKC	Voltage Regulator	7-18	SLYD001
μA7906CKC	Voltage Regulator	7-18	SLYD001
μA7908CKC	Voltage Regulator	7-18	SLYD001
μA7912CKC	Voltage Regulator	7-18	SLYD001
μA7915CKC	Voltage Regulator	7-18	SLYD001
μA7918CKC	Voltage Regulator	7-18	SLYD001
μA7924CKC	Voltage Regulator	7-18	SLYD001
μA7952CKC	Voltage Regulator	7-18	SLYD001
μA9636ACD	Line Driver	6-2	SLYD002
μA9636ACJG	Line Driver	6-2	SLYD002
μA9636ACP	Line Driver	6-2	SLYD002
μA9637ACD	Line Receiver	6-3	SLYD002
μA9637ACJG	Line Receiver	6-3	SLYD002
μA9637ACP	Line Receiver	6-3	SLYD002
μA9638CD	Line Driver	6-2	SLYD002
μA9638CJG	Line Driver	6-2	SLYD002
μA9638CP	Line Driver	6-2	SLYD002
μA9639CD	Line Receiver	6-3	SLYD002
μA9639CP	Line Receiver	6-3	SLYD002
UCN4810AN	Display Driver	6-7	SLYD002
UC3846	PWM Controller	7-19	SLVS016
UC3847	PWM Controller	7-19	SLVS016
UDN2841NE	Motor Driver	6-9	SLYD002
UDN2845NE	Motor Driver	6-9	SLYD002
ULN2001AD	Actuator/Driver	6-9	SLYD002
ULN2001AN	Actuator/Driver	6-9	SLYD002
ULN2002AD	Actuator/Driver	6-9	SLYD002
ULN2002AN	Actuator/Driver	6-9	SLYD002
ULN2003AD	Actuator/Driver	6-9	SLYD002
ULN2003AN	Actuator/Driver	6-9	SLYD002
ULN2004AD	Actuator/Driver	6-9	SLYD002
ULN2004AN	Actuator/Driver	6-9	SLYD002
ULN2005AD	Actuator/Driver	6-9	SLYD002
ULN2005AN	Actuator/Driver	6-9	SLYD002
ULN2064NE	Actuator/Driver	6-9	SLYD002
ULN2065NE	Actuator/Driver	6-9	SLYD002
ULN2066NE	Actuator/Driver	6-9	SLYD002
ULN2067NE	Actuator/Driver	6-9	SLYD002
ULN2068NE	Actuator/Driver	6-9	SLYD002

PRODUCT NUMBER	GENERAL DESCRIPTION	SECTION/ PAGE	TI REFERENCE DOCUMENT
ULN2069NE	Actuator/Driver	6-9	SLYD002
ULN2074NE	Actuator/Driver	6-9	SLYD002
ULN2075NE	Actuator/Driver	6-9	SLYD002
1N5722	Phototransistor	8-7	SOYD002
1N5723	Phototransistor	8-7	SOYD002
1N5724	Phototransistor	8-7	SOYD002
1N5725	Phototransistor	8-7	SOYD002
3N261	Optocoupler	8-4	SOYD002
3N262	Optocoupler	8-4	SOYD002
3N263	Optocoupler	8-4	SOYD002
4N22	Optocoupler	8-4	SOYD002
4N23	Optocoupler	8-4	SOYD002
4N24	Optocoupler	8-4	SOYD002
4N25	Optocoupler	8-4	SOYD002
4N26	Optocoupler	8-4	SOYD002
4N27	Optocoupler	8-4	SOYD002
4N28	Optocoupler	8-4	SOYD002
4N35	Optocoupler	8-4	SOYD002
4N36	Optocoupler	8-4	SOYD002
4N37	Optocoupler	8-4	SOYD002
4N47	Optocoupler	8-4	SOYD002
4N48	Optocoupler	8-4	SOYD002
4N49	Optocoupler	8-4	SOYD002
6N135	Optocoupler	8-5	SOYD002
6N136	Optocoupler	8-5	SOYD002
6N137	Optocoupler	8-6	SOYD002
6N138	Optocoupler	8-6	SOYD002
6N139	Optocoupler	8-6	SOYD002

FUNCTIONAL INDEXES

Application Specific Integrated Circuits (ASIC) Functional Index

USING THE FUNCTIONAL INDEXES

The ASIC Functional Index begins with an explanation of TI's ASIC naming convention and an index of logic function prefixes. It is grouped into three categories:

- 1-μm TGC100 Series CMOS Gate Arrays
- 1-μm TSC500 Series CMOS Standard Cells
- 2-μm SystemCell Series CMOS Standard Cells

and matches macros and cells, within each category, to the appropriate function per the following example:

TGC100 SERIES 1-μm CMOS GATE ARRAYS

AND Gates

Macro Name	Functional Description
AN210LJ	2-Input AND Gate
AN220LJ	2-Input AND Gate, 2X Drive
AN310LJ	3-Input AND Gate
AN320LJ	3-Input AND Gate, 2X Drive

Comparators (Software Macros)

Macro Name	Functional Description
S085LJ	4-Bit Magnitude Comparator
S686LJ	8-Bit Magnitude Comparator
S688LJ	8-Bit Identity Comparator

The TI reference document, containing the most current technical data, is cited at the beginning of each category.

The naming convention for TI's gate array and standard cell functions is shown in Figure 1. An index of logic function prefixes is listed in Table 1.

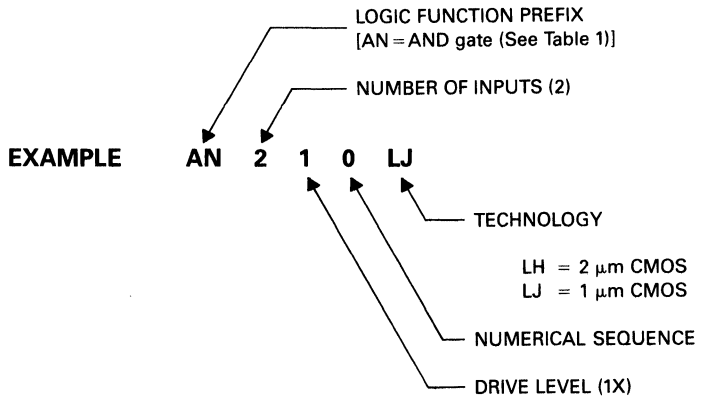


Figure 1. ASIC Naming Convention

Table 1. Index to Function Prefixes

PREFIX	DESCRIPTION	PREFIX	DESCRIPTION
AN	AND Gates	M	Microprocessor Bit-Slice Elements
AD	AND-OR Gates	MU	Multiplexers
BF	Multi-stage AND,NAND,NOR,OR Gates	MV	Multivibrator (One-Shot)
BU	Buffers	NA	NAND Gates
CO	Comparators	NO	NOR Gates
DE	Decoders/Demultiplexers	OP	Output Buffers
DF/DT	Flip-Flops, D-Type	OR	OR Gates
EN	Exclusive-NOR Gates	OS	Oscillators
EX	Exclusive-OR Gates	PD/PR	Pulldown/Pullup Terminators
FI	First-In, First-Out Memories	R	Shift Registers
GM/GS	S-R Latches, Gated Type	RA	Hardwired RAM Macro Cells
IO	Bidirectional I/O Buffers	RF	Register Files
IP	Input Buffers	S	Software Macros
IV	Inverters	TA	Flip-Flops, Toggle Type
JK	Flip-Flops, J-K Type	TD	Scan Flip-Flops
LA	Latches, D-Type and S-R	TO	Tie-Off Gate
LH	Bus Holder Latch		

1-μm TGC100 SERIES CMOS GATE ARRAYS*

*Technical data is contained in the TGC100 Series Family Data Sheet (SRGS006).

AND Gates

MACRO NAME	FUNCTIONAL DESCRIPTION
AN210LJ	2-Input AND Gate
AN220LJ	2-Input AND Gate, 2X Drive
AN310LJ	3-Input AND Gate
AN320LJ	3-Input AND Gate, 2X Drive
AN410LJ	4-Input AND Gate
AN420LJ	4-Input AND Gate, 2X Drive
AN510LJ	5-Input AND Gate
AN810LJ	8-Input AND Gate

AND-OR Gates

MACRO NAME	FUNCTIONAL DESCRIPTION
AO220LJ	AND-OR Gate, 2X Drive $Y=(A \cdot B)+(C \cdot D)$
AO221LJ	AND-NOR Gate, 2X Drive $Y=\overline{(A \cdot B)+(C \cdot D)}$
AO241LJ	2-Wide, 2-Input AND-OR Gate

Arithmetic Operators (Software Macros)

MACRO NAME	FUNCTIONAL DESCRIPTION
S181LJ	Arithmetic Logic Unit/Function Generator
S182LJ	4-Bit Look-Ahead Carry Generator
S283LJ	4-Bit Binary Full Adder Fast Carry

Boolean Functions

MACRO NAME	FUNCTIONAL DESCRIPTION
BF001LJ	AND-NOR Gate $Y=\overline{A1+(B1 \cdot B2)}$
BF011LJ	AND-NOR Gate $Y=\overline{(A1 \cdot A2)+(B1 \cdot B2)+(C1 \cdot C2)}$
BF022LJ	OR-AND-NOR Gate $Y=\overline{A1 \cdot A2+[B1 \cdot B2 \cdot (C1+C2)]}$
BF051LJ	OR-NAND Gate $Y=\overline{A1 \cdot (B1+B2)}$
BF053LJ	OR-NAND Gate $Y=\overline{(A1+A2) \cdot (B1+B2)}$

Comparators (Software Macros)

MACRO NAME	FUNCTIONAL DESCRIPTION
S085LJ	4-Bit Magnitude Comparator
S686LJ	8-Bit Magnitude Comparator
S688LJ	8-Bit Identity Comparator

Counters (Software Macros)

MACRO NAME	FUNCTIONAL DESCRIPTION
S161ALJ	Synchronous 4-Bit Binary Counter with Clear
S163ALJ	Synchronous 4-Bit Binary Counter
S191LJ	Synchronous Up/Down Bin Counter with Down/Up Mode Control
S193LJ	Synchronous 4-Bit Up/Down Counter (Dual Clock with Clear)

Decoders/Demultiplexers (Software Macros)

MACRO NAME	FUNCTIONAL DESCRIPTION
S138LJ	3-Line to 8-Line Decoder/Demultiplexer
S139LJ	Dual 2-Line to 4-Line Decoder

D-Type Flip-Flops

MACRO NAME	FUNCTIONAL DESCRIPTION
DFB20LJ	D-Type Flip-Flop with Preset, Clear, 2X Drive
DTB00LJ	D-Type Flip-Flop with Preset, Clear
DTB10LJ	D-Type Flip-Flop with Preset, Clear, 1X Drive
DTB20LJ	D-Type Flip-Flop with Preset, Clear, 2X Drive
DTC00LJ	D-Type Flip-Flop with Clear
DTC10LJ	D-Type Flip-Flop with Clear, 1X Drive
DTC20LJ	D-Type Flip-Flop with Clear, 2X Drive
DTN00LJ	D-Type Flip-Flop
DTN10LJ	D-Type Flip-Flop, 1X Drive
DTN20LJ	D-Type Flip-Flop, 2X Drive
DTP00LJ	D-Type Flip-Flop with Preset
DTP10LJ	D-Type Flip-Flop with Preset, 1X Drive
DTP20LJ	D-Type Flip-Flop with Preset, 2X Drive
R2405LJ	4-Bit Flip-Flops with Asynchronous Clear
R2406LJ	4-Bit Flip-Flops with Complementary Outputs

D-Type Flip-Flop (Software Macro)

MACRO NAME	FUNCTIONAL DESCRIPTION
S173LJ	4-Bit D-Type Register with 3-State Outputs
S175LJ	Quad D-Type Flip-Flop with Complementary Outputs
S273LJ	Octal D-Type Flip-Flop
S374LJ	8-Bit D-Type Flip-Flop with 3-State Outputs

Exclusive-OR/NOR Gates

MACRO NAME	FUNCTIONAL DESCRIPTION
EN210LJ	2-Input Exclusive-NOR Gate
EX210LJ	2-Input Exclusive-OR Gate
EX220LJ	2-Input Exclusive-OR Gate, 2X Drive

Inputs/Outputs, Bidirectionals

MACRO NAME	FUNCTIONAL DESCRIPTION
IO#21LJ	2-mA, 3-State I/O Buffer with CMOS Input
IO#24LJ	2-mA, 3-State I/O Buffer with TTL Input
IO#41LJ	4-mA, 3-State I/O Buffer with CMOS Input
IO#44LJ	4-mA, 3-State I/O Buffer with TTL Input
IO#81LJ	8-mA, 3-State I/O Buffer with CMOS Input
IO#84LJ	8-mA, 3-State I/O Buffer with TTL Input
IO#21LJ	2-mA, 3-State I/O Buffer with CMOS Input with Pull-Up
IO#24LJ	2-mA, 3-State I/O Buffer with TTL Input with Pull-Up
IO#41LJ	4-mA, 3-State I/O Buffer with CMOS Input with Pull-Up
IO#44LJ	4-mA, 3-State I/O Buffer with TTL Input with Pull-Up
IO#81LJ	8-mA, 3-State I/O Buffer with CMOS Input with Pull-Up
IO#84LJ	8-mA, 3-State I/O Buffer with TTL Input with Pull-Up
IO#21LJ	2-mA, 3-State I/O Buffer with CMOS Input with Pull-Down
IO#24LJ	2-mA, 3-State I/O Buffer with TTL Input with Pull-Down
IO#41LJ	4-mA, 3-State I/O Buffer with CMOS Input with Pull-Down
IO#44LJ	4-mA, 3-State I/O Buffer with TTL Input with Pull-Down
IO#81LJ	8-mA, 3-State I/O Buffer with CMOS Input with Pull-Down
IO#84LJ	8-mA, 3-State I/O Buffer with TTL Input with Pull-Down

Output buffers available with and without di/dt control. Output buffers with di/dt control reduce electromagnetic interference (EMI) and transient power requirements. Use of non-di/dt controlled buffers increases the number of power and ground pin requirements and should be limited to outputs with critical timing specifications.

Inputs

MACRO NAME	FUNCTIONAL DESCRIPTION
IPI00LJ	Inverting CMOS-Compatible Input Buffer
IPI01LJ	CMOS-Compatible Input Buffer
IPI04LJ	TTL-Compatible Input Buffer
IPI06LJ	CMOS-Compatible Inverting Input Buffer with Hysteresis
IPL01LJ	CMOS-Compatible Input Buffer with Pullup
IPL04LJ	TTL-Compatible Input Buffer with Pullup
IPU01LJ	CMOS-Compatible Input Buffer with Pulldown
IPU04LJ	TTL-Compatible Input Buffer with Pulldown

Inverters/Buffers

MACRO NAME	FUNCTIONAL DESCRIPTION
BU130LJ	Delay Buffer, 3X Drive
BU150LJ	Delay Buffer, 5X Drive
IV110LJ	Inverter
IV120LJ	Inverter, 2X Drive
IV140LJ	Inverter, 4X Drive
IV211LJ	Inverting 3-State Buffer with Low Enable
S244LJ	Octal Internal Bus Buffer with 3-State Outputs

J-K Flip-Flops

MACRO NAME	FUNCTIONAL DESCRIPTION
JKB20LJ	J-K Positive-Edge-Triggered Flip-Flop with Preset, Clear, 2X Drive
JKB21LJ	J-K Negative-Edge-Triggered Flip-Flop with Preset, Clear, 2X Drive

Latches

MACRO NAME	FUNCTIONAL DESCRIPTION
LAB20LJ	S-R Latch, 2X Drive
LAH20LJ	D-Type Latch with High Enable, 2X Drive
LAH22LJ	D-Type Latch with Low Enable and Clear, 2X Drive
LH110LJ	3-State Bus Holder
LH400LJ	4-Bit Latch

Latches (Software Macros)

MACRO NAME	FUNCTIONAL DESCRIPTION
S373LJ	8-Bit D-Type Latch with 3-State Outputs
S375LJ	4-Bit Bistable Latch

Multiplexer

MACRO NAME	FUNCTIONAL DESCRIPTION
MU111LJ	2-Line to 1-Line Multiplexer

Multiplexers (Software Macros)

MACRO NAME	FUNCTIONAL DESCRIPTION
S150LJ	16-line to 1-line Multiplexer
S151LJ	8-Line to 1-Line Multiplexer
S153LJ	Dual 4-Line to 1-Line Multiplexer
S157LJ	Quad 2-Line to 1-Line Multiplexer

NAND Gates

MACRO NAME	FUNCTIONAL DESCRIPTION
NA210LJ	2-Input NAND Gate
NA220LJ	2-Input NAND Gate, 2X Drive
NA310LJ	3-Input NAND Gate
NA320LJ	3-Input NAND Gate, 2X Drive
NA410LJ	4-Input NAND Gate
NA420LJ	4-Input NAND Gate, 2X Drive
NA510LJ	5-Input NAND Gate
NA520LJ	5-Input NAND Gate, 2X Drive
NA810LJ	8-Input NAND Gate
NA820LJ	8-Input NAND Gate, 2X Drive

NOR GATES

MACRO NAME	FUNCTIONAL DESCRIPTION
NO210LJ	2-Input NOR Gate
NO220LJ	2-Input NOR Gate, 2X Drive
NO310LJ	3-Input NOR Gate
NO320LJ	3-Input NOR Gate, 2X Drive
NO410LJ	4-Input NOR Gate
NO420LJ	4-Input NOR Gate, 2X Drive
NO510LJ	5-Input NOR Gate
NO520LJ	5-Input NOR Gate, 2X Drive
NO810LJ	8-Input NOR Gate
NO820LJ	8-Input NOR Gate, 2X Drive

OR Gates

MACRO NAME	FUNCTIONAL DESCRIPTION
OR210LJ	2-Input OR Gate
OR220LJ	2-Input OR Gate, 2X Drive
OR310LJ	3-Input OR Gate
OR320LJ	3-Input OR Gate, 2X Drive
OR410LJ	4-Input OR Gate
OR420LJ	4-Input OR Gate, 2X Drive
OR510LJ	5-Input OR Gate
OR810LJ	8-Input OR Gate

OR-NAND Gate

MACRO NAME	FUNCTIONAL DESCRIPTION
OA241LJ	2-Wide, 2-Input AND-OR Invert Gate

Outputs

MACRO NAME	FUNCTIONAL DESCRIPTION
OP#20LJ	2-mA, Totem-Pole Output Buffer
OP#21LJ	2-mA, Open-Drain Output Buffer
OP#23LJ	2-mA, 3-State Output Buffer with Low Enable
OP#24LJ	2-mA, P-Channel Open-Drain Output Buffer
OP#40LJ	4-mA, Totem-Pole Output Buffer
OP#41LJ	4-mA, Open-Drain Output Buffer
OP#43LJ	4-mA, 3-State Output Buffer with Low Enable
OP#44LJ	4-mA, P-Channel Open-Drain Output Buffer
OP#80LJ	8-mA, Totem-Pole Output Buffer
OP#81LJ	8-mA, Open-Drain Output Buffer
OP#83LJ	8-mA, 3-State Output Buffer with Low Enable
OP#84LJ	8-mA, P-Channel Open-Drain Output Buffer

Output buffers available with and without di/dt control. Output buffers with di/dt control reduce electromagnetic interference (EMI) and transient power requirements. Use of non-di/dt controlled buffers increases the number of power and ground pin requirements and should be limited to outputs with critical timing specifications.

Parity Tree (Software Macro)

MACRO NAME	FUNCTIONAL DESCRIPTION
S180XLJ	8-Bit Odd/Even Parity Tree

Shift Registers (Software Macros)

MACRO NAME	FUNCTIONAL DESCRIPTION
S164LJ	8-Bit Parallel-Out Serial Shift Registers
S165LJ	Parallel-Load 8-Bit Shift Registers
S194ALJ	Bidirectional Universal Shift Registers

Toggle Flip-Flop

MACRO NAME	FUNCTIONAL DESCRIPTION
TAB20LJ	Toggle Flip-Flop with Preset, Clear, 2X Drive

Tie-Off Gate

MACRO NAME	FUNCTIONAL DESCRIPTION
TO010LJ	High-Level and Low-Level Tie-Off Gate

1-μm TSC500 SERIES CMOS STANDARD CELLS*

*Technical data is contained in the TCS500 Series Family Data Sheet (SRSS033).

AND Gates

CELL NAME	FUNCTIONAL DESCRIPTION
AN210LJ	2-Input AND Gate
AN220LJ	2-Input AND Gate, 2X Drive
AN240LJ	2-Input AND Gate, 4X Drive
AN260LJ	2-Input AND Gate, 6X Drive
AN310LJ	3-Input AND Gate
AN320LJ	3-Input AND Gate, 2X Drive
AN340LJ	3-Input AND Gate, 4X Drive
AN360LJ	3-Input AND Gate, 6X Drive
AN410LJ	4-Input AND Gate
AN420LJ	4-Input AND Gate, 2X Drive
AN440LJ	4-Input AND Gate, 4X Drive
AN460LJ	4-Input AND Gate, 6X Drive
AN510LJ	5-Input AND Gate
AN810LJ	8-Input AND Gate

AND-OR Gates

CELL NAME	FUNCTIONAL DESCRIPTION
AO220LJ	AND-OR Gate, 2X Drive $Y=(A \cdot B)+(C \cdot D)$
AO221LJ	AND-NOR Gate, 2X Drive $Y=\overline{(A \cdot B)+(C \cdot D)}$

Arithmetic Operators (Software Macros)

CELL NAME	FUNCTIONAL DESCRIPTION
S181LJ	Arithmetic Logic Unit/Function Generator
S283LJ	4-Bit Binary Full Adder, Fast Carry

Boolean Functions

CELL NAME	FUNCTIONAL DESCRIPTION
BF001LJ	AND-NOR Gate $Y=\overline{A1+(B1 \cdot B2)}$
BF002LJ	AND-NOR Gate $Y=\overline{A1+(B1 \cdot B2 \cdot B3)}$
BF003LJ	AND-NOR Gate $Y=\overline{(A1 \cdot A2)+(B1 \cdot B2)}$
BF004LJ	AND-NOR Gate $Y=\overline{(A1 \cdot A2)+(B1 \cdot B2 \cdot B3)}$
BF005LJ	AND-NOR Gate $Y=\overline{(A1 \cdot A2 \cdot A3)+(B1 \cdot B2 \cdot B3)}$
BF006LJ	AND-NOR Gate $Y=\overline{A1+A2+(B1 \cdot B2)}$
BF007LJ	AND-NOR Gate $Y=\overline{A1+A2+(B1 \cdot B2 \cdot B3)}$
BF008LJ	AND-NOR Gate $Y=\overline{A1+(B1 \cdot B2)+(C1 \cdot C2)}$
BF009LJ	AND-NOR Gate $Y=\overline{A1+(B1 \cdot B2)+(C1 \cdot C2 \cdot C3)}$
BF010LJ	AND-NOR Gate $Y=\overline{A1+(B1 \cdot B2 \cdot B3)+(C1 \cdot C2 \cdot C3)}$
BF011LJ	AND-NOR Gate $Y=\overline{(A1 \cdot A2)+(B1 \cdot B2)+(C1 \cdot C2)}$
BF012LJ	AND-NOR Gate $Y=\overline{(A1 \cdot A2)+(B1 \cdot B2)+(C1 \cdot C2 \cdot C3)}$
BF013LJ	AND-NOR Gate $Y=\overline{(A1 \cdot A2)+(B1 \cdot B2 \cdot B3)+(C1 \cdot C2 \cdot C3)}$
BF014LJ	AND-NOR Gate $Y=\overline{(A1 \cdot A2 \cdot A3)+(B1 \cdot B2 \cdot B3)+(C1 \cdot C2 \cdot C3)}$
BF015LJ	OR-AND-NOR Gate $Y=\overline{A1+[B1 \cdot (C1+C2)]}$
BF016LJ	AND-OR-NAND Gate $Y=\overline{A1+[(B1+B2) \cdot (C1+C2)]}$
BF017LJ	OR-AND-NOR Gate $Y=\overline{A1+[B1 \cdot B2 \cdot (C1+C2)]}$
BF020LJ	OR-AND-NOR Gate $Y=\overline{A1 \cdot A2+[B1 \cdot (C1+C2)]}$
BF022LJ	OR-AND-NOR Gate $Y=\overline{A1 \cdot A2+[B1 \cdot B2 \cdot (C1+C2)]}$
BF025LJ	OR-AND-NOR Gate $Y=\overline{A1 \cdot A2 \cdot A3+[B1 \cdot (C1+C2)]}$
BF027LJ	OR-AND-NOR Gate $Y=\overline{A1 \cdot A2 \cdot A3+[B1 \cdot B2 \cdot (C1+C2)]}$
BF028LJ	OR-AND-NOR Gate $Y=\overline{A1 \cdot A2 \cdot A3+[B1 \cdot (C1+C2) \cdot (D1+D2)]}$
BF030LJ	AND-OR-AND-NOR Gate $Y=\overline{A1+\{B1 \cdot [C1+(D1 \cdot D2)]\}}$
BF034LJ	AND-OR-AND-NOR Gate $Y=\overline{(A1 \cdot A2)+\{B1 \cdot [C1+(D1 \cdot D2)]\}}$
BF035LJ	AND-OR-AND-NOR Gate $Y=\overline{(A1 \cdot A2)+\{B1 \cdot [(C1 \cdot C2)+(D1 \cdot D2)]\}}$
BF051LJ	OR-NAND Gate $Y=\overline{A1 \cdot (B1+B2)}$
BF052LJ	OR-NAND Gate $Y=\overline{A1 \cdot (B1+B2+B3)}$
BF053LJ	OR-NAND Gate $Y=\overline{(A1+A2) \cdot (B1+B2)}$

Boolean Functions (Continued)

CELL NAME	FUNCTIONAL DESCRIPTION
BF054LJ	OR-NAND Gate $Y=\overline{(A1+A2)\cdot(B1+B2+B3)}$
BF055LJ	OR-NAND Gate $Y=\overline{(A1+A2+A3)\cdot(B1+B2+B3)}$
BF056LJ	OR-NAND Gate $Y=\overline{A1\cdot A2\cdot(B1+B2)}$
BF057LJ	OR-NAND Gate $Y=\overline{A1\cdot A2\cdot(B1+B2+B3)}$
BF058LJ	OR-NAND Gate $Y=\overline{A1\cdot(B1+B2)\cdot(C1+C2)}$
BF059LJ	OR-NAND Gate $Y=\overline{A1\cdot(B1+B2)\cdot(C1+C2+C3)}$
BF060LJ	OR-NAND Gate $Y=\overline{A1\cdot(B1+B2+B3)\cdot(C1+C2+C3)}$
BF062LJ	OR-NAND Gate $Y=\overline{(A1+A2)\cdot(B1+B2)\cdot(C1+C2+C3)}$
BF063LJ	OR-NAND Gate $Y=\overline{(A1+A2)\cdot(B1+B2+B3)\cdot(C1+C2+C3)}$
BF064LJ	OR-NAND Gate $Y=\overline{(A1+A2+A3)\cdot(B1+B2+B3)\cdot(C1+C2+C3)}$
BF065LJ	AND-OR-NAND Gate $Y=\overline{A1\cdot[B1+(C1\cdot C2)]}$
BF066LJ	AND-OR-NAND Gate $Y=\overline{A1\cdot[(B1\cdot B2)+(C1\cdot C2)]}$
BF067LJ	AND-OR-NAND Gate $Y=\overline{A1\cdot[B1+B2+(C1\cdot C2)]}$
BF068LJ	AND-OR-NAND Gate $Y=\overline{A1\cdot[B1+(C1\cdot C2)+(D1\cdot D2)]}$
BF069LJ	AND-OR-NAND Gate $Y=\overline{A1\cdot[(B1\cdot B2)+(C1\cdot C2)+(D1\cdot D2)]}$
BF070LJ	AND-OR-NAND Gate $Y=\overline{(A1+A2)\cdot[B1+(C1\cdot C2)]}$
BF071LJ	AND-OR-NAND Gate $Y=\overline{(A1+A2)\cdot[(B1\cdot B2)+(C1\cdot C2)]}$
BF072LJ	AND-OR-NAND Gate $Y=\overline{(A1+A2)\cdot[B1+B2+(C1\cdot C2)]}$
BF075LJ	AND-OR-NAND Gate $Y=\overline{(A1+A2+A3)\cdot[B1+(C1\cdot C2)]}$
BF080LJ	OR-AND-OR-NAND Gate $Y=\overline{A1\cdot\{B1+[C1\cdot(D1+D2)]\}}$
BF081LJ	OR-AND-OR-NAND Gate $Y=\overline{A1\cdot\{B1+[(C1+C2)\cdot(D1+D2)]\}}$
BF082LJ	OR-AND-OR-NAND Gate $Y=\overline{A1\cdot\{(B1\cdot B2)+[C1\cdot(D1+D2)]\}}$
BF088LJ	OR-AND-OR-NAND Gate $Y=\overline{(A1+A2+A3)\cdot\{B1+[C1\cdot(D1+D2)]\}}$

Buffers, 3-State (Software Macros)

CELL NAME	FUNCTIONAL DESCRIPTION
S244LJ	Octal Internal Bus Buffer with 3-State Outputs
S245LJ	Octal Internal 3-State Bus Transceiver

Comparators (Software Macros)

CELL NAME	FUNCTIONAL DESCRIPTION
S085LJ	4-Bit Magnitude Comparator
S686LJ	8-Bit Magnitude Comparator
S688LJ	8-Bit Identity Comparator

Counters

CELL NAME	FUNCTIONAL DESCRIPTION
R2408LJ	4-Bit Ripple Counter

Counters (Software Macros)

CELL NAME	FUNCTIONAL DESCRIPTION
S161ALJ	Synchronous 4-Bit Binary Counter with Clear
S163ALJ	Synchronous 4-Bit Binary Counter
S177LJ	1-Bit and 3-Bit Binary Ripple Counters
S191LJ	Synchronous 4-Bit Up/Down Binary Counter with Down/Up Mode Control
S193LJ	Synchronous 4-Bit Up/Down Counter (Dual Clock with Clear)
S393LJ	Dual 4-Bit Ripple Counters
S590LJ	8-Bit Binary Counter with 3-State Output Register
S593XLJ	8-Bit Binary Counter with Input Register
S669LJ	Synchronous 4-Bit Up/Down Binary Counter with Look-Ahead

Decoders/Demultiplexers

CELL NAME	FUNCTIONAL DESCRIPTION
DE210LJ	2-Line to 4-Line Decoder
DE212LJ	2-Line to 4-Line Decoder with High Enable

Decoders/Demultiplexers (Software Macros)

CELL NAME	FUNCTIONAL DESCRIPTION
S137LJ	3-Line to 8-Line Decoder with Address Latches
S138LJ	3-Line to 8-Line Decoder/Demultiplexer
S139LJ	Dual 2-Line to 4-Line Decoder
S155LJ	Dual 2-Line to 4-Line Decoder with Data, Enable

D-Type Flip-Flops

CELL NAME	FUNCTIONAL DESCRIPTION
DFB20LJ	D-Type Flip-Flop with Preset, Clear, 2X Drive
DFC20LJ	D-Type Flip-Flop with Clear, 2X Drive
DFN20LJ	D-Type Flip-Flop, 2X Drive
DFP20LJ	D-Type Flip-Flop with Preset, 2X Drive
DFY20LJ	D-Type Flip-Flop with Grounded-D, Preset, 2X Drive
DFZ20LJ	D-Type Flip-Flop with Grounded-D Input, Preset, Clear, 2X Drive
DTB10LJ	D-Type Flip-Flop with Preset, Clear, 1X Drive
DTC10LJ	D-Type Flip-Flop with Clear, 1X Drive
DTN10LJ	D-Type Flip-Flop, 1X Drive
DTP10LJ	D-Type Flip-Flop with Preset, 1X Drive
R2405LJ	4-Bit Flip-Flops with Asynchronous Clear
R2406LJ	4-Bit Flip-Flops with Complementary Outputs
R2407LJ	4-Bit Flip-Flops with 3-State Outputs

D-Type Flip-Flops (Software Macros)

CELL NAME	FUNCTIONAL DESCRIPTION
S173LJ	4-Bit D-Type Register with 3-State Outputs
S174LJ	Hex D-Type Flip-Flop
S175LJ	Quad D-Type Flip-Flop with Complementary Outputs
S273LJ	Octal D-Type Flip-Flop
S374LJ	8-Bit D-Type Flip-Flop with 3-State Outputs

Exclusive-OR/NOR Gates

CELL NAME	FUNCTIONAL DESCRIPTION
EN210LJ	2-Input Exclusive-NOR Gate
EX210LJ	2-Input Exclusive-OR Gate
EX211LJ	2-Input Exclusive-OR Gate
EX220LJ	2-Input Exclusive-OR Gate, 2X Drive
EX221LJ	2-Input Exclusive-OR Gate, 2X Drive
EX240LJ	2-Input Exclusive-OR Gate, 4X Drive
EX241LJ	2-Input Exclusive-OR Gate, 4X Drive

First-In-First-Out Memories

CELL NAME	FUNCTIONAL DESCRIPTION
FI503LJ	32-Word by 9-Bit FIFO with 3-State Outputs, Enhanced Flags
FI603LJ	64-Word by 9-Bit FIFO with 3-State Outputs, Enhanced Flags
FI703LJ	128-Word by 9-Bit FIFO with 3-State Outputs, Enhanced Flag

Gated S-R/S-R Latches

CELL NAME	FUNCTIONAL DESCRIPTION
GMS10LJ	5-Input Gated S-R Latch with Separate Set
GM010LJ	4-Input Gated S-R Latch
GM110LJ	5-Input Gated S-R Latch with Separate Reset
GM210LJ	6-Input Gated S-R Latch with Separate Set, Reset
GM310LJ	6-Input Gated S-R Latch
GM410LJ	7-Input Gated S-R Latch with Separate Reset
GM510LJ	8-Input Gated S-R Latch with Separate Set, Reset
GSS10LJ	5-Input Gated S-R Latch with Separate Set
GS010LJ	4-Input Gated S-R Latch
GS110LJ	5-Input Gated S-R Latch with Separate Reset
GS210LJ	6-Input Gated S-R Latch with Separate Set, Reset
GS310LJ	6-Input Gated S-R Latch
GS410LJ	7-Input Gated S-R Latch with Separate Reset
GS510LJ	8-Input Gated S-R Latch with Separate Set, Reset

Inputs/Outputs, Bidirectionals

CELL NAME	FUNCTIONAL DESCRIPTION
IO#21LJ	2-mA, Push-Pull I/O Buffer with CMOS Input
IO#41LJ	4-mA, Push-Pull I/O Buffer with CMOS Input
IO#61LJ	6-mA, Push-Pull I/O Buffer with CMOS Input
IO#01LJ	10-mA, Push-Pull I/O Buffer with CMOS Input
IO#A1LJ	16-mA, Push-Pull I/O Buffer with CMOS Input
IO#B1LJ	16/24-mA, Push-Pull I/O Buffer with CMOS Input
IO#E1LJ	16/48-mA, Push-Pull I/O Buffer with CMOS Input
IO#G1LJ	16/64-mA, Push-Pull I/O Buffer with CMOS Input
IO#24LJ	2-mA, Push-Pull I/O Buffer with TTL Input
IO#44LJ	4-mA, Push-Pull I/O Buffer with TTL Input
IO#64LJ	6-mA, Push-Pull I/O Buffer with TTL Input
IO#04LJ	10-mA, Push-Pull I/O Buffer with TTL Input
IO#A4LJ	16-mA, Push-Pull I/O Buffer with TTL Input
IO#B4LJ	16/24-mA, Push-Pull I/O Buffer with TTL Input
IO#E4LJ	16/48-mA, Push-Pull I/O Buffer with TTL Input
IO#G4LJ	16/64-mA, Push-Pull I/O Buffer with TTL Input
IO#2HLJ	2-mA, Open-Drain I/O Buffer with CMOS Input
IO#4HLJ	4-mA, Open-Drain I/O Buffer with CMOS Input
IO#6HLJ	6-mA, Open-Drain I/O Buffer with CMOS Input
IO#0HLJ	10-mA, Open-Drain I/O Buffer with CMOS Input
IO#AHLJ	16-mA, Open-Drain I/O Buffer with CMOS Input
IO#BHLJ	24-mA, Open-Drain I/O Buffer with CMOS Input
IO#EHLJ	48-mA, Open-Drain I/O Buffer with CMOS Input
IO#GHLJ	64-mA, Open-Drain I/O Buffer with CMOS Input
IO#2KLJ	2-mA, Open-Drain I/O Buffer with TTL Input
IO#4KLJ	4-mA, Open-Drain I/O Buffer with TTL Input
IO#6KLJ	6-mA, Open-Drain I/O Buffer with TTL Input
IO#0KLJ	10-mA, Open-Drain I/O Buffer with TTL Input
IO#AKLJ	16-mA, Open-Drain I/O Buffer with TTL Input
IO#BKLJ	24-mA, Open-Drain I/O Buffer with TTL Input
IO#EKLJ	48-mA, Open-Drain I/O Buffer with TTL Input
IO#GKLJ	64-mA, Open-Drain I/O Buffer with TTL Input

Output buffers available with and without di/dt control. Output buffers with di/dt control reduce electromagnetic interference (EMI) and transient power requirements. Use of non-di/dt controlled buffers increases the number of power and ground pin requirements and should be limited to outputs with critical timing specifications.

Inputs

CELL NAME	FUNCTIONAL DESCRIPTION
IPI01LJ	CMOS-Compatible Non-Inverting Input Buffer
IPI11LJ	CMOS-Compatible Non-Inverting Clock Buffer
IPI04LJ	TTL-Compatible Non-Inverting Input Buffer
IPI14LJ	TTL-Compatible Non-Inverting Clock Buffer
IPI07LJ	CMOS-Compatible Non-Inverting Input Buffer with Hysteresis
IPI09LJ	TTL-Compatible Non-Inverting Input Buffer with Hysteresis

Inverters/Buffers

CELL NAME	FUNCTIONAL DESCRIPTION
BU110LJ	Delay Buffer
BU111LJ	Inverting Delay Buffer
BU112LJ	Delay Buffer
BU120LJ	Delay Buffer, 2X Drive
BU130LJ	Delay Buffer, 3X Drive
BU221LJ	3-State Buffer with Low Enable, 2X Drive
BU222LJ	3-State Buffer with High Enable, 2X Drive
BU261LJ	3-State Buffer with Low Enable, 6X Drive
BU262LJ	3-State Buffer with High Enable, 6X Drive
IV101LJ	Inverter, 10X Drive
IV110LJ	Inverter
IV120LJ	Inverter, 2X Drive
IV130LJ	Inverter, 3X Drive
IV140LJ	Inverter, 4X Drive
IV160LJ	Inverter, 6X Drive
IV180LJ	Inverter, 8X Drive
IV211LJ	Inverting 3-State Buffer with Low Enable
IV212LJ	Inverting 3-State Buffer with High Enable
IV221LJ	Inverting 3-State Buffer with Low Enable, 2X Drive
IV222LJ	Inverting 3-State Buffer with High Enable, 2X Drive
IV241LJ	Inverting 3-State Buffer with Low Enable, 4X Drive
IV242LJ	Inverting 3-State Buffer with High Enable, 4X Drive

J-K Flip-Flops

CELL NAME	FUNCTIONAL DESCRIPTION
JKB20LJ	J-K Positive-Edge-Triggered Flip-Flop with Preset, Clear, 2X Drive
JKB21LJ	J-K Negative-Edge-Triggered Flip-Flop with Preset, Clear, 2X Drive

Latches

CELL NAME	FUNCTIONAL DESCRIPTION
LAB10LJ	S-R Latch
LAB20LJ	S-R Latch, 2X Drive
LAH10LJ	D-Type Latch with High Enable
LAH11LJ	D-Type Latch with High Enable
LAH20LJ	D-Type Latch with High Enable, 2X Drive
LAH21LJ	D-Type Latch with High Enable, 2X Drive
LAL20LJ	D-Type Latch with Low Enable
LH110LJ	3-State Bus Holder

Latches (Software Macros)

CELL NAME	FUNCTIONAL DESCRIPTION
S259LJ	8-Bit Addressable Latch
S373LJ	8-Bit D-Type Latch with 3-State Outputs
S375LJ	4-Bit Bistable Latch

Microprocessor Bit-Slice Elements

CELL NAME	FUNCTIONAL DESCRIPTION
M01MPLJ	4-Bit Microprocessor Slice (2901)
M02CGLJ	Look-Ahead Carry Generator (2902)
M04SSLJ	Status and Shift Controller (2904)
M10MCLJ	Microprogram Controller (2910)

Multiplexers

CELL NAME	FUNCTIONAL DESCRIPTION
MU110LJ	2-Line to 1-Line Multiplexer with 3-State Outputs
MU111LJ	2-Line to 1-Line Multiplexer
MU210LJ	4-Line to 1-Line Multiplexer
MU211LJ	4-Line to 1-Line Multiplexer
MU310LJ	8-Line to 1-Line Multiplexer with 3-State Outputs
MU320LJ	8-Line to 1-Line Multiplexer, 2X Drive

Multiplexers (Software Macros)

CELL NAME	FUNCTIONAL DESCRIPTION
S151LJ	8-Line to 1-Line Multiplexer
S153LJ	Dual 4-Line to 1-Line Multiplexer
S157LJ	Quad 2-Line to 1-Line Multiplexer
S158LJ	Quad 2-Line to 1-Line Inverting Multiplexer
S251LJ	8-Line to 1-Line Multiplexer with 3-State Outputs
S257ALJ	Quad 2-Line to 1-Line Multiplexer with 3-State Outputs
S258ALJ	Quad 2-Line to 1-Line Inverting Multiplexer with 3-State Outputs
S298LJ	Quad 2-Input Multiplexer with Negative-Edge-Triggered Register
S398LJ	Quad 2-Input Multiplexer with Complementary Output Register
S399LJ	Quad 2-Input Multiplexer with Edge-Triggered Register

NAND Gates

CELL NAME	FUNCTIONAL DESCRIPTION
NA210LJ	2-Input NAND Gate
NA220LJ	2-Input NAND Gate, 2X Drive
NA230LJ	2-Input NAND Gate, 3X Drive
NA240LJ	2-Input NAND Gate, 4X Drive
NA260LJ	2-Input NAND Gate, 6X Drive
NA310LJ	3-Input NAND Gate
NA320LJ	3-Input NAND Gate, 2X Drive
NA330LJ	3-Input NAND Gate, 3X Drive
NA340LJ	3-Input NAND Gate, 4X Drive
NA410LJ	4-Input NAND Gate
NA420LJ	4-Input NAND Gate, 2X Drive
NA430LJ	4-Input NAND Gate, 3X Drive
NA510LJ	5-Input NAND Gate
NA520LJ	5-Input NAND Gate, 2X Drive
NA810LJ	8-Input NAND Gate
NA820LJ	8-Input NAND Gate, 2X Drive

NOR Gates

CELL NAME	FUNCTIONAL DESCRIPTION
NO210LJ	2-Input NOR Gate
NO220LJ	2-Input NOR Gate, 2X Drive
NO230LJ	2-Input NOR Gate, 3X Drive
NO240LJ	2-Input NOR Gate, 4X Drive
NO310LJ	3-Input NOR Gate
NO320LJ	3-Input NOR Gate, 2X Drive
NO330LJ	3-Input NOR Gate, 3X Drive
NO410LJ	4-Input NOR Gate
NO420LJ	4-Input NOR Gate, 2X Drive
NO510LJ	5-Input NOR Gate
NO520LJ	5-Input NOR Gate, 2X Drive
NO810LJ	8-Input NOR Gate
NO820LJ	8-Input NOR Gate, 2X Drive

OR Gates

CELL NAME	FUNCTIONAL DESCRIPTION
OR210LJ	2-Input OR Gate
OR220LJ	2-Input OR Gate, 2X Drive
OR240LJ	2-Input OR Gate, 4X Drive
OR260LJ	2-Input OR Gate, 6X Drive
OR310LJ	3-Input OR Gate
OR320LJ	3-Input OR Gate, 2X Drive
OR340LJ	3-Input OR Gate, 4X Drive
OR360LJ	3-Input OR Gate, 6X Drive
OR410LJ	4-Input OR Gate
OR420LJ	4-Input OR Gate, 2X Drive
OR440LJ	4-Input OR Gate, 4X Drive
OR460LJ	4-Input OR Gate, 6X Drive
OR510LJ	5-Input OR Gate
OR810LJ	8-Input OR Gate

Oscillators

CELL NAME	FUNCTIONAL DESCRIPTION
OSI01LJ	75-MHz (MAX) Crystal-Controlled Oscillator
OSI02LJ	55-MHz (MAX) Crystal-Controlled Oscillator
OSI03LJ	35-MHz (MAX) Crystal-Controlled Oscillator
OSI04LJ	20-MHz (MAX) Crystal-Controlled Oscillator

Outputs

CELL NAME	FUNCTIONAL DESCRIPTION
OP#20LJ	2-mA, Push-Pull Output Buffer
OP#40LJ	4-mA, Push-Pull Output Buffer
OP#60LJ	6-mA, Push-Pull Output Buffer
OP#00LJ	10-mA, Push-Pull Output Buffer
OP#A0LJ	16-mA, Push-Pull Output Buffer
OP#B0LJ	16/24-mA, Push-Pull Output Buffer
OP#E0LJ	16/48-mA, Push-Pull Output Buffer
OP#G0LJ	16/64-mA, Push-Pull Output Buffer
OP#21LJ	2-mA, Open-Drain Output Buffer
OP#41LJ	4-mA, Open-Drain Output Buffer
OP#61LJ	6-mA, Open-Drain Output Buffer
OP#01LJ	10-mA, Open-Drain Output Buffer

Output buffers available with and without di/dt control. Output buffers with di/dt control reduce electromagnetic interference (EMI) and transient power requirements. Use of non-di/dt controlled buffers increases the number of power and ground pin requirements and should be limited to outputs with critical timing specifications.

Outputs (Continued)

CELL NAME	FUNCTIONAL DESCRIPTION
OP#A1LJ	16-mA, Open-Drain Output Buffer
OP#B1LJ	24-mA, Open-Drain Output Buffer
OP#E1LJ	48-mA, Open-Drain Output Buffer
OP#G1LJ	64-mA, Open-Drain Output Buffer
OP#23LJ	2-mA, 3-State Output Buffer
OP#43LJ	4-mA, 3-State Output Buffer
OP#63LJ	6-mA, 3-State Output Buffer
OP#03LJ	10-mA, 3-State Output Buffer
OP#A3LJ	16-mA, 3-State Output Buffer
OP#B3LJ	16/24-mA, 3-State Output Buffer
OP#E3LJ	16/48-mA, 3-State Output Buffer
OP#G3LJ	16/64-mA, 3-State Output Buffer

Parity Generator/Checker (Software Macros)

CELL NAME	FUNCTIONAL DESCRIPTION
S280LJ	9-Bit Odd/Even Parity Generator/Checker

Pulldown/Pullup Terminators

CELL NAME	FUNCTIONAL DESCRIPTION
PD095LJ	95-μA, Pulldown Active Terminator
PR005LJ	5-μA, Pullup Active Terminator
PR095LJ	95-μA, Pullup Active Terminator
PR250LJ	250-μA, Pullup Active Terminator
PR400LJ	5-μA, Pullup Active Terminator

Power-Up Clear One-Shot

CELL NAME	FUNCTIONAL DESCRIPTION
PUC00LJ	Power-Up Clear One-Shot

Register Files

CELL NAME	FUNCTIONAL DESCRIPTION
RF400LJ	16-Word by 8-Bit 3-Port Register File with 3-State Outputs
RF401LJ	16-Word by 8-Bit 4-Port Register File with 3-State Outputs
RF402LJ	16-Word by 9-Bit 3-Port Register File with 3-State Outputs
RF600LJ	64-Word by 8-Bit 3-Port Register File with 3-State Outputs
RF601LJ	64-Word by 8-Bit 4-Port Register File with 3-State Outputs
RF602LJ	64-Word by 9-Bit 3-Port Register File with 3-State Outputs

Scan Flip-Flops

CELL NAME	FUNCTIONAL DESCRIPTION
TDC10LJ	D-Type Scan Flip-Flop with Clear
TDN10LJ	D-Type Scan Flip-Flop without Preset/Clear
TDN11LJ	2-Phase Scan Register Latch without Preset/Clear
TP000LJ	2-Phase Test Port Flip-Flop without Preset/Clear

Shift Registers

CELL NAME	FUNCTIONAL DESCRIPTION
R2401LJ	4-Bit Shift Register with Serial Inputs, Asynchronous Clear
R2402LJ	4-Bit Shift Register with Serial Inputs, Complementary Outputs
R2403LJ	4-Bit Shift Register with Serial and Parallel Inputs
R2404LJ	4-Bit Shift Register with Serial/Parallel Inputs, Complementary Outputs

Output buffers available with and without di/dt control. Output buffers with di/dt control reduce electromagnetic interference (EMI) and transient power requirements. Use of non-di/dt controlled buffers increases the number of power and ground pin requirements and should be limited to outputs with critical timing specifications.

Shift Registers (Software Macros)

CELL NAME	FUNCTIONAL DESCRIPTION
S164LJ	8-Bit Parallel-Out Serial Shift Registers
S165LJ	Parallel-Load 8-Bit Shift Registers
S166LJ	Parallel-Load 8-Bit Shift Registers with Clear
S194ALJ	Bidirectional Universal Shift Registers
S195ALJ	4-Bit Parallel-Access Shift Registers
S299LJ	8-Bit Bidirectional Shift/Storage Registers
S299XLJ	8-Bit Bidirectional Shift Registers
S595LJ	8-Bit Shift Register with 3-State Output Registers
S598XLJ	8-Bit Shift Register with Input Registers

Toggle Flip-Flops

CELL NAME	FUNCTIONAL DESCRIPTION
TAB20LJ	Toggle Flip-Flop with Preset, Clear, 2X Drive
TAC20LJ	Toggle Flip-Flop with Clear, 2X Drive
TAP20LJ	Toggle Flip-Flop with Preset, 2X Drive

Tie-Off Gate

CELL NAME	FUNCTIONAL DESCRIPTION
TO010LJ	High-Level and Low-Level Tie-Off Gate

Transceiver Registers (Software Macros)

CELL NAME	FUNCTIONAL DESCRIPTION
S651LJ	8-Bit Bidirectional Register with Inverting Data Path
S652LJ	8-Bit Bidirectional Transceiver Registers

2-μm SystemCell™ SERIES CMOS STANDARD CELLS*

*Technical data is contained in the 2-μm CMOS StandardCell Databook (SRSD001).

AND Gates

CELL NAME	FUNCTIONAL DESCRIPTION
AN210LH	2-Input AND Gate
AN220LH	2-Input AND Gate, 2X Drive
AN240LH	2-Input AND Gate, 4X Drive
AN260LH	2-Input AND Gate, 6X Drive
AN310LH	3-Input AND Gate
AN320LH	3-Input AND Gate, 2X Drive
AN340LH	3-Input AND Gate, 4X Drive
AN360LH	3-Input AND Gate, 6X Drive
AN410LH	4-Input AND Gate
AN420LH	4-Input AND Gate, 2X Drive
AN440LH	4-Input AND Gate, 4X Drive
AN460LH	4-Input AND Gate, 6X Drive
AN510LH	5-Input AND Gate
AN810LH	8-Input AND Gate

AND-OR Gates

CELL NAME	FUNCTIONAL DESCRIPTION
AO220LH	AND-OR Gate, 2X Drive $Y=(A \cdot B)+(C \cdot D)$
AO221LH	AND-NOR Gate, 2X Drive $Y=\overline{(A \cdot B)+(C \cdot D)}$

Arithmetic Operators (Software Macros)

CELL NAME	FUNCTIONAL DESCRIPTION
S181LH	Arithmetic Logic Unit/Function Generator
S283LH	4-Bit Binary Full Adder, Fast Carry

Boolean Functions

CELL NAME	FUNCTIONAL DESCRIPTION
BF001LH	AND-NOR Gate $Y=\overline{A1+(B1 \cdot B2)}$
BF002LH	AND-NOR Gate $Y=\overline{A1+(B1 \cdot B2 \cdot B3)}$
BF003LH	AND-NOR Gate $Y=\overline{(A1 \cdot A2)+(B1 \cdot B2)}$
BF004LH	AND-NOR Gate $Y=\overline{(A1 \cdot A2)+(B1 \cdot B2 \cdot B3)}$
BF005LH	AND-NOR Gate $Y=\overline{(A1 \cdot A2 \cdot A3)+(B1 \cdot B2 \cdot B3)}$
BF006LH	AND-NOR Gate $Y=\overline{A1+A2+(B1 \cdot B2)}$
BF007LH	AND-NOR Gate $Y=\overline{A1+A2+(B1 \cdot B2 \cdot B3)}$
BF008LH	AND-NOR Gate $Y=\overline{A1+(B1 \cdot B2)+(C1 \cdot C2)}$
BF009LH	AND-NOR Gate $Y=\overline{A1+(B1 \cdot B2)+(C1 \cdot C2 \cdot C3)}$
BF010LH	AND-NOR Gate $Y=\overline{A1+(B1 \cdot B2 \cdot B3)+(C1 \cdot C2 \cdot C3)}$
BF011LH	AND-NOR Gate $Y=\overline{(A1 \cdot A2)+(B1 \cdot B2)+(C1 \cdot C2)}$
BF012LH	AND-NOR Gate $Y=\overline{(A1 \cdot A2)+(B1 \cdot B2)+(C1 \cdot C2 \cdot C3)}$
BF013LH	AND-NOR Gate $Y=\overline{(A1 \cdot A2)+(B1 \cdot B2 \cdot B3)+(C1 \cdot C2 \cdot C3)}$
BF014LH	AND-NOR Gate $Y=\overline{(A1 \cdot A2 \cdot A3)+(B1 \cdot B2 \cdot B3)+(C1 \cdot C2 \cdot C3)}$
BF015LH	OR-AND-NOR Gate $Y=\overline{A1+[B1 \cdot (C1+C2)]}$
BF016LH	AND-OR-NAND Gate $Y=\overline{A1+[(B1+B2) \cdot (C1+C2)]}$
BF017LH	OR-AND-NOR Gate $Y=\overline{A1+[B1 \cdot B2 \cdot (C1+C2)]}$
BF020LH	OR-AND-NOR Gate $Y=\overline{A1 \cdot A2+[B1 \cdot (C1+C2)]}$
BF022LH	OR-AND-NOR Gate $Y=\overline{A1 \cdot A2+[B1 \cdot B2 \cdot (C1+C2)]}$
BF025LH	OR-AND-NOR Gate $Y=\overline{A1 \cdot A2 \cdot A3+[B1 \cdot (C1+C2)]}$
BF027LH	OR-AND-NOR Gate $Y=\overline{A1 \cdot A2 \cdot A3+[B1 \cdot B2 \cdot (C1+C2)]}$
BF028LH	OR-AND-NOR Gate $Y=\overline{A1 \cdot A2 \cdot A3+[B1 \cdot (C1+C2) \cdot (D1+D2)]}$
BF030LH	AND-OR-AND-NOR Gate $Y=A1+\{B1 \cdot [C1+(D1 \cdot D2)]\}$
BF034LH	AND-OR-AND-NOR Gate $Y=\overline{(A1 \cdot A2)+\{B1 \cdot [C1+(D1 \cdot D2)]\}}$

Boolean Functions (Continued)

CELL NAME	FUNCTIONAL DESCRIPTION
BF035LH	AND-OR-AND-NOR Gate $Y = \overline{(A1 \cdot A2) + \{B1 \cdot [(C1 \cdot C2) + (D1 \cdot D2)]\}}$
BF051LH	OR-NAND Gate $Y = \overline{A1 \cdot (B1 + B2)}$
BF052LH	OR-NAND Gate $Y = \overline{A1 \cdot (B1 + B2 + B3)}$
BF053LH	OR-NAND Gate $Y = \overline{(A1 + A2) \cdot (B1 + B2)}$
BF054LH	OR-NAND Gate $Y = \overline{(A1 + A2) \cdot (B1 + B2 + B3)}$
BF055LH	OR-NAND Gate $Y = \overline{(A1 + A2 + A3) \cdot (B1 + B2 + B3)}$
BF056LH	OR-NAND Gate $Y = \overline{A1 \cdot A2 \cdot (B1 + B2)}$
BF057LH	OR-NAND Gate $Y = \overline{A1 \cdot A2 \cdot (B1 + B2 + B3)}$
BF058LH	OR-NAND Gate $Y = \overline{A1 \cdot (B1 + B2) \cdot (C1 + C2)}$
BF059LH	OR-NAND Gate $Y = \overline{A1 \cdot (B1 + B2) \cdot (C1 + C2 + C3)}$
BF060LH	OR-NAND Gate $Y = \overline{A1 \cdot (B1 + B2 + B3) \cdot (C1 + C2 + C3)}$
BF062LH	OR-NAND Gate $Y = \overline{(A1 + A2) \cdot (B1 + B2) \cdot (C1 + C2 + C3)}$
BF063LH	OR-NAND Gate $Y = \overline{(A1 + A2) \cdot (B1 + B2 + B3) \cdot (C1 + C2 + C3)}$
BF064LH	OR-NAND Gate $Y = \overline{(A1 + A2 + A3) \cdot (B1 + B2 + B3) \cdot (C1 + C2 + C3)}$
BF065LH	AND-OR-NAND Gate $Y = \overline{A1 \cdot [B1 + (C1 \cdot C2)]}$
BF066LH	AND-OR-NAND Gate $Y = \overline{A1 \cdot [(B1 \cdot B2) + (C1 \cdot C2)]}$
BF067LH	AND-OR-NAND Gate $Y = \overline{A1 \cdot [B1 + B2 + (C1 \cdot C2)]}$
BF068LH	AND-OR-NAND Gate $Y = \overline{A1 \cdot [B1 + (C1 \cdot C2) + (D1 \cdot D2)]}$
BF069LH	AND-OR-NAND Gate $Y = \overline{A1 \cdot [(B1 \cdot B2) + (C1 \cdot C2) + (D1 \cdot D2)]}$
BF070LH	AND-OR-NAND Gate $Y = \overline{(A1 + A2) \cdot [B1 + (C1 \cdot C2)]}$
BF071LH	AND-OR-NAND Gate $Y = \overline{(A1 + A2) \cdot [(B1 \cdot B2) + (C1 \cdot C2)]}$
BF072LH	AND-OR-NAND Gate $Y = \overline{(A1 + A2) \cdot [B1 + B2 + (C1 \cdot C2)]}$
BF075LH	AND-OR-NAND Gate $Y = \overline{(A1 + A2 + A3) \cdot [B1 + (C1 \cdot C2)]}$
BF080LH	OR-AND-OR-NAND Gate $Y = \overline{A1 \cdot \{B1 + [C1 \cdot (D1 + D2)]\}}$
BF081LH	OR-AND-OR-NAND Gate $Y = \overline{A1 \cdot \{B1 + [(C1 + C2) \cdot (D1 + D2)]\}}$
BF082LH	OR-AND-OR-NAND Gate $Y = \overline{A1 \cdot \{(B1 \cdot B2) + [C1 \cdot (D1 + D2)]\}}$
BF088LH	OR-AND-OR-NAND Gate $Y = \overline{(A1 + A2 + A3) \cdot \{B1 + [C1 \cdot (D1 + D2)]\}}$

Buffers, 3-State (Software Macros)

CELL NAME	FUNCTIONAL DESCRIPTION
S244LH	Octal Internal Bus Buffer with 3-State Outputs
S245LH	Octal Internal 3-State Bus Transceiver

Comparators (Software Macros)

CELL NAME	FUNCTIONAL DESCRIPTION
S085LH	4-Bit Magnitude Comparator
S686LH	8-Bit Magnitude Comparator
S688LH	8-Bit Identity Comparator

Counter

CELL NAME	FUNCTIONAL DESCRIPTION
R2408LH	4-Bit Ripple Counter

Counters (Software Macros)

CELL NAME	FUNCTIONAL DESCRIPTION
S161ALH	Synchronous 4-Bit Binary Counter with Clear
S163ALH	Synchronous 4-Bit Binary Counter
S177LH	1-Bit and 3-Bit Binary Ripple Counters
S191LH	Synchronous 4-Bit Up/Down Binary Counter with Down/Up Mode Control
S193LH	Synchronous 4-Bit Up/Down Counter (Dual Clock with Clear)
S393LH	Dual 4-Bit Ripple Counters
S590LH	8-Bit Binary Counter with 3-State Output Register
S593XLH	8-Bit Binary Counter with Input Register
S669LH	Synchronous 4-Bit Up/Down Binary Counter with Look-Ahead

Decoders/Demultiplexers

CELL NAME	FUNCTIONAL DESCRIPTION
DE210LH	2-Line to 4-Line Decoder
DE212LH	2-Line to 4-Line Decoder with High Enable

Decoders/Demultiplexers (Software Macros)

CELL NAME	FUNCTIONAL DESCRIPTION
S137LH	3-Line to 8-Line Decoder with Address Latches
S138LH	3-Line to 8-Line Decoder/Demultiplexer
S139LH	Dual 2-Line to 4-Line Decoder
S155LH	Dual 2-Line to 4-Line Decoder with Data, Enable

D-Type Flip-Flops

CELL NAME	FUNCTIONAL DESCRIPTION
DFB20LH	D-Type Flip-Flop with Preset, Clear, 2X Drive
DFC20LH	D-Type Flip-Flop with Clear, 2X Drive
DFN20LH	D-Type Flip-Flop, 2X Drive
DFP20LH	D-Type Flip-Flop with Preset, 2X Drive
DFY20LH	D-Type Flip-Flop with Grounded-D, Preset, 2X Drive
DFZ20LH	D-Type Flip-Flop with Grounded-D Input, Preset, Clear, 2X Drive
DTB10LH	D-Type Flip-Flop with Preset, Clear, 1X Drive
DTC10LH	D-Type Flip-Flop with Clear, 1X Drive
DTN10LH	D-Type Flip-Flop, 1X Drive
DTP10LH	D-Type Flip-Flop with Preset, 1X Drive
R2405LH	4-Bit Flip-Flops with Asynchronous Clear
R2406LH	4-Bit Flip-Flops with Complementary Outputs
R2407LH	4-Bit Flip-Flops with 3-State Outputs

D-Type Flip-Flops (Software Macros)

CELL NAME	FUNCTIONAL DESCRIPTION
S173LH	4-Bit D-Type Register with 3-State Outputs
S174LH	Hex D-Type Flip-Flop
S175LH	Quad D-Type Flip-Flop with Complementary Outputs
S273LH	Octal D-Type Flip-Flop
S374LH	8-Bit D-Type Flip-Flop with 3-State Outputs

Exclusive-OR/NOR Gates

CELL NAME	FUNCTIONAL DESCRIPTION
EN210LH	2-Input Exclusive-NOR Gate
EX210LH	2-Input Exclusive-OR Gate
EX211LH	2-Input Exclusive-OR Gate
EX220LH	2-Input Exclusive-OR Gate, 2X Drive
EX221LH	2-Input Exclusive-OR Gate, 2X Drive
EX240LH	2-Input Exclusive-OR Gate, 4X Drive
EX241LH	2-Input Exclusive-OR Gate, 4X Drive

Gated S-R/S-R Latches

CELL NAME	FUNCTIONAL DESCRIPTION
GMS10LH	5-Input Gated S-R Latch with Separate Set
GM010LH	4-Input Gated S-R Latch
GM110LH	5-Input Gated S-R Latch with Separate Reset
GM210LH	6-Input Gated S-R Latch with Separate Set, Reset
GM310LH	6-Input Gated S-R Latch
GM410LH	7-Input Gated S-R Latch with Separate Reset
GM510LH	8-Input Gated S-R Latch with Separate Set, Reset
GSS10LH	5-Input Gated S-R Latch with Separate Set
GS010LH	4-Input Gated S-R Latch
GS110LH	5-Input Gated S-R Latch with Separate Reset
GS210LH	6-Input Gated S-R Latch with Separate Set, Reset
GS310LH	6-Input Gated S-R Latch
GS410LH	7-Input Gated S-R Latch with Separate Reset
GS510LH	8-Input Gated S-R Latch with Separate Set, Reset

Inputs/Outputs, Bidirectionals

CELL NAME	FUNCTIONAL DESCRIPTION
IOFB4LH	24-mA, 3-State I/O Buffer with TTL Input
IOFB8LH	24-mA, 3-State I/O Buffer with TTL Input
IOFD8LH	44-mA, 3-State I/O Buffer with Inverting TTL Input
IOFE8LH	48-mA, Open-Drain I/O Buffer with Inverting TTL Input, Hysteresis
IOF00LH	10-mA, 3-State I/O Buffer with Inverting CMOS Input
IOF01LH	10-mA, 3-State I/O Buffer with CMOS Input
IOF03LH	10-mA, 3-State I/O Buffer with Inverting TTL Input
IOF04LH	10-mA, 3-State I/O Buffer with TTL Input
IOF21LH	2-mA, 3-State I/O Buffer with CMOS Input
IOF24LH	2-mA, 3-State I/O Buffer with TTL Input
IOF40LH	4-mA, 3-State I/O Buffer with Inverting CMOS Input
IOF41LH	4-mA, 3-State I/O Buffer with CMOS Input
IOF43LH	4-mA, 3-State I/O Buffer with Inverting TTL Input
IOF44LH	4-mA, 3-State I/O Buffer with TTL Input
IOF47LH	4-mA, 3-State I/O Buffer with Inverting CMOS Input with Hysteresis
IOF48LH	4-mA, 3-State I/O Buffer with Inverting TTL Input with Hysteresis
IOF64LH	6-mA, 3-State I/O Buffer with TTL Input
IOF66LH	6-mA, 3-State I/O Buffer with Inverting CMOS Input with Hysteresis

Inputs

CELL NAME	FUNCTIONAL DESCRIPTION
IPF00LH	CMOS-Compatible Inverting Input Buffer
IPF01LH	CMOS-Compatible Input Buffer
IPF02LH	CMOS-Compatible Inverting Input Buffer with Pullup Tap
IPF03LH	TTL-Compatible Inverting Input Buffer
IPF04LH	TTL-Compatible Input Buffer
IPF05LH	TTL-Compatible Inverting Input Buffer with Pullup Tap
IPF06LH	CMOS Inverting Input Buffer with Hysteresis
IPF08LH	TTL-Compatible Inverting Input Buffer with Hysteresis, Pullup Tap
IPF10LH	TTL-Compatible Input Buffer with Hysteresis, Pullup Tap
IPF12LH	TTL-Compatible Input Buffer
IPF13LH	TTL-Compatible Inverting Input Buffer with Pullup Tap

Inverters/Buffers

CELL NAME	FUNCTIONAL DESCRIPTION
BU110LH	Delay Buffer
BU111LH	Inverting Delay Buffer
BU112LH	Delay Buffer
BU120LH	Delay Buffer, 2X Drive
BU130LH	Delay Buffer, 3X Drive
BU221LH	3-State Buffer with Low Enable, 2X Drive
BU222LH	3-State Buffer with High Enable, 2X Drive
BU261LH	3-State Buffer with Low Enable, 6X Drive
BU262LH	3-State Buffer with High Enable, 6X Drive
IV101LH	Inverter, 10X Drive
IV110LH	Inverter
IV120LH	Inverter, 2X Drive
IV130LH	Inverter, 3X Drive
IV140LH	Inverter, 4X Drive
IV160LH	Inverter, 6X Drive
IV180LH	Inverter, 8X Drive
IV211LH	Inverting 3-State Buffer with Low Enable
IV212LH	Inverting 3-State Buffer with High Enable
IV221LH	Inverting 3-State Buffer with Low Enable, 2X Drive
IV222LH	Inverting 3-State Buffer with High Enable, 2X Drive
IV241LH	Inverting 3-State Buffer with Low Enable, 4X Drive
IV242LH	Inverting 3-State Buffer with High Enable, 4X Drive

J-K Flip-Flops

CELL NAME	FUNCTIONAL DESCRIPTION
JKB20LH	J-K Positive-Edge-Triggered Flip-Flop with Preset, Clear, 2X Drive
JKB21LH	J-K Negative-Edge-Triggered Flip-Flop with Preset, Clear, 2X Drive

Latches

CELL NAME	FUNCTIONAL DESCRIPTION
LAB10LH	S-R Latch
LAB20LH	S-R Latch, 2X Drive
LAH10LH	D-Type Latch with High Enable
LAH11LH	D-Type Latch with High Enable
LAH20LH	D-Type Latch with High Enable, 2X Drive
LAH21LH	D-Type Latch with High Enable, 2X Drive
LAL20LH	D-Type Latch with Low Enable
LH110LH	3-State Bus Holder

Latches (Software Macros)

CELL NAME	FUNCTIONAL DESCRIPTION
S259LH	8-Bit Addressable Latch
S373LH	8-Bit D-Type Latch with 3-State Outputs
S375LH	4-Bit Bistable Latch

Multiplexers

CELL NAME	FUNCTIONAL DESCRIPTION
MU110LH	2-Line to 1-Line Multiplexer with 3-State Output
MU111LH	2-Line to 1-Line Multiplexer
MU210LH	4-Line to 1-Line Multiplexer
MU211LH	4-Line to 1-Line Multiplexer
MU310LH	8-Line to 1-Line Multiplexer with 3-State Output
MU320LH	8-Line to 1-Line Multiplexer, 2X Drive

Multiplexers (Software Macros)

CELL NAME	FUNCTIONAL DESCRIPTION
S151LH	8-Line to 1-Line Multiplexer
S153LH	Dual 4-Line to 1-Line Multiplexer
S157LH	Quadruple 2-Line to 1-Line Multiplexer
S158LH	Quad 2-Line to 1-Line Inverting Multiplexer
S251LH	8-Line to 1-Line Multiplexer with 3-State Outputs
S257ALH	Quad 2-Line to 1-Line Multiplexer with 3-State Outputs
S258ALH	Quad 2-Line to 1-Line Inverting Multiplexer with 3-State Outputs
S298LH	Quad 2-Input Multiplexer with Negative-Edge-Triggered Register
S398LH	Quad 2-Input Multiplexer with Complementary Output Register
S399LH	Quad 2-Input Multiplexer with Edge-Triggered Register

NAND Gates

CELL NAME	FUNCTIONAL DESCRIPTION
NA210LH	2-Input NAND Gate
NA220LH	2-Input NAND Gate, 2X Drive
NA230LH	2-Input NAND Gate, 3X Drive
NA240LH	2-Input NAND Gate, 4X Drive
NA260LH	2-Input NAND Gate, 6X Drive
NA310LH	3-Input NAND Gate
NA320LH	3-Input NAND Gate, 2X Drive
NA330LH	3-Input NAND Gate, 3X Drive
NA340LH	3-Input NAND Gate, 4X Drive
NA410LH	4-Input NAND Gate
NA420LH	4-Input NAND Gate, 2X Drive
NA430LH	4-Input NAND Gate, 3X Drive
NA510LH	5-Input NAND Gate
NA520LH	5-Input NAND Gate, 2X Drive
NA810LH	8-Input NAND Gate
NA820LH	8-Input NAND Gate, 2X Drive

NOR Gates

CELL NAME	FUNCTIONAL DESCRIPTION
NO210LH	2-Input NOR Gate
NO220LH	2-Input NOR Gate, 2X Drive
NO230LH	2-Input NOR Gate, 3X Drive
NO240LH	2-Input NOR Gate, 4X Drive
NO310LH	3-Input NOR Gate
NO320LH	3-Input NOR Gate, 2X Drive
NO330LH	3-Input NOR Gate, 3X Drive
NO410LH	4-Input NOR Gate
NO420LH	4-Input NOR Gate, 2X Drive
NO510LH	5-Input NOR Gate
NO520LH	5-Input NOR Gate, 2X Drive
NO810LH	8-Input NOR Gate
NO820LH	8-Input NOR Gate, 2X Drive

One-Shot

CELL NAME	FUNCTIONAL DESCRIPTION
MVF00LH	Retriggerable Monostable Multivibrator

OR Gates

CELL NAME	FUNCTIONAL DESCRIPTION
OR210LH	2-Input OR Gate
OR220LH	2-Input OR Gate, 2X Drive
OR240LH	2-Input OR Gate, 4X Drive
OR260LH	2-Input OR Gate, 6X Drive
OR310LH	3-Input OR Gate
OR320LH	3-Input OR Gate, 2X Drive
OR340LH	3-Input OR Gate, 4X Drive
OR360LH	3-Input OR Gate, 6X Drive
OR410LH	4-Input OR Gate
OR420LH	4-Input OR Gate, 2X Drive
OR440LH	4-Input OR Gate, 4X Drive
OR460LH	4-Input OR Gate, 6X Drive
OR510LH	5-Input OR Gate
OR810LH	8-Input OR Gate

Outputs

CELL NAME	FUNCTIONAL DESCRIPTION
OPFB0LH	24-mA, Totem-Pole Output Buffer
OPFB3LH	24-mA, 3-State Output Buffer with Low Enable
OPFD3LH	44-mA, 3-State Output Buffer with Low Enable
OPFE1LH	48-mA, Open-Drain Output Buffer
OPF00LH	10-mA, Totem-Pole Output Buffer
OPF01LH	10-mA, Open-Drain Output Buffer
OPF03LH	10-mA, 3-State Output Buffer with Low Enable
OPF20LH	2-mA, Totem-Pole Output Buffer
OPF23LH	2-mA, 3-State Output Buffer with Low Enable
OPF40LH	4-mA, Totem-Pole Output Buffer
OPF41LH	4-mA, Open-Drain Output Buffer
OPF43LH	4-mA, 3-State Output Buffer with Low Enable
OPF60LH	6-mA, Totem-Pole Output Buffer
OPF61LH	6-mA, Open-Drain Output Buffer
OPF63LH	6-mA, 3-State Output Buffer with Low Enable

Oscillators

CELL NAME	FUNCTIONAL DESCRIPTION
OSE00LH	5-MHz (MAX) Crystal-Controlled Oscillator
OSE01LH	100-kHz (MAX) RC Oscillator
OSE06LH	800-kHz (MAX) Crystal-Controlled Oscillator
OSE07LH	200-kHz (MAX) RC Oscillator
OSF02LH	20-MHz (MAX) Crystal-Controlled Oscillator

Parity Generator/Checker (Software Macro)

CELL NAME	FUNCTIONAL DESCRIPTION
S280LH	9-Bit Odd/Even Parity Generator/Checker

Pulldown/Pullup Terminators

CELL NAME	FUNCTIONAL DESCRIPTION
PD095LH	95-μA, Pulldown Active Terminator
PR005LH	5-μA, Pullup Active Terminator
PR095LH	95-μA, Pullup Active Terminator
PR250LH	250-μA, Pullup Active Terminator
PR400LH	5-μA, Pullup Active Terminator

Power-Up Clear One-Shot

CELL NAME	FUNCTIONAL DESCRIPTION
PUC00LH	Power-Up Clear One-Shot

RAMs

CELL NAME	FUNCTIONAL DESCRIPTION
RA408LH	16-Word by 8-Bit Static Read/Write RAM with 3-State Outputs
RA608LH	64-Word by 8-Bit Static Read/Write RAM with 3-State Outputs
RA708LH	128-Word by 8-Bit Static Read/Write RAM with 3-State Outputs
RA802LH	256-Word by 2-Bit Static Read/Write RAM with 3-State Outputs

Register Files

CELL NAME	FUNCTIONAL DESCRIPTION
RF408LH	16-Word by 8-Bit 3-Port Register File

Shift Registers

CELL NAME	FUNCTIONAL DESCRIPTION
R2401LH	4-Bit Shift Register with Serial In, Asynchronous Clear
R2402LH	4-Bit Shift Register with Serial In, Complementary Outputs
R2403LH	4-Bit Shift Register with Serial and Parallel Inputs
R2404LH	4-Bit Shift Register with Serial/Parallel Inputs, Complementary Outputs

Shift Registers (Software Macros)

CELL NAME	FUNCTIONAL DESCRIPTION
S164LH	8-Bit Parallel-Out Serial Shift Registers
S165LH	Parallel-Load 8-Bit Shift Registers
S166LH	Parallel-Load 8-Bit Shift Registers with Clear
S194ALH	Bidirectional Universal Shift Registers
S195ALH	4-Bit Parallel-Access Shift Registers
S299LH	8-Bit Bidirectional Shift/Storage Registers
S299XLH	8-Bit Bidirectional Shift Registers
S595LH	8-Bit Shift Register with 3-State Output Registers
S598XLH	8-Bit Shift Register with Input Registers

Toggle Flip-Flops

CELL NAME	FUNCTIONAL DESCRIPTION
TAB20LH	Toggle Flip-Flop with Preset, Clear, 2X Drive
TAC20LH	Toggle Flip-Flop with Clear, 2X Drive
TAP20LH	Toggle Flip-Flop with Preset, 2X Drive

Tie-Off Gate

CELL NAME	FUNCTIONAL DESCRIPTION
TO010LH	High-Level and Low-Level Tie-Off Gate

Transceiver Registers (Software Macros)

CELL NAME	FUNCTIONAL DESCRIPTION
S651LH	8-Bit Bidirectional Register with Inverting Data Path
S652LH	8-Bit Bidirectional Transceiver Register

Catalog Products Functional Index

USING THE FUNCTIONAL INDEX

The Catalog Products Functional Index — a key-word index that matches functions to the appropriate section and page within the Guide — is intended to aid those readers unfamiliar with specific TI products. As an example,

Contents	Page
Display Drivers,	
AC Plasma	6-8
Electroluminescent	6-6
LED	6-7
Plasma and Gas Discharge	6-8
Vacuum Fluorescent	6-7
Display, Intelligent, Single-Digit LED	8-7
Drivers,	
Hex	3-10
Open-Collector Outputs	3-10
3-State Outputs	3-12
MOS	3-15
Line (Digital Logic)	3-15
Line (Linear Circuits)	6-2
Multifunction Drivers	3-16
Display	6-6
Peripheral	6-9
General Purpose	6-9
Motor	6-10

CATALOG PRODUCTS FUNCTIONAL INDEX

Functions	Page
A/D Converter Peripherals	7-15
A/D Converters,	
Single- and Dual-Slope	7-13
Successive Approximation	7-14
Accumulators	3-34
Actuators,	
General Purpose	6-9
Power	6-10
Adders, Parallel Binary	3-34
Address Comparators	3-33
Amplifiers,	
Differential Video	7-10
Logarithmic	7-2
MOS Memory Sense	6-11
Operational	7-2
Analog	
Interface for Digital Signal Processors	7-15
Multiplexers	7-15
Switches	7-15
Application Processors	
TMS320 Digital Signal Processor (DSP) Family	4-5
TMS340 Graphics Family	4-8
TMS380 Local Area Network (LAN) Chipset	4-20
TMS700 Family - 8-Bit Microcomputer Family	4-27
Arithmetic Logic Units	3-34
Buffers,	
Hex Inverters	3-9
Hex Noninverters	3-9
Bus Transceivers	3-15
Bus Transceivers,	
Open Collector Outputs	3-11
3-State Outputs	3-13
Binary Adders, Parallel	3-34
Cache Address Comparator	4-61
CCD	
Area Image Sensors	8-2
Linear Image Sensors	8-2
Checkers, Parity	3-33
Codecs, PCM Interface	9-3
Combos, PCM Interface	9-3
Comparator, Cache Address	4-61

Functions **Page**

Comparators
Address ... 3-33
Fuse Programmable ... 3-33
Other Identity ... 3-32
Voltage ... 7-11
4-Bit ... 3-32
8-Bit Identity ... 3-32
Controllers,
Dynamic RAM ... 4-63
Memory/Microprocessor ... 3-31
Pulse Width Modulated (PWM) ... 7-19
Read-Write ... 7-10
Converter, Switched Capacitor Voltage ... 7-18
Converters,
D/A ... 7-14
Frequency to Voltage ... 7-21
Correction and Error Detection Circuits ... 3-33
Current Mirrors ... 7-21
Counters,
Asynchronous, Negative-Edge Triggered ... 3-26
Frequency Dividers ... 3-27
Rate Multipliers ... 3-27
Synchronous, Positive-Edge Triggered ... 3-25
8-Bit Binary with Registers ... 3-27
Couplers, Opto,
Schmitt Trigger ... 8-6
Triac Drivers ... 8-6
D/A Converters ... 7-14
Data Selectors ... 3-28
Data Sheets/Other Literature ... 12-8
Decoders ... 3-30
Demultiplexers ... 3-30
Descriptions
Package ... 11-2
Semiconductor Books ... 12-10
Design Kits ... 12-2
Differential Video Amplifiers ... 7-10
Digital Loop ... 3-31
Digital Signal Processor Analog Interface ... 7-15
Digital Signal Processors (DSP) Family — (see TMS320)
Display Decoders/Drivers,
Open-Collector ... 3-30
Open-Collector with Counters/Latches ... 3-31

Functions	Page
Display Drivers,	
AC Plasma	6-8
Electroluminescent	6-6
LED	6-7
Plasma and Gas Discharge	6-8
Vacuum Fluorescent	6-7
Display, Intelligent, Single-Digit LED	8-7
Drivers,	
Hex	3-10
Open-Collector Outputs	3-10
3-State Outputs	3-12
MOS	3-15
Line (Digital Logic)	3-15
Line (Linear Circuits)	6-2
Multifunction Drivers	3-16
Display	6-6
Peripheral	6-9
General Purpose	6-9
Motor	6-10
Dynamic RAM Controllers	4-63
Electroluminescent Display Drivers	6-6
Encoders	3-28
Error Detection and Correction Circuits	3-33
Field Programmable Logic Arrays (ALS)	3-37
Filter ICs, Switched-Capacitors	7-15
Filters, PCM Interface	9-3
First-In First-Out Memories (FIFOs)	10-9
Flip-Flops,	
Dual and Single	3-17
Quad and Hex	3-18
Octal, 9-Bit, and 10-Bit D-Type	3-18
Frequency Dividers	3-27
Frequency-to-Voltage Converter	7-21
FSK Modems	9-4
Fuse Programmable Comparators	3-33
Gates,	
Positive-AND	3-5
Positive-AND, Open-Collector Outputs	3-5
Positive-NAND	3-4
Positive-NAND, Open-Collector Outputs	3-5
Positive-OR	3-6
Positive-OR/NOR	3-7
Positive-NOR	3-6
AND-NOR	3-7
AND-NOR, Open-Collector Outputs	3-7
Exclusive OR/NOR	3-7

Expandable ... 3-8
Multifunction, and Elements ... 3-8
Generators,
Look-Ahead Carry ... 3-34
Parity ... 3-33
Graphics Family — (see TMS340)
Hall-Effect Products ... 7-21
High Performance
CMOS PAL Circuits ... 3-37
IMPACT Programmable Array Logic ... 3-37
PAL Circuits ... 3-36
VLSI Processors ... 4-31
IBM 360/370 Circuits ... 6-2
IC Socket ... 11-13
IEEE 488 GBIP Circuits ... 6-5
IEEE 802.3 Circuits ... 6-5
Image Sensors and Support Functions ... 8-2
Infrared Emitters and Phototransistors ... 8-7
Intelligent Single-Digit LED Displays ... 8-7
Latches,
Quad, 2-State Outputs ... 3-20
D-Type Octal, 9-Bit and 10-Bit Read-Back ... 3-20
Octal, 9-Bit and 10-Bit ... 3-21
LED Display Drivers ... 6-7
Line
Drivers ... 6-2
Receivers ... 6-3
Transceivers ... 6-5
Local Area Network (LAN) Adapter Chipset — (see TMS380)
Logarithm Amplifier ... 6-10
Look Ahead Carry Generator ... 3-34
Magnetic-Media Read and Write Circuits ... 7-10
Memory,
Bipolar ... 10-9
MOS ... 10-2
Memory/Microprocessor Controllers ... 3-31
Microcomputer Family, 8-Bit — (see TMS7000)
Modem, Bell 202/V.23 ... 9-4
MOS
EPROMs ... 10-2
PROMs ... 10-3
DRAMs ... 10-4
Dynamic RAM Modules ... 10-5
EPROM Cross Reference Guide ... 10-6
MOS-Memory Sense Amplifiers ... 6-11
Motor Drivers ... 6-10

Functions	Page
Multiplexers	3-28
Multiplexers, Analog	7-15
Open-Collector Display Decoders/Drivers	3-30
Open-Collector Display Decoders/Drivers with Counters/Latches	3-30
Operational Amplifiers,	
Internally Compensated, Single	7-3
Internally Compensated, Dual	7-5
Internally Compensated, Quad	7-8
Noncompensated, Single	7-2
Optocouplers	8-4
Optoisolators	8-4
Order Forms	
Data Sheets/Other Literature	12-10
Semiconductor Books	12-15
Oscillators, Voltage-Controlled	3-31
Over-Voltage Protection Circuits	7-16
Package Descriptions	11-2
Parity Generators/Checkers	3-33
Peripheral Drivers	6-9
Phototransistors, Infrared	8-7
Plasma and Gas Discharge Display Drivers	6-8
Power Supply Supervisors,	
Over Voltage	7-16
Under Voltage	7-16
Processors, Application — (see Application Processors)	
Processors, High Performance VLSI	4-31
8-Bit-Slice Processor Family	4-31
32-Bit Family	4-42
Programmable Logic Arrays	3-35
Standard High-Speed PAL Circuits (ALS)	3-35
High Performance PAL Circuits (ALS)	3-36
High Performance CMOS PAL Circuits	3-37
High Performance IMPACT Programmable Array Logic	3-37
Field Programmable Logic Arrays (ALS)	3-37
Programmable Tone/Noise Generator	7-22
Protection Circuits	7-16
PWM Controllers	7-19
Rate Multipliers	3-27
Read-and-Write Controller, Magnetic Media	7-10
Receivers, Line	6-3
Register Files	3-23
Registers,	
Shift	3-22
Shift, with Latches	3-23
Sign-Protected	3-23
Other	3-24

Functions	Page

Regulators/References, Shunt Voltage 7-16
Regulators, Voltage,
Adjustable Series Pass 7-16
Negative 7-18
Positive 7-17
Shunt 7-16
Switched 7-18
Relay Drivers 6-10
ROM, Speech,
128K 9-6
256K 9-6
RS-232-C Circuits 6-2
RS-422-A Circuits 6-2
RS-423-A Circuits 6-2
RS-485 Circuits 6-2
Semiconductor Literature 12-7
Seminars, Technical 12-4
Shift Registers 3-22
Shift Registers with Latches 3-22
Shifter 3-30
Shunt Voltage Regulators/References 7-16
Sockets, IC 11-13
Sonar Ranging Circuits 7-22
Sonar Ranging Modules 7-22
Solenoid Drivers 6-9
Speech ROMs 9-6
Standard High-Speed PAL Circuits (ALS) 3-35
Subscriber Line Control Circuits (SLCC) 9-5
Subscriber Products 9-5
Surface Mount Technology 11-25
Switch-Mode Power-Supply Circuits 7-16
Switched-Capacitor Filter ICs 7-15
Switching and Transmission Products 9-2
Switching Voltage Regulators 7-16
Synthesizer, Voice 9-6
Technical Workshops 12-4
Telecommunications Circuits 9-1
Timers 7-20
TMS320 Digital Signal Processor (DSP) Family, ... 4-5
First Generation Processors 4-5
Second Generation Processors 4-5
Third Generation Processors 4-5
Development Support 4-6

Functions **Page**

TMS340 Graphics Family, ... 4-8
Graphics System Processor 4-9
Video System Controller 4-11
Color Palette 4-13
Family Hardware and Software Support 4-14
Development Software 4-18
TMS380 LAN Adapter Chipset, ... 4-20
System Interface 4-21
Communications Processor 4-21
Protocol Handler 4-21
Ring Interfaces 4-21
ASIC-LAN Tool Kit 4-23
IEEE 820.2 Logical Link Control 4-23
Customer Support 4-24
TMS7000 Family — 8-Bit Microcomputers, ... 4-27
TMS7000 Family 4-28
Development Systems 4-28
Prototyping Devices 4-29
Piggyback Devices 4-30
Transceivers,
Line 6-5
Bus 3-15
Bus, Open Collector 3-11
Bus, 3-State Outputs 3-13
Under-Voltage Protection Circuits 7-16
Vacuum Fluorescent Display Driver 6-7
VLSI, High Performance
8-Bit-Slice Processor Family 4-31
32-Bit Family 4-42
Voice Synthesizers 9-6
Voltage Comparators 7-11
Voltage-Controlled Oscillators 3-31
Voltage Regulators,
Adjustable Series Pass 7-16
Positive 7-17
Negative 7-18
Voltage Regulators/References, Shunt 7-16
Workshops, Technical 12-4

4-Bit Comparators 3-32
8-Bit Identity Comparators 3-32

APPLICATION SPECIFIC INTEGRATED CIRCUITS (ASIC)

The use of Application Specific Integrated Circuits (ASIC) provides a means of achieving increased levels of system performance, integration, reliability and design security.

TI's ASIC product offering ranges from 10 ns programmable array logic (PAL)® devices (Section 3) based on TI's 1.5-μm bipolar IMPACT-X™ process to a high performance 1-μm gate array and standard cell family fabricated in TI's double-level-metal, EPIC™ CMOS process technology.

The TGC100 Series gate array family comprises three arrays in densities up to 8k gates with a typical two-week prototype turnaround time for logic consolidation applications; the TSC500 Series standard cell family offers the ultimate in performance and functionality with an expanding library of LSI/VLSI building blocks and a wide variety of packaging options for system consolidation applications. TI's 2-μm SystemCell™ Series provides a cost-effective solution for applications where the speed and density offered by the TSC500 Series are not primary considerations.

Texas Instruments offers a full range of design services and technical support to assist in the completion of an ASIC design. The reader is urged to review the information provided in the 1988 Master Selection Guide to become more familiar with TI's ASIC capabilities, and to contact the nearest TI field sales office or TI ASIC distributor for additional technical information. Names and addresses are listed at the back of the Guide.

Contents **Page**

Gate Arrays 2-2
Standard Cells 2-3
Technical Documentation 2-5
Design Services 2-5
Design Tools 2-6
Design Workshops 2-6

GATE ARRAY PRODUCT FAMILY

1-μm TGC100 SERIES CMOS GATE ARRAYS

The 1-μm TGC100 Series consists of three arrays ranging in density from 3200 to 8896 gates with I/O's from 84 to 142. Fabricated in TI's 1-μm EPIC™ double-level-metal CMOS process, this family offers typical propagation delays of 500 ps (two-input NAND gate, fan-out = 2) and a maximum toggle rate of 208 MHz.

Specified to operate over the commercial temperature range (0° C to 70° C), the initial release of the TGC100 Series library contains 174 macros including SSI, MSI, I/O, Boolean and 'soft macro' functions. Macro libraries are currently supported on Daisy and Mentor engineering workstations.

A predefined selection of industry standard packaging options ranging from 28-pin dual-in-line packages (DIP) to 84-pin plastic leaded chip carriers (PLCC) is available for TGC100 Series designs. Standard TGC100 Series designs typically provide a two-week prototype cycle time (from customer approval of post-layout simulation to shipment of five ceramic-packaged prototypes) for critical time-to-market logic consolidation applications.

Contact the nearest TI Field Sales Office or ASIC Distributor for a copy of the TGC100 Series Family Data Sheet (SRGS006) and the TGC100 Series Product Bulletin (SRYT048).

TGC100 SERIES GATE ARRAY MACRO LIBRARY SUMMARY

Function	Quantity	Function	Quantity
Basic Gates	55	I/O Buffers	36
Arithmetic Operators	4	Latches	7
Comparators	3	Multiplexers	5
Counters	4	Output Buffers	24
Decoders/Demultiplexers	2	Registers	2
Flip-Flops	20	Shift Registers	3
Input buffers	8	Tie-Off	1

TGC100 SERIES PRODUCT SUMMARY AND PACKAGING

Gate Array	Total Gate Count	Usable Gates (90%)	Max. I/Os	28 PLCC	28 DIP	40 DIP	44 PLCC	68 PLCC	84 PLCC
TGC103	3200	2880	84	▪	▪	▪	▪	▪	▪
TGC105	5376	4838	118		▪	▪	▪	▪	▪
TGC108	8896	8006	142		▪	▪	▪	▪	▪

Military Applications

TI also offers gate array designs processed in compliance with MIL-STD-883, Method 5004/5005 or Method 5010. Production facilities are fully DESC and JAN certified. Refer to the Military Products Designer's Reference Guide (SGYZ001B) for more information regarding TI Military ASIC.

STANDARD CELL PRODUCT FAMILY

1-μm TSC500 SERIES CMOS STANDARD CELLS

The TSC500 Series, based on TI's proprietary 1-μm EPIC™ double-level-metal CMOS technology, provides for significant increases in system integration and performance. Typical propagation delay for the smallest version (lowest power, lowest speed) of a two-input NAND gate is 490 ps (fan − out = 2) with a maximum toggle rate of 208 MHz.

The initial release of TI's third-generation standard cell family contains more than 330 cell types including SSI, MSI, I/O, and Boolean functions. TI's library of MegaModule™ and CompilerCell™ functions, currently in development, will support the integration of system-level LSI/VLSI building blocks into a design and eliminate the necessity to design high-level functions at the gate-level.

MegaModule functions, scheduled for release during 4Q87, are a family of FIFO's and Register Files. Functions, including 29XX Bit Slice (2901 4-Bit Slice, 2902 Carry Look-Ahead, 2904 Status/Shift Controller, 2910 Microprogram Controller) and PC Peripheral (8237A DMA Controller, 8254 Internal Timer, 8259A Interrupt Controller, 82284 Clock Generator/Driver, 82288 Bus Controller) are scheduled for future release.

CompilerCell functions such as RAM, ROM and PLA, generated automatically on an engineering workstation utilizing user-specified dimensional parameters, will be available for 1-μm designs.

Contact the nearest TI field sales office for a copy of the TSC500 Series Family Data Sheet (SRSS033) and TSC500 Series Product Bulletin (SRYT03A).

2-μm SYSTEMCELL SERIES CMOS STANDARD CELLS

TI's SystemCell Series currently comprises more than 290 cell types including SSI, MSI, I/O, Boolean and extended functions such as RAM, ROM and PLA. Using 2-μm (1.6-μm effective gate length) double-level-metal, twin-well, silicon-gate CMOS technology, SystemCell functions allow for a large variety of circuit implementations at a reduced cost. Typical gate propagation delay for the smallest two-input NAND gate is 1.2 ns (fan − out = 2) with a maximum toggle rate of 69 MHz.

Refer to the order form located at the back of this Guide to obtain a copy of the 2-μm SystemCell Data Book (SRSD001).

STANDARD CELL FUNCTION SUMMARY		
Function	**TSC500 Series**	**SystemCell Series**
Basic Gates	117	117
Arithmetic Operators	3	3
Comparators	3	3
Counters	10	10
Decoder/Demultiplexers	6	6
FIFOs	3	–
Flip-Flops	27	23
Input Buffers	6	11
Inverters	24	24
I/O Buffers	32	18
I/O Terminators	5	5
Latches	25	25
Multiplexers	16	16
One-shots	–	1
Oscillators	4	5
Output Buffers	24	14
Power-Up Clear	1	1
RAM (Hard Macros)	–	4
Registers	2	2
Register Files	6	1
Shift Registers	13	13
Tie-offs	1	1
29XX Bit Slice	4	–

STANDARD CELL PACKAGE OPTIONS																		
Type	**Number of Pins**																	
	8	**16**	**20**	**24**	**28**	**40**	**44**	**48**	**64**	**68**	**84**	**100**	**120**	**132**	**144**	**164**	**180**	**208**
DIP	•	•	•	•	•	•		•										
SOIC		•	•		•													
LCC					•		•			•	•							
QFP											•	•		•				
PGA												•	•	•	•		•	•

Military Applications

TI also offers standard cell designs processed in compliance with MIL-STD-883, Method 5004/5005 or Method 5010. Production facilities are fully DESC and JAN certified. Refer to the Military Products Designer's Reference Guide (SGYZ001B) for more information regarding TI Military ASIC.

TECHNICAL DOCUMENTATION

Comprehensive design kits for the TGC100 Series gate arrays and the TSC500 Series standard cells are currently in development. Scheduled to be available during 1Q88, these kits — to be provided in a 3-ring binder format — will initially include a design manual, two-volume data manual, software utilities manual, and EWS specific library.

Contact the nearest field sales office for more information regarding the availability of these design kits.

The reader should refer to the "ASIC Alphanumeric Index" in Section 1 and to the order forms at the back of the Guide for additional information on available technical documentation.

DESIGN SERVICES

Texas Instruments has an established worldwide network of Regional Technology Centers (RTC) staffed by design professionals with direct application experience. Design engineers are available to assist in the evaluation of customer product design – from concept to prototype to production. The ASIC Design Center within each RTC is fully equipped with hardware/software design tools to support design analysis and optimization, schematic capture, simulation and layout. Access to these design tools within many design centers is provided to customers 24-hours a day.

A full range of design services is also available through TI's authorized ASIC distributors – Wyle Laboratories and Arrow Electronics. Staffed by experienced ASIC designers, the distributor design centers provide local access to additional resources. Additional distributor services include workstation leasing, flexible credit terms, and inventory buffer capability.

Contact the nearest RTC or ASIC distributor for additional information. Names and addresses are listed at the back of the Guide.

DESIGN TOOLS

TI ASIC libraries are supported on several popular engineering workstations. Design support software utilities are provided to supplement the graphic symbol, logic and simulation models, delay and interconnect models contained in each library. These software utilities assure that the final design database is fully verified and compatible with TI's IC design tools and test equipment.

Refer to the table below for a summary of workstations supporting TI ASIC libraries. Contact the nearest TI field sales office for the most up-to-date information regarding EWS library support.

WORKSTATIONS SUPPORTING TI ASIC LIBRARIES

Product	Family	Workstations			
		Daisy	Mentor	Valid	H-P
Gate Arrays	TGC100 Series	•	•		
Standard Cells	TSC500 Series	•	•		
	SystemCell Series	•	•	•	•

DESIGN WORKSHOPS

Designers initially engaging with TI are automatically enrolled in a gate array (ASICGA1) or standard cell (ASICSC1) design workshop to ensure the successful execution of an ASIC design. These one-day workshops, held at the customer site or at one of TI's Regional Technology Centers (RTC), are intended for designers experienced in logic design and familiar with basic engineering workstation operation. The workshops are instructed by experienced ASIC design engineers, and focus on design practices and techniques necessary to ensure design compatibility with TI's internal design automation tools and test equipment.

Instruction is provided in the following areas:

- ASIC technology options
- selection of TI library functions to meet performance/cost goals
- the effect of design partitioning/package selection on unit/system cost
- designing for testability
- recommended ASIC design practices
- TI ASIC design flow
- use of TI EWS design support software utility programs
- EWS design capture procedures to generate a TI netlist
- test pattern generation including format requirements
- TI ASIC test systems capabilities
- TI design execution requirements
- prototype test procedures
- design submission package preparation
- post layout simulation

Readers should contact the nearest TI Field Sales Office or RTC for more information concerning either workshop. Specific addresses and telephone numbers are listed at the back of this Guide.

DIGITAL LOGIC PRODUCTS

TI's digital logic family offers everything from standard bipolar devices to the latest VLSI products. Thanks to TI-proprietary technologies such as IMPACT™ and EPIC™, many TI logic devices feature substantially faster operating speeds and power savings beyond comparable products.

For instance, IMPACT (Implanted Advanced Composed Technology) creates 2-μm features, producing dramatic decreases in device size, length of signal paths and sidewall capacitance. This technology and a derivative, IMPACT-X (which utilizes trench isolation), have made it possible to create high-performance products such as: TI's 8-bit 'AS888 processor slice and 32-bit processor (see Section 4, subsection on High Performance VLSI Processors); 10-ns programmable array logic (PAL®) devices; and memory management products (see Section 4, subsection on Cache Tags, and DRAM controllers). The 1-μm EPIC™ process, Enhanced Performance Implanted CMOS, is bringing an Advanced CMOS Logic (ACL) family to the forefront of the industry. Three times faster than its standard counterparts, the ACL family includes more than 100 of the most popular 54/74 logic functions.

Along with these premiere products, TI's digital family now includes new BiCMOS bus interface devices (SN74BCT') which combine the best of bipolar and CMOS technologies. These devices can reduce system power consumption as much as 25% while maintaining advanced speed and output drive. All TI digital logic products have passed a rigorous quality and reliability program, making them prime candidates for ship-to-stock and just-in-time programs. The reader is urged to utilize the 1988 Master Selection Guide as a quick reference to TI's entire digital logic family.

The reader should refer to the 'Alphanumeric Index' and the 'Functional Index' in Section 1 and to the order forms at the back of the Guide for additional information on technical documentation.

Contents **Page**

Gates 3-4
Positive-NAND Gates 3-4
Positive-NAND Gates with Open-Collector Outputs 3-5
Positive-AND Gates with Open-Collector Outputs 3-5
Positive-AND Gates 3-5
Positive-OR Gates 3-6
Positive-NOR Gates 3-6
Positive-OR/NOR Gates 3-7
Exclusive OR/NOR Gates 3-7
AND-NOR Gates 3-7
AND-NOR Gates with Open-Collector Outputs 3-7
Expandable Gates 3-8
Multifunction Gates and Elements 3-8
Delay Elements 3-8

Contents **Page**

Inverters/Noninverting Buffers 3-9
Hex Inverters/Noninverters 3-9
Drivers and Bus Transceivers 3-10
Hex Drivers 3-10
Drivers with Open-Collector Outputs 3-10
Bus Transceivers with Open Collector Outputs 3-11
Drivers with 3-State Outputs 3-12
Bus Transceivers with 3-State Outputs 3-13
Line Drivers/Bus Transceivers/MOS Drivers 3-15
Line Drivers 3-15
50-Ohm/75-Ohm Line Drivers 3-16
Multifunction Drivers 3-16
Flip-Flops 3-17
Dual and Single Flip-Flops 3-17
Quad and Hex Flip-Flops 3-18
Octal, 9-Bit, and 10-Bit D-Type Flip-Flops 3-18
Latches and Multivibrators 3-20
Quad Latches with 2-State Outputs 3-20
Monostable Multivibrators 3-20
D-Type Octal, 9-Bit and 10-Bit Read-Back Latches 3-20
Octal, 9-Bit and 10-Bit Latches 3-21
Registers 3-22
Shift Registers 3-22
Shift Register with Latches 3-23
Sign-Protected Registers 3-23
Register Files 3-23
Other Registers 3-24
Counters 3-25
Synchronous Counter — Positive-Edge Triggered 3-25
Asynchronous Counters (Ripple Clock) — Negative-Edge Triggered 3-26
8-Bit Binary Counters with Registers 3-27
Frequency Dividers, Rate Multipliers 3-27
Decoders, Encoders, Data Selectors/Muliplexers and Shifters 3-28
Encoders/Data Selectors/Multiplexers 3-28
Decoders/Demultiplexers 3-30
Shifters 3-30
Open-Collector Display Decoders/Drivers 3-30
Open-Collector Display Decoders/Drivers with Counters/Latch 3-31
Voltage-Controlled Oscillators 3-31
Memory/Microprocessor Controllers 3-31
Digital Loops 3-31

Contents **Page**

Comparators and Error Detection Circuits 3-32
4-Bit Comparators 3-32
8-Bit Identity Comparators 3-32
Other Identity Comparators 3-32
Address Comparators 3-33
Parity Generators/Checkers, Error Detection and Correction Circuits 3-33
Fuse Programmable Comparators 3-33
Arithmetic Circuits and Processor Elements 3-34
Parallel Binary Adders 3-34
Accumulator, Arithmetic Logic Units, Look-Ahead Carry Generators 3-34
Programmable Logic Arrays 3-35
Standard High-Speed PAL® Circuits (ALS) 3-35
High Performance PAL® Circuits (ALS) 3-36
High Performance CMOS PAL® Circuits 3-37
High Performance IMPACT™ Programmable Array Logic 3-37
Field Programmable Logic Arrays (ALS) 3-37
VLSI 8-Bit-Slice Processor Family (see Section 4, Processors and Controllers) 3-38
VLSI 32-Bit Family (see Section 4, Processors and Controllers) 3-39
Ordering Instructions 3-40

Positive-NAND Gates

DESCRIPTION	TYPE	TECHNOLOGY									DOCUMENT
		STD TTL	LS	S	ALS	AS	F	HC	AC	ACT	
8-Input	'30	●	●	●							SDLD001
					A	●					SDAD001B
								●			SCLD001A
							●				SDFD001
	'11030								●	●	SCAD001
13-Input	'133				●						SDAD001B
								●			SCLD001A
				●							SDLD001
12-Input	'134			●							SDLD001
Dual 2-Input	'8003				●						SDAD001B
Dual 4-Input	'13	●	●								SDLD001
	'20	●	●	●							SDLD001
					A	●					SDAD001B
								●			SCLD001A
							●				SDFD001
	'40				A						SDAD001B
		●	●	●							SDLD001
	'1020				A						SDAD001B
	'11020								●	●	SCAD001
Triple 3-Input	'10	●	●	●							SDLD001
					●	●					SDAD001B
								●			SCLD001A
							●				SDFD001
	'1010				A						SDAD001B
	'11010								●	●	SCAD001
Quad 2-Input	'00				A	●					SDAD001B
		●	●	●							SDLD001
								●			SCLD001A
							●				SDFD001
	'26	●	●								SDLD001
	'37	●	●	●							SDLD001
					A						SDAD001B
	'38	●	●	●							SDLD001
					A						SDAD001B
	'39	●									SDLD001
	'132	●	●	●							SDLD001
								●			SCLD001A
	'1000				A	A					SDAD001B
	'11000								●	●	SCAD001
Hex 2-Input	'804				A	B					SDAD001B
								●			SCLD001A
	'1804				A	●					SDAD001B

How to read Digital Logic Products selection tables:

The following symbols are common to all selection tables on pages 3-4 to 3-34.

- ● = Product available in technology indicated
- ▲ = New Product planned in technology indicated
- A = "A" suffix version available in technology indicated
- B = "B" suffix version available in technology indicated

Positive-NAND Gate with Open-Collector Outputs

DESCRIPTION	TYPE	TECHNOLOGY									DOCUMENT
		STD TTL	LS	S	ALS	AS	F	HC	AC	ACT	
Dual 4-Input	'22	•		•							SDLD001
					B						SDAD001B
Triple 3-Input	'12	•	•								SDLD001
					A						SDAD001B
Quad 2-Input	'01	•	•								SDLD001
					•						SDAD001B
								•			SCAD001
	'03	•	•	•							SDLD001
					B						SDAD001B
								•			SCLD001A
	'1003				A						SDAD001B

Positive-AND Gate with Open-Collector Outputs

DESCRIPTION	TYPE	TECHNOLOGY									DOCUMENT
		STD TTL	LS	S	ALS	AS	F	HC	AC	ACT	
Triple 3-Input	'15		•	•							SDLD001
					A						SDAD001B
Quad 2-Input	'09	•	•	•							SDLD001
					•						SDAD001B
								•			SCLD001A
							•				SDFD001
	'7001							•			SCLD001A

Positive-AND Gates

DESCRIPTION	TYPE	TECHNOLOGY									DOCUMENT
		STD TTL	LS	S	ALS	AS	F	HC	AC	ACT	
Dual 4-Input	'21				A	•					SDAD001B
			•								SDLD001
								•			SCLD001A
							•				SDFD001
	'11021								•	•	SCAD001
Triple 3-Input	'11		•	•							SDLD001
					A	•					SDAD001B
								•			SCLD001A
							•				SDFD001
	'1011				A						SDAD001B
	'11011								•	•	SCAD001
Quad 2-Input	'08	•	•	•							SDLD001
					•	•					SDAD001B
								•			SCLD001A
							•				SDFD001
	'1008				A	A					SDAD001B
	'11008								•	•	SCAD001

See "How to read Digital Logic Products selection tables" on page 3-4.

Positive-OR Gates

DESCRIPTION	TYPE	TECHNOLOGY									DOCUMENT
		STD TTL	LS	S	ALS	AS	F	HC	AC	ACT	
Triple 3-Input	'4075							•			SCLD001A
Quad 2-Input	'32	•	•	•							SDLD001
					•	•					SDAD001B
								•			SCLD001A
							•				SDFD001
	'1032				A	A					SDAD001B
	'11032								•	•	SCAD001
Quad 2-Input	'7032							•			SCLD001A
Hex 2-Input	'832				A	B					SDAD001B
								•			SCLD001A
	'1832				A	•					SDAD001B

Positive-NOR Gates

DESCRIPTION	TYPE	TECHNOLOGY									DOCUMENT
		STD TTL	LS	S	ALS	AS	F	HC	AC	ACT	
Dual 4-Input with Strobe	'25	•									SDLD001
Dual 4-Input	'4002							•			SCLD001A
Dual 5-Input	'260			•							SDLD001
Triple 3-Input	'27	•	•								SDLD001
					•	•					SDAD001B
								•			SCLD001A
							•				SDFD001
	'11027								•	•	SCAD001
Quad 2-Input	'02	•	•	•							SDLD001
					•	•					SDAD001B
								•			SCLD001A
							•				SDFD001
	'28	•	•								SDLD001
					A						SDAD001B
	'33	•	•								SDLD001
					A						SDAD001B
	'36							•			SCLD001A
							•				SDFD001
	'1002				A						SDAD001B
	'1036					A					SDAD001B
	'7002							•			SCLD001A
	'11002								•	•	SCAD001
Hex 2-Input	'805				A	B					SDAD001B
								•			SCLD001A
	'1805				A	•					SDAD001B

See "How to read Digital Logic Products selection tables" on page 3-4.

Positive-OR/NOR Gates

DESCRIPTION	TYPE	TECHNOLOGY									DOCUMENT
		STD TTL	LS	S	ALS	AS	F	HC	AC	ACT	
8-Input	'4078							A			SCLD001A

Exclusive OR/NOR Gates

DESCRIPTION	TYPE	TECHNOLOGY						DOCUMENT
		STD TTL	LS	S	ALS	AS	HC	
Quad 2-Input Exclusive OR Gates with Totem-Pole Outputs	'86	•	A	•				SDLD001
					•			SDAD001B
							•	SCLD001A
	'386						•	SCLD001A
Quad 2-Input Exclusive OR Gates with Open-Collector Outputs	'136	•	•					SDLD001
					•			SDAD001B
						▲		SDAD001B
Quad 2-Input Exclusive-NOR Gates	'266		•					SDLD001
							•	SCLD001A
	'810				•	▲		SDAD001B
	'7266						•	SCLD001A
Quad 2-Input Exclusive-NOR Gates with Open-Collector Outputs	'811				•	▲		SDAD001B
Quad Exclusive OR/NOR Gates	'135			•				SDLD001

AND-NOR Gates

DESCRIPTION	TYPE	TECHNOLOGY							DOCUMENT
		STD TTL	LS	S	ALS	AS	HC	HCT	
2-Wide 4-Input	'55		•						SDLD001
4-Wide 4-2-3-2 Input	'64			•					SDLD001
4-Wide 2-2-3-2 Input	'54	•	•						SDLD001
Dual 2-Wide 2-Input	'51	•	•	•					SDLD001
							•		SCLD001A

AND-NOR Gates with Open-Collector Outputs

DESCRIPTION	TYPE	TECHNOLOGY							DOCUMENT
		STD TTL	LS	S	ALS	AS	HC	HCT	
4-Wide 4-2-3-2-Input	'65			•					SDLD001

See "How to read Digital Logic Products selection tables" on page 3-4.

Expandable Gates

DESCRIPTION	TYPE	TECHNOLOGY							DOCUMENT
		STD TTL	LS	S	ALS	AS	HC	HCT	
Dual 2-Wide AND-OR-Invert	'50	•							SDLD001
Dual 4-Input Positive-NOR with Strobe	'23	•							SDLD001

Multifunction Gates and Elements

DESCRIPTION	TYPE	TECHNOLOGY							DOCUMENT
		STD TTL	LS	S	ALS	AS	HC	HCT	
Inverter,3-/4-Input NAND/NOR Combination	'7006						•		SCLD001A
6-Section NAND Invert,NOR	'7008						•		SCLD001A
Quadruple Complementary Output Logic Element	'265	•							SDLD001

Delay Elements

DESCRIPTION	TYPE	TECHNOLOGY							DOCUMENT
		STD TTL	LS	S	ALS	AS	HC	HCT	
Inverting and Noninverting Elements 2-Input NAND-Buffer	'31		•						SDLD001

See "How to read Digital Logic Products selection tables" on page 3-4.

INVERTERS/NONINVERTING BUFFERS

Hex Inverters/Noninverters

DESCRIPTION	TYPE	TECHNOLOGY										DOCUMENT
		STD TTL	LS	S	ALS	AS	F	HC	AC	ACT	HCU	
Hex Inverters	'04	•	•	•								SDLD001
					B	•						SDAD001B
								•				SCLD001A
											•	SCLD001A
							•					SDFD001
	'11004								•	•		SCAD001
	'05	•	•	•								SDLD001
					A							SDAD001B
								•				SCLD001A
	'06	•										SDLD001
	'14	•	•									SDLD001
								•				SCLD001A
	'16	•										SDLD001
	'19		•									SDLD001
	'1004				•	A						SDAD001B
	'1005				•							SDAD001B
Hex Noninverter	'34				•	•						SDAD001B
	'11034								•	•		SCAD001

See "How to read Digital Logic Products selection tables" on page 3-4.

DRIVER AND BUS TRANSCEIVERS

Hex Drivers

DESCRIPTION	TYPE	TECHNOLOGY							DOCUMENT
		STD TTL	LS	S	ALS	AS	HC	HCT	
Hex 2-Input Driver	'808				A	B			SDAD001B
							•		SCLD001A
	'1808				A	•			SDAD001B
Hex Driver	'07	•							SDLD001
	'17	•							SDLD001
	'35				A				SDAD001B
	'1034				•	A			SDAD001B
	'1035				•				SDAD001B
Noninverting Hex Buffers/ Drivers	'365	A	A						SDLD001
							•		SCLD001A
	'366	A	A						SDLD001
							•		SCLD001A
	'367	A	A						SDLD001
							•		SCLD001A
	'368	A	A						SDLD001
							•		SCLD001A

Drivers with Open-Collector Outputs

DESCRIPTION	TYPE	TECHNOLOGY							DOCUMENT
		STD TTL	LS	S	ALS	AS	HC	HCT	
Noninverting Octal Buffers, Drivers	'757					•			SDAD001B
	'760				▲	•			SDAD001B
Inverting Octal Buffers, Drivers	'756				•	•			SDAD001B
	'763				•	•			SDAD001B
Inverting and Noninverting Octal Buffers, Drivers	'762					•			SDAD001B

See "How to read Digital Logic Products selection tables" on page 3-4.

Bus Transceivers with Open Collector Outputs

DESCRIPTION	TYPE	TECHNOLOGY							DOCUMENT
		STD TTL	LS	S	ALS	AS	F	HC	
Noninverting Quad Transceivers	'759					•			SDAD001B
Inverting Quad Transceivers	'758				•	•			SDAD001B
12 mA/24 mA/ 40 mA Sink Transceivers	'615				•				SDAD001B
	'621				A	•			SDAD001B
							•		SDFD001
	'639				A	•			SDAD001B
	'641				A	•			SDAD001B
			•						SDLD001
12 mA/24 mA/ 48 mA Sink Inverting Output Transceivers	'614				•				SDAD001B
	'622				A	•			SDAD001B
							•		SDFD001
	'638				A	•			SDAD001B
	'642				A	•			SDAD001B
			•						SDLD001
	'653				•				SDAD001B
12 mA/24 mA/ 48 mA Sink, True and Inverting Output Transceivers	'644				A	•			SDAD001B
			•						SDLD001
Registered With Multiplexed 12 mA/24 mA/ 48 mA True Output Transceivers	'647				•				SDAD001B
	'654				•				SDVD001
Registered with Multiplexed 12 mA/24 mA/ 48 mA Inverting Output Transceivers	'649				•				SDVD001

See "How to read Digital Logic Products selection tables" on page 3-4.

Drivers with 3-State Outputs

DESCRIPTION	TYPE	TECHNOLOGY											DOCUMENT
		STD TTL	LS	S	ALS	AS	F	HC	HCT	AC	ACT	BCT	
Quad Buffers/ Drivers with Independent Output Controls	'125	•	A										SDLD001
								•					SCLD001A
	'126	•	A										SDLD001
								•					SCLD001A
Noninverting Octal Buffers/ Drivers	'241		•	•									SDLD001
					A	•							SDAD001B
								•	•				SCLD001A
							•						SDFD001
												▲	TBA
	'11241										▲		SCAD001
	'244		•	•									SDLD001
					A	•							SDAD001B
								•	•				SCLD001A
							•						SDFD001
												▲	TBA
	'11244									•	•		SCAD001
	'465		•										SDLD001
					A								SDAD001B
	'467				A								SDAD001B
	'541		•										SDLD001
					•								SDAD001B
								•					SCAD001
									•				SCLD001A
	'1244				A								SDAD001B
Inverting Octal Buffers/ Drivers	'231				•	•							SDAD001B
	'240		•	•									SDLD001
					A	•							SDAD001B
								•	•				SCLD001A
							•						SDFD001
												▲	TBA
	'11240									•			SCAD001
											•		SCAD001
	'466		•										SDLD001
					A								SDAD001B
	'468				A								SDAD001B
	'540		•										SDLD001
					•								SDAD001B
								•					SCAD001
									•				SCAD001
	'1240				•								SDAD001B

See "How to read Digital Logic Products selection tables" on page 3-4.

Drivers with 3-State Outputs (Continued)

DESCRIPTION	TYPE	TECHNOLOGY											DOCUMENT
		STD TTL	LS	S	ALS	AS	F	HC	HCT	AC	ACT	BCT	
Inverting and Noninverting Octal Buffers/ Drivers	'230					•							SDAD001B
Noninverting I0-Bit Buffers/ Drivers	'2827											•	SCLS051
	'29827				•								SDVD001
												•	SCLS052
Inverting 10-Bit Buffers/ Drivers	'2828											•	SCLS051
	'29828				•								SDVD001
												•	SCLS052

Bus Transceivers with 3-State Outputs

DESCRIPTION	TYPE	TECHNOLOGY										DOCUMENT
		LS	S	ALS	AS	F	HC	HCT	AC	ACT	BCT	
Noninverting Quad Transceivers	'243	•										SDLD001
				A	•							SDAD001B
							•	•				SCLD001A
						•						SDFD001
Inverting Quad Transceivers	'242	•										SDLD001
				B	•							SDAD001B
							•	•				SCLD001A
						•						SDFD001
	'1242			•								SDAD001B
Quad Transceivers	'442	•										SDLD001
Octal Transceivers	'245	•										SDLD001
				A	•							SDAD001B
							•					SCLD001A
								•				SCAD001
						•						SDFD001
											▲	TBA
	'11245								▲	▲		SCAD001
	'620						•	•				SCLD001A
				A	•							SDAD003
						•						SDFD001
	'11620								▲	▲		SCAD001
	'640						•					SCAD001
								•				SCAD001
				A	•							SDAD001B
		•										SDLD001
	'11640								▲	▲		SCAD001

See "How to read Digital Logic Products selection tables" on page 3-4.

Bus Transceivers with 3-State Outputs (Continued)

DESCRIPTION	TYPE	TECHNOLOGY										DOCUMENT
		LS	S	ALS	AS	F	HC	HCT	AC	ACT	BCT	
Octal Transceivers	'643						•					SCAD001
								•				SCAD001
				A	•							SDAD001B
	'11643								▲	▲		SCAD001
	'1245			A								SDAD003
											▲	TBA
Octal Bus Transceivers with Registers	'543					▲						SDFD001
	'544					▲						SDFD001
	'646						•	•				SCLD001
				•	•							SDAD001B
		•										SDLD001
	'648						•	•				SCLD001A
				•	•							SDVD001
		•										SDLD001
	'651						•	•				SCLD001A
				•	•							SDVD001
		•										SDLD001
	'652						•	•				SCLD001A
				•	•							SDVD001
		•										SDLD001
	'11646								▲	▲		SCAD001
	'11648								▲	▲		SCAD001
	'11651								▲	▲		SCAD001
	'11652								▲	▲		SCAD001
8-/9-Bit Bus Transceivers with Parity Checker/ Generator	'658						•	•				SCLD001A
	'659						•	•				SCLD001A
	'664						•	•				SCLD001A
	'665						•	•				SCLD001A
	'29833			•								SDVD001
											▲	TBA
	'29834			•								SDVD001
											▲	TBA
	'29853			•								SDVD001
											▲	TBA
	'29854			•								SDVD001
											▲	TBA
Noninverting 9-Bit Transceivers	'29863			•								SDVD001
											•	SCLS055
Inverting 9-Bit Transceivers	'29864			•								SDVD001
											▲	TBA
Noninverting 10-Bit Transceivers	'29861			•								SDVD001
											•	SCLS056
Inverting 10-Bit Transceivers	'29862			•								SDVD001
											▲	TBA

See "How to read Digital Logic Products selection tables" on page 3-4.

Bus Transceivers with 3-State Outputs (Continued)

DESCRIPTION	TYPE	TECHNOLOGY										DOCUMENT
		LS	S	ALS	AS	F	HC	HCT	AC	ACT	BCT	
12 mA/24 mA/ 48 mA Sink, True Output Transceivers	'623			A	●							SDAD003
		●										SDLD001
							●	●				SCLD001A
						●						SDFD001
	'645						●					SCLD001A
								●				SCLD001A
				A	●							SDAD001B
		●										SDLD001
	'654			●								SDAD001B
	'1640			A								SDAD001B
	'1645			A								SDAD001B
	'11623								▲	▲		SCAD001
Universal Transceiver/ Port Controllers	'852				▲							SDVD001
	'856				▲							SDVD001
	'877				▲							SDVD001

Line Drivers/ Bus Transceivers/ MOS Drivers

DESCRIPTION	TYPE	TECHNOLOGY							DOCUMENT
		STD TTL	LS	S	ALS	AS	HC	BCT	
Bus Transceivers	'2242				●				SDAD001B
	'2620					●			SDAD001B
	'2623					●			SDAD001B
	'2640					●			SDAD001B
	'2645					●			SDAD001B
Line Drivers	'2240				●				SDAD001B
	'2240							▲	TBA
	'2241							▲	TBA
	'2244				▲				TBA
	'2244							▲	TBA
	'2540				●				SDAD001B
	'2541				●				SDAD001B

Line Drivers

DESCRIPTION	TYPE	TECHNOLOGY							DOCUMENT
		STD TTL	LS	S	ALS	AS	HC	HCT	
Octal Buffers AND/Line Drivers with Input Pull-up Resistors	'746				●				SDAD001B
	'747				●				SDAD001B
Octal/Line Drivers/with 3-State Output	'2540				●				SDAD001B
	'2541				●				SDAD001B

See "How to read Digital Logic Products selection tables" on page 3-4.

50-Ohm/75-Ohm Line Drivers

DESCRIPTION	TYPE	TECHNOLOGY							DOCUMENT
		STD TTL	LS	S	ALS	AS	HC	HCT	
Quad 2-Input Positive-NOR	'128	•							SDLD001
Dual 4-Input Positive-NAND	'140			•					SDLD001
Hex 2-Input Positive-NAND	'804				A	B			SDAD001B
							•		SCLD001A
	'1804				A	•			SDAD001B
Hex 2-Input Positive-NOR	'805				A	B			SDAD001B
							•		SCLD001A
	'1805				A	•			SDAD001B
Hex 2-Input Positive-AND	'808				A	B			SDAD001B
							•		SCLD001A
	'1808				A	•			SDAD001B
Hex 2-Input Positive-OR	'832				A	B			SDAD001B
							•		SCLD001A
	'1832				A	•			SDD001B

Multifunction Drivers

DESCRIPTION	TYPE	TECHNOLOGY							DOCUMENT
		STD TTL	LS	S	ALS	AS	HC	HCT	
Dual Pulse Synchronizers/ Drivers	'120	•							SDLD001

See "How to read Digital Logic Products selection tables" on page 3-4.

Dual and Single Flip-Flops

DESCRIPTION	TYPE	TECHNOLOGY									DOCUMENT
		STD TTL	LS	S	ALS	AS	HC	AC	ACT	F	
Dual J-K Edge Triggered	'73	•	A								SDLD001
							•				SCLD001A
	'76	•	A								SDLD001
							•				SCLD001A
	'78		A								SDLD001
							•				SCLD001A
	'107	•	A								SDLD001
							•				SCLD001A
	'109	•	A								SDLD001
					A	•					SDAD001B
							•				SCLD001A
										•	SDFD001
	'112		A	A							SDLD001
					A						SDAD001B
							•				SCLD001A
										•	SDFD001
	'113		A	A							SDLD001
					A						SDAD001B
							•				SCLD001A
										•	SDFD001
	'114		A	A							SDLD001
					A						SDAD001B
							•				SCLD001A
										•	SDFD001
	'11109							•	•		SCAD001
Single J-K Edge Triggered	'70	•									SDLD001
Dual D-Type	'74	•	A	•							SDLD001
					A	•					SDAD001B
							•				SCLD001A
										•	SDFD001
	'11074							•	•		SCAD001
Dual D-Type with 2-Input NAND/NOR Gates	'7074						•				SCLD001A
	'7075						•				SCLD001A
	'7076						•				SCLD001A
Dual 4-Bit D-Type Edge-Triggered	'874				B	•					SDAD001B
	'876				A	•					SDAD001B
	'878				A	•					SDAD001B
	'879				A	•					SDAD001B

See "How to read Digital Logic Products selection tables" on page 3-4.

Quad and Hex Flip-Flops

DESCRIPTION	OUTPUTS	NO. OF FF's	TYPE	TECHNOLOGY							DOCUMENT
				STD TTL	LS	S	ALS	AS	HC	F	
D-Type	Q,$\overline{Q}$	4	'175	●	●	●					SDLD001
							●	●			SDAD001B
									●		SCLD001A
										●	SDFD001
			'379		●						SDLD001
									●		SCLD001A
										●	SDFD001
	Q	6	'174	●	●	●					SDLD001
							●	●			SDAD001B
									●		SCLD001A
										●	SDFD001
			'378		●						SDLD001
									●		SCLD001A
										●	SDFD001
J-K	Q	4	'276	●							SDLD001
			'279	●	A						SDLD001
			'376	●							SDLD001

Octal, 9-Bit, and 10-Bit D-Type Flip-Flops

DESCRIPTION	NO. OF BITS	OUTPUTS	TYPE	TECHNOLOGY											DOCUMENT
				STD TTL	LS	S	ALS	AS	HC	HCT	AC	ACT	BCT	F	
True Data	Octal	3-State	'374		●	●									SDLD001
							●	●							SDAD001B
									●	●					SCLD001A
													▲		TBA
														●	SDFD001
			'574				A	●							SDAD001B
									●	●					SCLD001A
														●	SDFD001
			'11374								▲	▲			SCAD001
True Data with Clear	Octal	2-State	'273	●	●										SDLD001
							●								SDAD001B
									●						SCLD001A
														●	SDFD001
		3-State	'575				A	●							SDAD001B
			'874				A	●							SDAD001B
			'878				A	●							SDAD001B
True with Enable	Octal	2-State	'377		●										SDLD001
									●						SCLD001A
														●	SDFD001

See "How to read Digital Logic Products selection tables" on page 3-4.

Octal, 9-Bit, and 10-Bit D-Type Flip-Flops (Continued)

DESCRIPTION	NO. OF BITS	OUTPUTS	TYPE	TECHNOLOGY											DOCUMENT
				STD TTL	LS	S	ALS	AS	HC	HCT	AC	ACT	BCT	F	
Inverting	Octal	3-State	'534				•	•							SDAD001B
									•						SCLD001A
										•					SCLD001A
													▲		TBA
														•	SDFD001
			'564				A								SDAD001B
									•	•					SCLD001A
														•	SDFD001
			'576				A	•							SDAD001B
			'826					•							SDVD001
			'11534								▲	▲			SCAD001
Inverting with Clear	Octal	3-State	'577				A	•							SDAD001B
			'879				A	•							SDAD001B
Inverting with Preset	Octal	3-State	'876				A	•							SDAD001B
True	Octal	3-State	'825					•							SDVD001
	9-Bit	3-State	'823					•							SDVD001
			'1823					•							SDAS126
Inverting	9-Bit	3-State	'824					•							SDVD001
True	10-Bit	3-State	'821					•							SDVD001
			'1821					•							SDAS131
Inverting	10-Bit	3-State	'822					•							SDVD001

See "How to read Digital Logic Products selection tables" on page 3-4.

LATCHES AND MULTIVIBRATORS

Quad Latches with 2-State Outputs

DESCRIPTION	TYPE	TECHNOLOGY							DOCUMENT
		STD TTL	LS	S	ALS	AS	HC	HCT	
Bistable	'75	•	•						SDLD001
							•		SCLD001A
	'375		•						SDLD001
							•		SCLD001A
S-R	'279	•	A						SDLD001

Monostable Multivibrators

DESCRIPTION	TYPE	TECHNOLOGY							DOCUMENT
		STD TTL	LS	S	ALS	AS	HC	HCT	
Single	'121	•							SDLD001
	'122	•	•						SDLD001
	'130	•							SDLD001
Dual	'123	•	•						SDLD001
	'221	•	•						SDLD001
	'423		•						SDLD001

D-Type Octal,9-Bit, and 10-Bit Read-Back Latches

DESCRIPTION	NO. OF BITS	TYPE	TECHNOLOGY							DOCUMENT
			STD TTL	LS	S	ALS	AS	HC	HCT	
Edge-Triggered Inverting and Noninverting	Octal	'996				•				SDVD001
Transparent True	Octal	'990				•				SDVD001
	9-Bit	'992				•				SDVD001
	10-Bit	'994				•				SDVD001
Transparent Noninverting	Octal	'991				•				SDVD001
	9-Bit	'993				•				SDVD001
	10-Bit	'995				•				SDVD001
Transparent with Clear True Outputs	Octal	'666				•				SDVD001
Transparent with Clear Inverting Outputs	Octal	'667				•				SDVD001

See "How to read Digital Logic Products selection tables" on page 3-4.

Octal, 9-Bit, and 10-Bit Latches

DESCRIPTION	NO. OF BITS	OUTPUT	TYPE	TECHNOLOGY											DOCUMENT
				STD TTL	LS	S	ALS	AS	HC	HCT	AC	ACT	BCT	F	
Transparent	Octal	3-State	'373		•	•									SDLD001
							•	•							SDAD001B
									•	•					SCLD001A
													•		TBA
														•	SDFD001
			'573				B	•							SDAD001B
									•	•					SCLD001A
														•	SDFD001
			'11373								•	•			SCAD001
Dual 4-Bit Transparent	Octal	2-State	'116	•											SDLD001
		3-State	'873				B	•							SDAD001B
Inverting Transparent	Octal	3-State	'533				•	•							SDAD001B
									•	•					SCLD001A
													•		TBA
														•	SDFD001
			'11533								•	•			SCAD001
			'563				A								SDAD001B
									•	•					SCLD001A
														•	SDFD001
			'580				A	•							SDAD001B
Dual 4-Bit Inverting Transparent	Octal	3-State	'880				A	•							SDAD001B
2-Input Multiplexed	Octal	3-State	'604						•						SCLD001A
		OC	'607		•										SDLD001
Addressable	Octal	2-State	'259	•	B										SDLD001
							•								SDAD001B
									•						SCLD001A
		Q Only	'4724						•						SCLD001A
True	10-Bit	3-State	'841				•	•							SDVD001
			'1841					•							SDAS130
True	9-Bit	3-State	'843				•	•							SDVD001
			'1843					•							SDAS127
True	Octal	3-State	'845				•	•							SDVD001
Inverting	10-Bit	3-State	'842				•	•							SDVD001
	9-Bit	3-State	'844				•	•							SDVD001
	Octal	3-State	'846				•	•							SDVD001

See "How to read Digital Logic Products selection tables" on page 3-4.

REGISTERS

Shift Registers

DESCRIPTION	NO. OF BITS	MODES				TYPE	TECHNOLOGY							DOCUMENT
		S-	S	L	H		STD TTL	LS	S	ALS	AS	HC	F	
Sign Protected		X		X	X	'322		A						SDLD001
Parallel-In Parallel-Out Bidirectional	4	X	X	X	X	'194	•	A	•					SDLD001
											•			SDAD001B
												•		SCLD001A
	8	X	X	X	X	'198	•							SDLD001
		X	X	X	X	'299		•	•					SDLD001
										•				SDAD001B
												•		SCLD001A
													•	SDFD001
		X	X	X	X	'323		•						SDLD001
										•				SDAD001B
												•		SCLD001A
													•	SDFD001
Parallel-In Parallel-Out	4	X		X		'95	A	B						SDLD001
											•			SDAD001B
		X		X		'195	•	•	•					SDLD001
												•		SCLD001A
		X		X		'295		B						SDLD001
		X		X		'395		A						SDLD001
	5	X		X		'96	•	•						SDLD001
	8	X		X	X	'199	•							SDLD001
Serial-In Parallel-Out	8	X				'164	•	•						SDLD001
												•		SCLD001A
Parallel-In Serial-Out	8	X		X	X	'165	•	A						SDLD001
												•		SCLD001A
		X		X	X	'166	•	A						SDLD001
												•		SCLD001A
	16	X		X	X	'674		•						SDLD001
Serial-In Serial-Out	8	X				'91		•						SDLD001

NOTE: Modes; S- = S-R, S = S-L, L = Load, H = Hold

See "How to read Digital Logic Products selection tables" on page 3-4.

Shift Registers with Latches

DESCRIPTION	NO. OF BITS	OUTPUT	TYPE	TECHNOLOGY						DOCUMENT
				STD TTL	LS	S	ALS	AS	HC	
Parallel-In, Parallel-Out with Output Latches	4	3-State	'671		•					SDLD001
			'672		•					SDLD001
Serial-In Parallel-Out with Output Latches	8	Buffered	'594		•					SDLD001
									•	SCLD001A
		3-State	'595		•					SDLD001
									•	SCLD001A
		OC	'599		•					SDLD001
	16	2-State	'673		•					SDLD001
Parallel-In, Serial-Out with Input Latches	8	2-State	'597		•					SDLD001
Parallel I/O Ports with Input Latches Multiplexed Serial Inputs	8	3-State	'598		•					SDLD001

Sign-Protected Registers

DESCRIPTION	NO. OF BITS	MODES				TYPE	TECHNOLOGY						DOCUMENT
		S-	S	L	H		STD TTL	LS	S	ALS	AS	HC	
Sign-Protected Registers	8	X		X	X	'322		A					SDLD001

Register Files

DESCRIPTION	OUTPUT	TYPE	TECHNOLOGY						DOCUMENT
			STD TTL	LS	S	ALS	AS	HC	
Dual 16 Words × 4 Bits	3-State	'870				▲	•		SDVD001
		'871				▲	•		SDVD001
4 Words × 4 Bits	OC	'170	•	•					SDLD001
	3-State	'670		•					SDLD001
8 Words × 2 Bits	3-State	'172	•						SDLD001
64 Words × 40 Bits	3-State	'8834					▲		TBA

See "How to read Digital Logic Products selection tables" on page 3-4.

Other Registers

DESCRIPTION	TYPE	TECHNOLOGY							DOCUMENT
		STD TTL	LS	S	ALS	AS	HC	BCT	
Quadruple Multiplexers with Storage	'298	●	●						SDLD001
						●			SDAD001B
							●		SCLD001A
8-Bit Universal Shift Registers	'299		●	●					SDLD001
					●				SDAD001B
Quadruple Bus Buffer Register	'173	●	A						SDLD001
							●		SCLD001A
Data Selector/ Multiplexer/ Register	'356		●						SDLD001
							●		SCLD001A
Dual-Rank 8-Bit Shift Register	'963				▲				SDVD001
	'964				▲				SDVD001
8-Bit Diagnostic/ Pipeline Register	'819				●			●	SDAS105
	'29818				●				SDAS105
								▲	TBA

See "How to read Digital Logic Products selection tables" on page 3-4.

COUNTERS

Synchronous Counters — Positive-Edge Triggered

DESCRIPTION	PARALLEL LOAD	TYPE	TECHNOLOGY							DOCUMENT
			STD TTL	LS	S	ALS	AS	HC	F	
Decade	Sync	'160	•	A						SDLD001
						B	•			SDAD001B
								•		SCLD001A
									•	SDFD001
		'162		A	•					SDLD001
						B	•			SDAD001B
								•		SCLD001A
									•	SDFD001
		'560				A				SDAD001B
		'692						▲		SCLD001A
Decade Up/ Down	Sync	'168				B	•			SDAD001B
									•	SDFD001
	Async	'190	•	•						SDLD001
						•				SDAD001B
								•		SCLD001A
		'192	•	•						SDLD001
						•				SDAD001B
								•		SCLD001A
	Sync	'568				A				SDAD001B
									•	SDFD001
		'696						▲		SCLD001A
4-Bit Binary	Sync	'161	•	A						SDLD001
						B	•			SDAD001B
								•		SCLD001A
									•	SDFD001
		'163	•	A	•					SDLD001
						B	•			SDAD001B
								•		SCLD001A
									•	SDFD001
		'561				A				SDAD001B
		'669		•						SDLD001
		'691						▲		SCLD001A
		'693						▲		SCLD001A
8-Bit Binary	Sync	'8161				•				SDAS116
		'8163				•				SDAS104

See "How to read Digital Logic Products selection tables" on page 3-4.

Synchronous Counters — Positive-Edge Triggered (Continued)

DESCRIPTION	PARALLEL LOAD	TYPE	TECHNOLOGY							DOCUMENT
			STD TTL	LS	S	ALS	AS	HC	F	
4-Bit Binary Up/Down	Async	'191	•	•						SDLD001
						•				SDAD001B
								•		SCLD001A
		'193	•	•						SDLD001
						•				SDAD001B
								•		SCLD001A
	Sync	'169		B	•					SDLD001
						B	•			SDAD001B
									•	SDFD001
		'569				A				SDAD001B
									•	SDFD001
		'697		•						SDLD001
		'699		•						SDLD001
8-Bit Up/Down	Sync	'8169				•				SDAS117
	Async CLR	'867				•	•			SDVD001
	Sync CLR	'869				•	•			SDVD001
Divide-by-10 Johnson Counter		'4017						•		SCLD001A
Divide-by-8 Johnson Counter		'7022						•		SCLD001A

Asynchronous Counters (Ripple Clock) — Negative-Edge Triggered

DESCRIPTION	PARALLEL LOAD	TYPE	TECHNOLOGY						DOCUMENT
			STD TTL	LS	S	ALS	AS	HC	
Decade	Set-to-9	'90		•					SDLD001
	Yes	'176	•						SDLD001
	Yes	'196	•	•	•				SDLD001
	Set-to-9	'290		•					SDLD001
4-Bit Binary	None	'93	A	•					SDLD001
	Yes	'177	•						SDLD001
	Yes	'197	•	•	•				SDLD001
	None	'293	•	•					SDLD001
Divide-by-12 Dual Decade	None	'92	A	•					SDLD001
		'390	•	•					SDLD001
								•	SCLD001A
	Set-to-9	'490						•	SCLD001A
Dual 4-Bit Binary	None	'393	•	•					SDLD001
								•	SCLD001A
7-Bit Binary		'4024						•	SCLD001A
12-Bit Binary		'4040						•	SCLD001A
14-Bit Binary		'4020						•	SCLD001A
		'4060						•	SCLD001A
		'4061						•	SCLD001A

See "How to read Digital Logic Products selection tables" on page 3-4.

8-Bit Binary Counters with Registers

DESCRIPTION	PARALLEL LOAD	TYPE	TECHNOLOGY						DOCUMENT
			STD TTL	LS	S	ALS	AS	HC	
Parallel Register Outputs	3-State	'590		•					SDLD001
								•	SCLD001A
	OC	'591		•					SDLD001
Parallel Register Inputs	2-State	'592		•					SDLD001
Parallel I/O	3-State	'593		•					SDLD001

Frequency Dividers, Rate Multipliers

DESCRIPTION	TYPE	TECHNOLOGY						DOCUMENT
		STD TTL	LS	S	ALS	AS	HC	
60-Bit Binary Rate Multiplier	'97	•						SDLD001
Decade Rate Multiplier	'167	•						SDLD001
Programmable Frequency Dividers/ Digital Timers	'292		•					SDLD001
	'294		•					SDLD001

See "How to read Digital Logic Products selection tables" on page 3-4.

DECODERS, ENCODERS,DATA SELECTORS/MULTIPLEXERS AND SHIFTERS

Encoders/Data Selectors/Multiplexers

DESCRIPTION	OUTPUT	TYPE	TECHNOLOGY							DOCUMENT
			STD TTL	LS	S	ALS	AS	HC	F	
Quad 2-to-1	2-State	'157	•	•	•					SDLD001
						•	•			SDAD001B
								•		SCLD001A
									•	SDFD001
		'158		•	•					SDLD001
						•	•			SDAD001B
								•		SCLD001A
									•	SDFD001
		'298	•	•						SDLD001
							•			SDAD001B
								•		SCLD001A
		'399		•						SDLD001
	3-State	'257		B	•					SDLD001
						•				SDAD001B
							•			SDAD001B
								•		SCLD001A
									•	SDFD001
		'258		B	•					SDLD001
						•	•			SDAD001B
								•		SCLD001A
									•	SDFD001
Octal 2-to-1 with Storage	3-State	'604		•						SDLD001
								•		SCLD001A
	OC	'605		•						SDLD001
	3-State	'606		•						SDLD001
	OC	'607		•						SDLD001
Dual 4-to-1	2-State	'153	•	•	•					SDLD001
						•	•			SDAD001B
								•		SCLD001A
									•	SDFD001
	3-State	'253		•	•					SDLD001
						•	•			SDAD001B
								•		SCLD001A
									•	SDFD001
	2-State	'352		•						SDLD001
						•	•			SDAD001B
								•		SCLD001A
									•	SDFD001
	3-State	'353		•						SDLD001
						•	•			SDAD001B
								•		SCLD001A
									•	SDFD001

See "How to read Digital Logic Products selection tables" on page 3-4.

Encoders/Data Selectors/Multiplexers (Continued)

DESCRIPTION	OUTPUT	TYPE	TECHNOLOGY							DOCUMENT
			STD TTL	LS	S	ALS	AS	HC	F	
Hex 2-to-1 Universal Multiplexer	3-State	'857				•	•			SDAD001B
8-to-1	2-State	'151	A	•	•					SDLD001
						•	•			SDAD001B
								•		SCLD001A
									•	SDFD001
		'152						•		SCLD001A
	3-State	'251	•	•	•					SDLD001
						•				SDAD001B
								•		SCLD001A
									•	SDFD001
		'354		•						SDLD001
								•		SCLD001A
16-to-1	2-State	'150	•							SDLD001
	3-State	'250					•			SDVD001
		'850					•			SDVD001
		'851					•			SDVD001
Full BCD	2-State	'147	•	•						SDLD001
								•		SCLD001A
Cascadable Octal	2-State	'148	•	•						SDLD001
								•		SCLD001A
	3-State	'348		•						SDLD001

See "How to read Digital Logic Products selection tables" on page 3-4.

Decoders/Demultiplexers

DESCRIPTION	OUTPUT	TYPE	TECHNOLOGY								DOCUMENT
			STD TTL	LS	S	ALS	AS	HC	HCT	F	
Dual 2-to-4	2-State	'239						•			SCLD001A
		'139		A	•						SDLD001
						•					SDAD001A
								•			SCLD001A
		'155	•	A							SDLD001
	OC	'156	•	•							SDLD001
						•					SDAD001B
3-to-8	2-State	'138		•	•						SDLD001
						•	•				SDAD001B
								•	•		SCLD001A
										•	SDFD001
3-to-8	2-State	'237						•	•		SCLD001A
		'238						•	•		SCLD001A
		'131				•	•				SDAD001B
		'137		•							SDLD001
						•	•				SDAD001B
								•	•		SCLD001A
4-to-10 BCD-to-Decimal	2-State	'42	A	•							SDLD001
								•			SCLD001A
4-to-16	3-State	'154	•								SDLD001
						•					SDAD001B
								•			SCLD001A
	OC	'159	•								SDLD001
	2-State	'4514						•			SCLD001A
		'4515						•			SCLD001A

Shifters

DESCRIPTION	OUTPUT	TYPE	TECHNOLOGY								DOCUMENT
			STD TTL	LS	S	ALS	AS	HC	HCT	F	
4-Bit Shifter	3-State	'350								•	SDFD001
Parallel 16-Bit Multimode Barrel Shifter	3-State	'897					A				SDVD001
32-Bit Barrel Shifter	3-State	'8838					•				SDVD001
32-Bit Shuffle/ Exchange	3-State	'8839					•				SDVD001

Open-Collector Display Decoders/Drivers

DESCRIPTION	OFF-STATE OUTPUT VOLTAGE	TYPE	TECHNOLOGY							DOCUMENT
			STD TTL	LS	S	ALS	AS	HC	HCT	
BCD-to-Decimal	30 V	'45	•							SDLD001
	15 V	'145	•	•						SDLD001
BCD-to-7 Segment	30 V	'46	A							SDLD001
	15 V	'47	A	•						SDLD001
		'247		•						SDLD001

See "How to read Digital Logic Products selection tables" on page 3-4.

Open Collector Display Decoder/Drivers with Counters/Latch

DESCRIPTION	TYPE	TECHNOLOGY							DOCUMENT
		STD TTL	L	S	ALS	AS	HC	HCT	
BCD Counter/4-Bit Latch/BCD-to-7-Segment Decoder/ LAD Driver	'143	•							SDLD001

Voltage-Controlled Oscillators

NO. OF VCOs	COMP'L Z_{OUT}	ENABLE	RANGE OUTPUT	R_{EXT}	fmax MHz	TYPE	TECHNOLOGY		DOCUMENT
							LS	S	
Single	No	No	No	No	70	'321	•		SDLD001
Single	Yes	Yes	Yes	No	20	'624	•		SDLD001
Single	Yes	Yes	Yes	Yes	20	'628	•		SDLD001
Dual	No	Yes	Yes	No	60	'124		•	SDLD001
Dual	Yes	No	No	No	20	'625	•		SDLD001
Dual	No	Yes	Yes	No	20	'629	•		SDLD001

Memory/Microprocessor Controllers

DESCRIPTION		TYPE	TECHNOLOGY					DOCUMENT
			LS	ALS	AS	HCT	TMS	
System Controllers, Universal OR for '888		'890			•			SDBS002
Memory Mappers	3-State	'612	•					SDVD001
	OC	'613	•					SDVD001
Memory Mappers with Output Latches	3-State	'610	•					SDVD001
	OC	'611	•					SDVD001
Dynamic Memory Controllers	16K, 64K, 256K	'2967		•				SDVD001
		'2968		•				SDVD001
		'4500					A	SDVD001
		'4502				B		SDVD001
	16K, 64K, 256K, 1 Meg	'6301		•				SDVD001
		'6302		•				SDVD001

Digital Loops

DESCRIPTION	TYPE	TECHNOLOGY							DOCUMENT
		STD TTL	LS	S	ALS	AS	HC	HCT	
Digital Phase-Lock Loop	'297		•						SDLD001

See "How to read Digital Logic Products selection tables" on page 3-4.

COMPARATORS AND ERROR DETECTION CIRCUITS

4-Bit Comparators

DESCRIPTION					TYPE	TECHNOLOGY				DOCUMENT
P=Q	P>Q	$\overline{P>Q}$	OUTPUT	ENABLE		STD TTL	LS	S	HC	
Yes	Yes	No	2-State	No	'85	•	•	•		SDLD001
									•	SCLD001A

8-Bit Identity Comparators

DESCRIPTION								TYPE	TECHNOLOGY							DOCUMENT
INPUT	P=Q	$\overline{P=Q}$	P>Q	$\overline{P>Q}$	P<Q	OUTPUT	ENABLE		LS	ALS	AS	HC	AC	ACT	F	
20KΩ Pull-up	Yes	No	No	No	No	OC	Yes	'518		•						SDAD001B
															•	SDFD001
	No	Yes	No	No	No	2-State	Yes	'520		•						SDAD001B
															•	SDFD001
								'11520					•	•		SCAD001
	No	Yes	No	No	No	OC	Yes	'522		•						SDAD001B
	No	Yes	No	Yes	No	2-State	No	'682	•							SDLD001
												•				SCLD001A
Standard	Yes	No	No	No	No	OC	Yes	'519		•						SDAD001B
															•	SDFD001
	No	Yes	No	No	No	2-State	Yes	'521		•						SDAD001B
															•	SDFD001
								'11521					•	•		SCAD001
	No	Yes	No	Yes	No	2-State	No	'684	•							SDLD001
												•				SCLD001A
	No	Yes	No	No	No	2-State	Yes	'688		•						SDAD001A
									•							SDLD001
												•				SCLD001A
	No	Yes	No	No	No	OC	Yes	'689	•							SDLD001
										•						SDAD001A
Latched P	No	No	Yes	No	Yes	2-State	Yes	'885			•					SDVD001
Latched P and Q	Yes	No	Yes	No	Yes	Latched	Yes	'866			•					SDAD001A

Other Identity Comparators

DESCRIPTION	TYPE	TECHNOLOGY				DOCUMENT
		LS	ALS	AS	HC	
6-Bit Identity Comparator Controlling a 2-to-4-Bit Decoder	'29806		•			SDVD001
9-Bit Identity Comparator	'29809		•			

See "How to read Digital Logic Products selection tables" on page 3-4.

Address Comparators

DESCRIPTION	OUTPUT ENABLE	LATCHED ENABLE	TYPE	TECHNOLOGY					DOCUMENT
				S	ALS	AS	HC	HCT	
16-Bit	Yes		'677		•				SDAD001B
							•		SCLD001A
		Yes	'678		•				SDAD001B
							•		SCLD001A
12-Bit	Yes		'679		•				SDAD001B
							•		SCLD001A
		Yes	'680		•				SDAD001B
							•		SCLD001A

Parity Generators/Checkers, Error Detection and Correction Circuits

DESCRIPTION		NO. OF BITS	TYPE	TECHNOLOGY							DOCUMENT
				STD TTL	LS	S	ALS	AS	HC	F	
Odd/Even Parity Generators/Checkers		9	'180	•							SDLD001
									•		SCLD001A
		9	'280		•	•					SDLD001
									•		SCLD001A
							•	•			SDVD001
										•	SDFD001
		9	'286					•			SDAD001B
Error Detection and Correction Circuits	3-State	16	'616				•				SDVD001
	3-State	16	'630		•						SDLD001
	OC	16	'631		•						SDLD001
	3-State	32	'632				B	•			SDVD001
	OC	32	'633				▲				SDVD001
	3-State	32	'634				A	▲			SDVD001
	OC	32	'635				▲				SDVD001

Fuse-Programmable Comparators

DESCRIPTION	TYPE	TECHNOLOGY							DOCUMENT
		STD TTL	LS	S	ALS	AS	HC	HCT	
16-Bit Identity Comparator	'526				•				SDAD001B
12-Bit Identity Comparator	'528				•				SDAD001B
12-Bit Identity Comparator Controlling a 2-to-4 Bit Decoder	'812				•				SDVD001
8-Bit Identity Comparator and 4-Bit Comparator	'527				•				SDAD001B

See "How to read Digital Logic Products selection tables" on page 3-4.

Parallel Binary Adders

DESCRIPTION	TYPE	TECHNOLOGY							DOCUMENT
		STD TTL	LS	S	ALS	AS	HC	F	
4-Bit	'83	•	•						SDLD001
	'283	•	•	•					SDLD001
							•		SCLD001A
								•	SDFD001

Accumulators, Arithmetic Logic Units, Look-Ahead Carry Generators

DESCRIPTION		TYPE	TECHNOLOGY									DOCUMENT
			STD TTL	LS	S	ALS	AS	HCT	AC	ACT	F	
4-Bit Parallel Binary Accumulators		'681		•								SDLD001
16-Bit by 16-Bit Multiplier/Accumulators		'1010						•				SDVD001
										•		SCSS003B
4-Bit Arithmetic Logic Units:		'181		•	•							SDLD001
							B					SDAD001B
Function Generators		'11181							•	•		SCAD001
		'1181					•					SDVD001
		'381		A	•							SDLD001
											•	SDFD001
		'881					A					SDVD001
		'11881								•		SCAD001
4-Bit Arithmetic Logic Unit with Ripple Carry		'382		•							•	SDLD001
Look Ahead Carry Generators	16-Bit	'182			•							SDLD001
							▲					SDAD001B
		'282					▲					SDAD001B
	32-Bit	'882					A					SDAD001B
		'11882							•	•		SCAD001

See "How to read Digital Logic Products selection tables" on page 3-4.

Standard High-Speed PAL® Circuits (ALS)

TYPE	INPUTS	OUTPUTS		NO. OF PINS	PACKAGES	DOCUMENT
		NO.	TYPE			
PAL16L8A	16	8	Active Low	20	FK,FN,J,N	SDZD001B
PAL16R4A	16	4	Registered			
PAL16R6A	16	6	Registered			
PAL16R8A	16	8	Registered			
PAL16R6A-2	16	8	Active Low			
PAL16R4A-2	16	4	Registered			
PAL16R6A-2	16	6	Registered			
PAL16R8A-2	16	8	Registered			
PAL20L8A	20	8	Active Low	24	FK,FN,JT,NT	SDZD001B
PAL20R4A	20	4	Registered			
PAL20R6A	20	6	Registered			
PAL20R8A	20	8	Registered			
PAL20L8A-2	20	8	Active Low			
PAL20R4A-2	20	4	Registered			
PAL20R6A-2	20	6	Registered			
PAL20R8A-2	20	8	Registered			

High Performance PAL® Circuits (ALS)

TYPE	INPUTS	OUTPUTS		NO. OF PINS	PACKAGES	DOCUMENT
		NO.	TYPE			
TIBPAL16L8-10	16	8	Active High	20	FK,FN,J,N	SDZD001B
TIBPAL16R4-10	16	4	Registered			
TIBPAL16R6-10	16	6	Registered			
TIBPAL16R8-10	16	8	Registered			
TIBPAL16L8-12	16	8	Active High			
TIBPAL16R4-12	16	4	Registered			
TIBPAL16R6-12	16	6	Registered			
TIBPAL16R8-12	16	8	Registered			
TIBPAL16H8-15	16	8	Active High	20	FK,FN,J,N	TBA
TIBPAL16HD8-15	16	8	Active High			
TIBPAL16L8-15	16	8	Active Low	20	FK,FN,J,N	SDZD001B
TIBPAL16LD8-15	16	8	Active Low	20	FK,FN,J,N	TBA
TIBPAL16R4-15	16	4	Registered	20	FK,FN,J,N	SDZD001B
TIBPAL16R6-15	16	6	Registered			
TIBPAL16R8-15	16	8	Registered			
TIBPAL16H8-25	16	8	Active High	20	FK,FN,J,N	TBA
TIBPAL16HD8-25	16	8	Active High			
TIBPAL16L8-25	16	8	Active Low	20	FK,FN,J,N	SDZD001B
TIBPAL16LD8-25	16	8	Active Low	20	FK,FN,J,N	TBA
TIBPAL16R4-25	16	4	Registered	20	FK,FN,J,N	SDZD001B
TIBPAL16R6-25	16	6	Registered			
TIBPAL16R8-25	16	8	Registered			
TIBPAL16L8-30	16	8	Active Low			
TIBPAL16R4-30	16	4	Registered			
TIBPAL16R6-30	16	6	Registered			
TIBPAL16R8-30	16	8	Registered			
TIBPAL20L8-15	20	8	Active Low	24	FK,FN,JT,NT	SDZD001B
TIBPAL20R4-15	20	4	Registered			
TIBPAL20R6-15	20	6	Registered			
TIBPAL20R8-15	20	8	Registered			
TIBPAL20L8-25	20	8	Active Low			
TIBPAL20R4-25	20	4	Registered			
TIBPAL20R6-25	20	6	Registered			
TIBPAL20R8-25	20	8	Registered			
TIBPAL20L10-20	20	10	Active Low			
TIBPAL20X4-20	20	4	Registered			
TIBPAL20X8-20	20	8	Registered			
TIBPAL20X10-20	20	10	Registered			
TIBPAL20L10-30	20	10	Active Low	24	FK,FN,JT,NT	TBA
TIBPAL20X4-30	20	4	Registered			
TIBPAL20X8-30	20	8	Registered			
TIBPAL20X10-30	20	10	Registered			

High Performance PAL® Circuits (ALS) (Continued)

TYPE	INPUTS	OUTPUTS		NO. OF PINS	PACKAGES	DOCUMENT
		NO.	TYPE			
TIBPALR19L8	19	8	Active Low	24	FK,FN,JT,NT	SDZD001B
TIBPALR19R4	19	4	Registered			
TIBPALR19R6	19	6	Registered			
TIBPALR19R8	19	8	Registered			
TIBPALT19L8	19	8	Active Low			
TIBPALT19R4	19	4	Registered			
TIBPALT19R6	19	6	Registered			
TIBPALT19R8	19	8	Registered			

High Performance CMOS PAL® Circuits

TYPE	INPUTS	OUTPUTS		NO. OF PINS	PACKAGES	DOCUMENT
		NO.	TYPE			
TICPAL16L8-55	16	8	Active High	20	JL,N	TBA
TICPAL16R4-55	16	4	Registered			
TICPAL16R6-55	16	6	Registered			
TICPAL16R8-55	16	8	Registered			

High Performance IMPACT™ Programmable Array Logic

TYPE	INPUTS	OUTPUTS		NO. OF PINS	PACKAGES	DOCUMENT
		NO.	TYPE			
TIBPAL22V10	12 Inputs or 11 Inputs with CLK	10	I/O	24	NT,FN	SDPS015
TIBPAL22V10A						
TIBPAL22VP10-20	12 Inputs or 11 Inputs with CLK	10	I/O	24	NT,FN	SDPS106

Field Programmable Logic Array (ALS)

TYPE	INPUTS	OUTPUTS		NO. OF PINS	ARRAY	PACKAGES	DOCUMENT
		NO.	TYPE				
TIFPLA839	14	6	3-State	24	14×32×6	FK,FN,N,NT	SDZD001A
TIFPLA840	14	6	OC				
TIB82S167B	14	6	3-State	24	14×48×6		
82S167A	14	6	3-State				
TIB82S105B	16	8	3-State	28	14×48×6	FK,FN,JD,N	
82S105A	16	8	3-State				

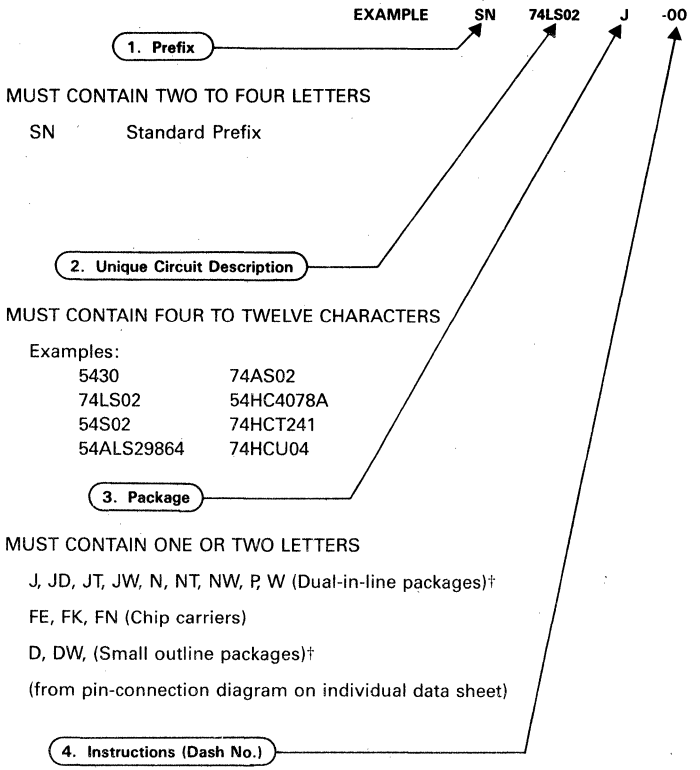
VLSI 8-BIT-SLICE PROCESSOR FAMILY

A complete discussion of the VLSI 8-Bit-Slice Processor Family will be found in Section 4, Processors and Controllers, of this Guide.

VLSI 32-BIT FAMILY

A complete discussion of the VLSI 32-Bit Family
will be found in Section 4, Processors and Controllers, of this Guide.

Factory orders for circuits described in this guide should include a four-part type number as explained in the following example.



MUST CONTAIN TWO NUMBERS

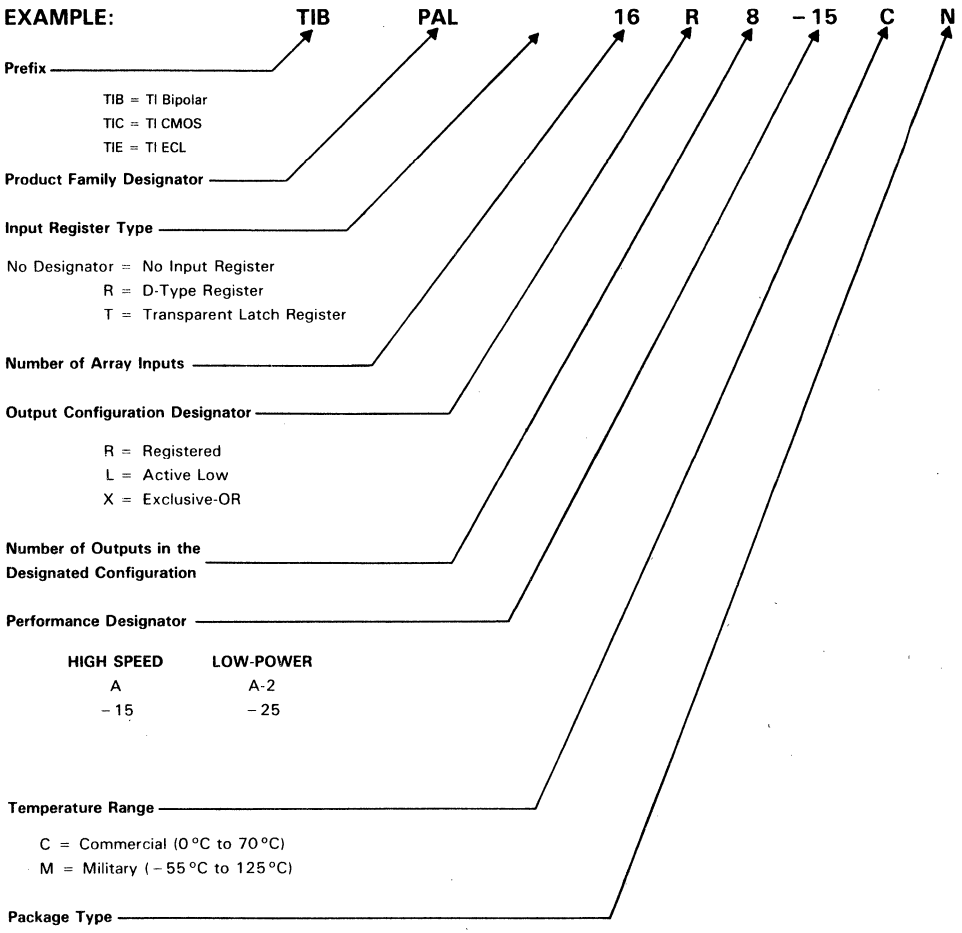
— 00 No Special instructions
— 10 Solder-dipped leads (N and NT packages only)
— T Tape and Reel (D and DW packages only)

† These circuits in dual-in-line and small outline packages are shipped in one of the carriers shown below. Unless a specific method of shipment is specified by the customer (with possible additional costs), circuits will be shipped in the most practical carrier. Please contact your TI sales representative for the method that will best suit your particular needs.

Dual-in-line (J, JD, JT, JW, N, NT, NW, P, W)
Small outline (D, DW)
Chip Carrier (FK, FN)

— Slide Magazines
— A-Channel Plastic Tubing
— Barnes Carrier (N only)
— Sectioned Cardboard Box
— Individual Plastic Box
— Tape and Reel (D and DW packages only)

Factory orders for leadership PAL® circuits described in this guide should include a nine-part type number as explained in the example below. Exclude the prefix when ordering standard PALs.



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PROCESSORS AND CONTROLLERS

TI processors and controllers are designed to meet a wide range of applications. For digital signal processing requirements there is the TMS320 family; for graphics, the TMS340 family; and for local area networking, the TMS380 family. For general purpose control in telecommunications, automotive and computer peripherals, TI offers its 8-bit TMS7000 family. When ultra high performance is called for, designers can turn to TI's 'AS888 8-bit processor slice and complementing components or the 'ACT88XX 32-bit processor chip set.

Along with this variety of processors and controllers, TI offers a range of memory support, including the 'ALS2967/2968 and 'ALS6301/6302 Dynamic RAM controllers and the TACT2150 Cache Address Comparator. All these controllers are available directly from TI or an authorized distributor.

TI's microprocessors and controllers utilize processing benefits gained from TI's Dynamic Random-Access Memory (DRAM) technology. For instance, the TMS320C250DSP, TMS34010 Graphics Processor and TMS380 LAN family, all draw from technology derived from 256K and one megabit DRAM processing. All TI processors and controllers also undergo rigorous quality and reliability testing.

Readers should refer to the Catalog Products Alphanumeric Index in Section 1, and to Section 12 of the Master Selection Guide for additional information on technical documentation.

Contents **Page**

Application Processors 4-3
TMS320 Digital Signal Processor (DSP) Family 4-5
First Generation — TMS32010, TMS32010-25, TMS32010-14, TMS320C10, TMS320C10-25, TMS32011, TMS320C15, TMS320C15-25, TMS320E15, TMS320C17, TMS320C17-25, TMS320E17 4-5
Second Generation — TMS32020, TMS320C25 4-5
Third Generation — TMS320C30 4-5
Development Support 4-6
TMS340 Graphics Family 4-8
TMS34010 Graphics System Processor 4-9
TMS34061 Video System Controller 4-11
TMS34070 Color Palette 4-13
TMS340 Family Hardware and Software Support 4-14
TMS34010 Development Software 4-18
TMS380 LAN Adapter Chipset 4-20
TMS38030 System Interface 4-21
TMS38010 Communications Processor 4-21
TMS38020 Protocol Handler 4-21
TMS38051 and TMS38052 Ring Interface 4-21
ASIC-LAN Tool Kit 4-23
IEEE 820.2 Logical Link Control 4-23
TMS380 Customer Support 4-24

TMS7000 Family — 8-Bit Microcomputers 4-27
TMS7000 Family — TMS70C00A, TMS70C20A, TMS70C40A, TMS70C02, TMS70C42, TMS77C82 4-28
TMS7000 Development Systems 4-28
TMS7000 Prototyping Devices — TMS77C82 EPROM Devices 4-29
SE70CP160 and SE70CP162 Piggyback Devices 4-30
High Performance VLSI Processors 4-31
VLSI 8-Bit-Slice Family 4-31
SN54/74AS887 8-Bit Processors 4-31
SN54/74AS888 8-Bit Processor Slices 4-33
SN54/74AS890 Microsequencers 4-35
SN54/74AS895 8-Bit Memory Address Generators 4-36
SN54/74AS897A 16-Bit Parallel/Serial Barrel Shifters 4-38
74AS-EVM-8-Bit-Slice Evaluation Module 4-40
VLSI 32-Bit Family 4-42
Introduction and Technology 4-42
SN74ACT8832 Registered ALU 4-44
SN74ACT8818 Microsequencer 4-46
SN74ACT8836 Integer Multiplier 4-48
SN74ACT8837 Floating Point Processor 4-50
SN74AS8833 Funnel Shifter 4-52
SN74AS8838 Barrel Shifter 4-54
SN74AS8834 Register File 4-55
SN74AS8839 Shuffle/Exchange Network 4-57
SN74AS8840 Digital Crossbar Switch 4-59
Controllers 4-61
'TACT2150 Cache Address Comparator 4-61
'ALS2967 and 'ALS2968 Dynamic RAM Controllers 4-63
'ALS6301 and 'ALS6302 Dynamic RAM Controllers 4-65

TMS320 Family of Digital Signal Processors

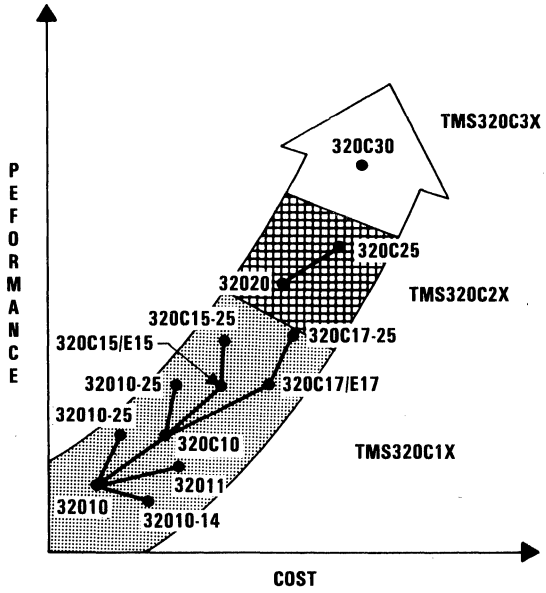


Figure 1. TMS320 DSP Application Processors

The TMS320 family of 16/32-bit single-chip digital signal processors (DSP) utilizes a Harvard-type architecture for increased parallelism and higher throughput. These economical, programmable, general purpose DSPs combine the flexibility of a high-speed controller with the numeric capability of an array processor, offering an inexpensive alternative to custom VLSI and multichip bit-slice processors.

The TMS320 digital signal processor family provides a wide range of devices to satisfy every cost/performance need. Three generations of compatible devices offer DSP solutions for application requirements ranging from very low cost ($5) to very high performance (33 MFLOPS).

The three generations of the TMS320 family are:

- TMS320C1X (1st-gen.) — TMS32010, TMS32010-14, TMS32010-25
  — TMS32011
  — TMS320C10, TMS320C10-25
  — TMS320C15, TMS320C15-25
  — TMS320E15
  — TMS320C17, TMS320C17-25
  — TMS320E17
- TMS320C2X (2nd-gen.) — TMS32020
  — TMS320C25
- TMS320C3X (3rd-gen.) — TMS320C30

Table 1. TMS320 Family Benefits

PACKAGE	PERFORMANCE	SYSTEM COST	EASE OF USE
TMS320C1X	• 20- and 25-MHz versions • Expanded 256-word on-chip RAM • Secure ROM/EPROM • H/W multiplier and barrel shifter • Harvard architecture	• Expanded 4K-word on-chip ROM • Serial port and co-processor interface	• 4K-word EPROM version • Flexible, general-purpose instruction set and addressing modes • Complete line of support tools
TMS320C2X	• Cycle times as fast as 10-ns (10 MIPS) • 128K-word program/data space accessible at full speed • On-chip data RAM up to 544 16-bit words • H/W multiplier and barrel shifter • Harvard architecture	• On-chip program ROM up to 4K 16-bit words • Serial port, timer, multiprocessor I/F	• Flexible general purpose instruction set and addressing modes • Complete line of support tools • High-level language supported
TMS320C3X	• 60-ns single-cycle execution time (more than 33 MFLOPS) • 2K × 32-bit dual-access RAM • 4K × 32-bit dual-access ROM • 64 × 32-bit instruction cache • Single-cycle floating point multiply/accumulate • On-chip DMA controller • Zero-overhead loops and single-cycle branches	• On-chip serial ports and timers • Large on-chip memories, instruction cache, and DMA controller • Peripheral bus for customization	• Floating-point, integer and logical 32/40-bit ALU • 16-megaword memory space • Register-based CPU • Flexible, general-purpose instruction set and addressing modes • Complete line of support tools • High-level language supported

APPLICATIONS

The TMS320 DSP applications are as varied as:

- Telecommunications
- Graphics/image processing
- Instrumentation
- Automotive
- Military
- Voice/speech processing
- Control systems
- Consumer goods
- Medical

THE TMS320 DIGITAL SIGNAL PROCESSING FAMILY

The TMS320 DSP family currently consists of fifteen compatible high-speed digital signal processors. The devices are designed to increase DSP system performance while reducing total system cost.

TMS320 DSP FAMILY

	FIRST GENERATION (TMS320C1X)							SECOND-GEN. (TMS320C2X)		THIRD-GEN. (TMS320C3X)
	TMS32010 TMS32010-25 TMS32010-14	TMS320C10 TMS320C10-25	TMS32011	TMS320C15 TMS320C15-25	TMS320E15	TMS320C17 TMS320C17-25	TMS320E17	TMS32020	TMS320C25	TMS320C30*
Data Type 16-Bit Integer 32-Bit Integer or Floating Pt.	 Yes —	 Yes —	 Yes —	 Yes —	 Yes —	 Yes —	 Yes —	 Yes —	 Yes —	 Yes Yes
On-Chip (Word) RAM ROM EPROM CACHE	 144 1.5K — —	 144 1.5K — —	 144 1.5K — —	 256 4K — —	 256 — 4K —	 256 4K — —	 256 — 4K —	 544 0 0 —	 544 4K — —	 2K 4K — 64
Total Memory Space	4K	4K	1.5K	4K	4K	4K	4K	128K	128K	16M
I/O (# Ports) Parallel Serial DMA	 8 × 16 0 —	 8 × 16 0 —	 6 × 16 2 —	 8 × 16 0 —	 8 × 16 0 —	 6 × 16 2 —	 6 × 16 2 —	 16 × 16 1 External	 16 × 16 1 External	 8K × 32 2 Internal/ External
No. of Ext. Interrupts	1	1	1	1	1	1	1	3	3	4
Timer	0	0	1	0	0	1	1	1	1	2
Coprocessor Interface	—	—	—	—	—	Yes	Yes	—	—	—
Multiprocessor Interface	—	—	—	—	—	—	—	Yes	Yes	Yes
No. Auxiliary Registers Stack Level	 2 4	 2 4	 2 4	 2 4	 2 4	 2 4	 2 4	 5 4	 8 8	 8 Unlimited
Instructions	60	60	60	60	60	60	60	109	133	112
Repeat Counter	—	—	—	—	—	—	—	Yes	Yes	Yes (block repeats)
Cycle Time (ns)	200 160 280	200 160	200	200 160	200	200 160	200	200	100	60
Multiply/Accumulate (ns)	400 320 560	400 320	400	400 320	400	400 320	400	200	100	60
External Clock Freq. (MHz)	20.5 25.6 14.4	20.5 25.6	20.5	20.5 25.6	20.5	20.5 25.6	20.5	20.5	40	33
Operating Voltage	5	5	5	5	5	5	5	5	5	5
Power Dissipation (mW) @ 5 Volts (Typ)	900 900 900	165 200	900	225 250	300	250 275	325	1200	625	1000
Technology	NMOS	CMOS	NMOS	CMOS	CMOS	CMOS	CMOS	NMOS	CMOS	CMOS
Package Type DIP GB FN	 40-Pin	 40-Pin 44-Pin	 40-Pin	 40-Pin 44-Pin	 40-Pin	 40-Pin 44-Pin	 40-Pin	 68-Pin	 68-Pin 68-Pin	 176-Pin
SMJ Military	Yes — —	Yes —	—	Planned —	—	— —	—	Yes	Yes	Planned

*In development. Contact nearest TI sales office for more information and availability.

Other TMS320 family devices include applications oriented devices such as the TMS320SA32 32-kbit/sec ADPCM Transcoder (TMS320C1X-based), and the DSP2400 V.22 bis Modem Chip set (also TMS320C1X-based). The DSP2400 Modem Chip set consists of two devices, the TMS320A2400 DSP and the TMS70A2400 controller devices.

TMS320 FAMILY DEVELOPMENT SUPPORT

Texas Instruments offers an extensive line of support products and documentation to assist the user in all aspects of TMS320 design and development. TMS320 S/W development products include:

- C compilers
- Simulators
- Assembler/linkers
- Application software library
- PC-resident S/W development system (SWDS) for realtime S/W simulation.

TMS320 hardware development products include:

- Evaluation modules (EVM)
- Analog interface board (AIB)
- Full in-circuit emulators (XDS).

A prototype kit is available for evaluation of the DSP2400 modem chip set, and the TMS320 Design Kit is available to aid users in becoming familiar with the TMS320 family. Development support is also available from over 90 third-parties and consultants.

Extensive documentation, including over 700 pages of application reports, newsletters, product bulletins, user's guides and textbooks, is available to support DSP design, research, and education. The TMS320 University program offers assistance to universities in setting up DSP courses and research facilities. TMS320 application assistance is available through the TMS320 hotline (713-274-2320) and bulletin board service (713-272-2323).

TIs Regional Technology Centers (RTC) offer half-day seminars and hands-on workshops on the TMS320 DSPs and development support tools. Three-day hands-on workshops assist users in the development of TMS320-based designs. A half-day seminar provides a quick overview of the TMS320 family.

Table 2 lists TI's TMS320 development tools. Consult the TMS320 Family Development Support Reference Guide (SPRU011) for more detailed information on TMS320 support. Call the nearest TI Field Sales Office for information on price and availability.

Table 2. TMS320 Development Support Tools

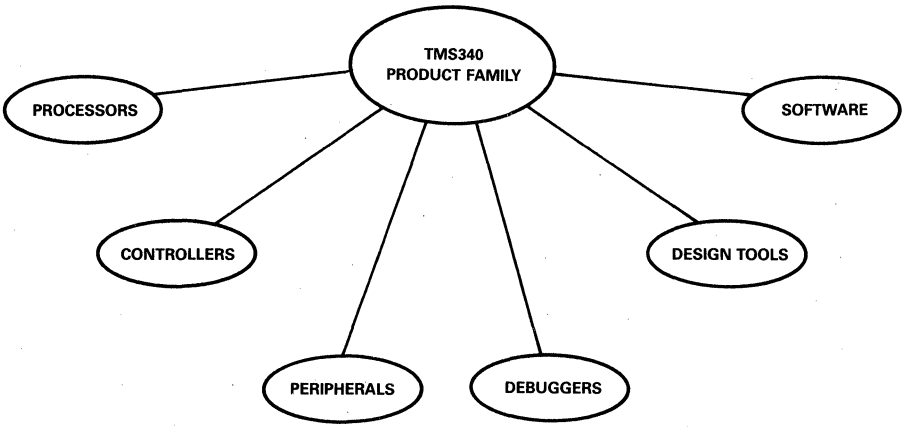
	TMS320C1X 1st-GENERATION	TMS320C2X 2nd-GENERATION	TMS320C1X/C2X FAMILY MEMBERS
HARDWARE			
Evaluation Module (EVM)	RTC/EVM320A-03	TMDS3268822	
XDS/22 Emulator	TMDS3262211	TMDS3262221	
XDS/22 Upgrade Factory Upgrade Customer Upgrade	 TMDS3282215 TMDS3282216	 TMDS3282225 TMDS3282226	
XDS/11 Upgrade Factory Upgrade Customer Upgrade		 TMDS3281125 TMDS3281126	
Analog Interface Board (AIB)			RTC/EVM320C-06
Programmer Adaptor Socket	RTC/PGM320A-06		
Socket AIB Adapter		RTC/ADP320A-06	
TMS320E15 Starter Kit	RTC/EVM320E-15		
DSP2400 Prototype Kit			TMDSP2400PK
TMS320 Design Kit			TMS320DDK
SOFTWARE			
Assembler/Linker VAX VMS PC/MS-DOS	 TMDS3240210-08 TMDS3240810-02	 TMDS3242210-08 TMDS3242810-02	
Simulator VAX VMS PC/MS-DOS	 TMDS3240211 TMDS3240811-02	 TMDS3242211-08 TMDS3242811-02	
C Compiler VAX VMS PC/MS-DOS		 TMDS3242255-08 TMDS3242855-02	
Software Development System PC/MS-DOS		TMDS3268821	
Digital Filter Design Package (DFDP) PC/MS-DOS			 DFDP-IBM002
DSP Software Library VAX VMS PC/MS-DOS			 TMDS3240212-18 TMDS3240812-12

Note: Contact your local TI Field Sales Office for part numbers and availability of TMS320 Third-generation development tools.
MS-DOS® is a registered trademark of Microsoft Corporation.
VAX® and VMS® are registered trademarks of Digital Equipment Corporation.
IBM PC® is a registered trademark of International Business Machines Corporation.

TMS340 Graphics Family

INTRODUCTION

The TMS340 Graphics Product Family offers the broadest range of Graphics-Specific ICs in the industry. TMS340 products satisfy the needs of a wide range of graphics applications with the TMS34010 Graphics System Processor and the TMS34061 Video System Controller. The availability of peripherals like the TMS34070 Color Palette, a complete range of video memory options, and extensive development support tools round out the TMS340 Product Family making TI the undisputed leader in graphics.



TMS340 Product Family

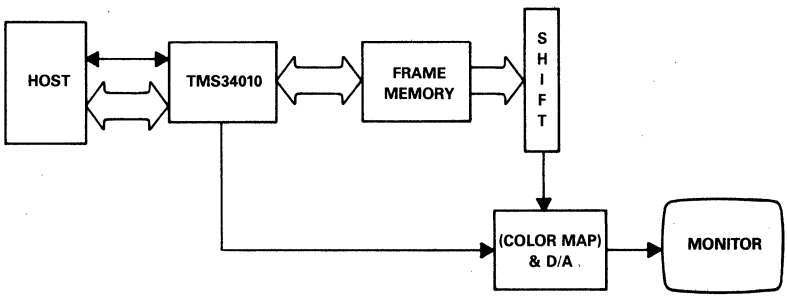
TMS34010 Graphics System Processor

DESCRIPTION

The TMS34010 Graphics System Processor (GSP) is an advanced high-performance CMOS 32-bit microprocessor optimized for graphics display systems. With a built-in instruction cache, the ability to make simultaneous access to memory and registers, and an instruction set designed specifically for raster graphics operation, the TMS34010 provides user-programmable control of the CRT interface as well as the memory interface (both standard DRAM and Multiport Video RAM). The 1-gigabit address space is completely bit-addressable on bit boundaries using variable width data fields (1- to 32-bits). Additional graphics addressing modes support up to 32-bit wide pixels. The TMS34010 is exceptionally well-supported by graphics software interface standards such as CGI/VDI and a full line of hardware and software support tools.

KEY FEATURES

- 160-ns Instruction Cycle Time
- Fully Programmable 32-Bit General Purpose Processor with 128-Megabyte Address Range
- Pixel Processing, X-Y Addressing, and Window Clip/Pick Built into the Instruction Set
- Programmable Pixel Size with 16 Boolean and 6 Arithmetic Pixel Processing Options (Raster-Ops)
- 31 General Purpose 32-bit Registers
- 256-Byte LRU On-Chip Instruction Cache
- Direct Interfacing to Both Conventional DRAM and Multiport Video RAM
- Dedicated 8-/16-Bit Host Processor Interface and HOLD/HLDA Interface
- Programmable CRT Control (HSYNC, VSYNC, BLANK)
- High-Level Language Support
- Full Line of Hardware and Software Development Tools including a "C" Compiler
- 68-Leaded Packaging (PLCC)
- 5-Volt CMOS Technology



Typical TMS34010 System Block Diagram

The TMS34010 is a CMOS 32-bit processor with hardware support for graphics operations such as PixBlts (raster ops) and curve-drawing algorithms. Also included is a complete set of general purpose instructions with addressing tuned to support high-level languages. In addition to its ability to address a large external memory, the TMS34010 contains 30 general purpose 32-bit registers, a hardware stack pointer and a 256-

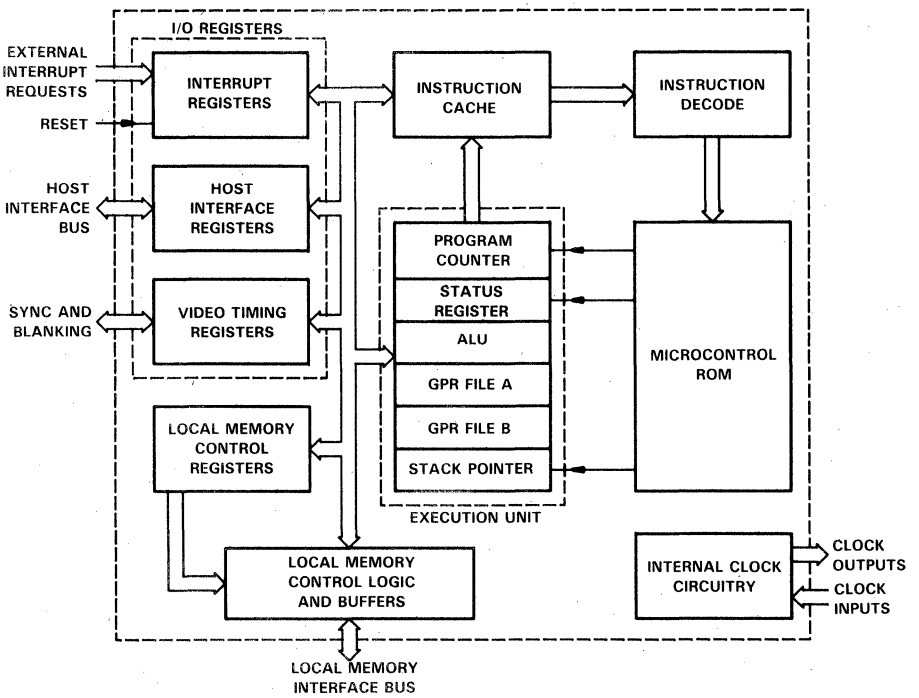
byte instruction cache. On-chip functions include 28 programmable registers that contain CRT control, input/output control, and instruction parameters. The TMS34010 directly interfaces to dynamic RAMs and Video RAMs and generates video monitor control signals. It also accommodates a conventional HOLD/HLDA shared access as well as a separate, generalized interface for communicating with any standard host processor.

The TMS34010 has been constructed to provide single-cycle execution of most common integer arithmetic and Boolean operations from its instruction cache. Additionally, the TMS34010 incorporates a hardware barrel shifter that provides a single-cycle bidirectional shift and rotate function for 1- to 32-bits.

A microcoded local memory controller supports pipelined memory write operations of variable-size fields that may be executed in parallel with subsequent instruction execution.

TMS34010 graphics processing hardware supports pixel and pixel-array processing capability for both monochrome and color systems of variable pixel sizes. The hardware incorporates two-operand raster operations with Boolean and arithmetic operations, X-Y addressing, window clipping, window "pick" operations, one to n bits per pixel transforms, transparency, and plane "masking." The architecture further supports operations on single pixels (PixT instructions) or on two-dimensional pixel arrays of arbitrary size (PixBlts).

The TMS34010's flexible graphics processing capability allows software-based graphics algorithms without sacrificing performance. These algorithms include: arbitrary window shapes, custom DDAs (Digital Differential Analyzers), and three operand raster operations.



TMS34010 Internal Architecture

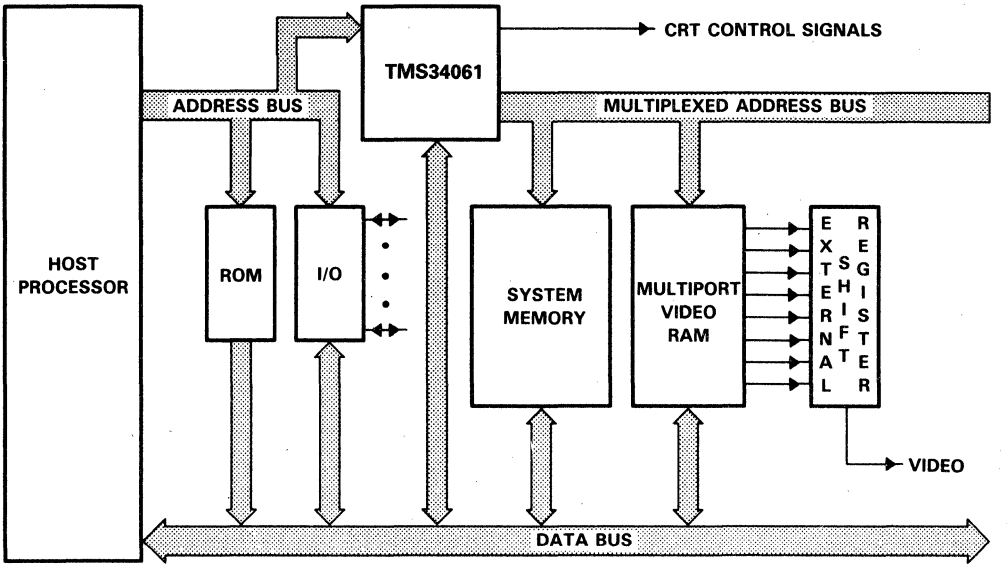
TMS34061 Video System Controller

The TMS34061 Video System Controller (VSC) is a high-performance NMOS device that controls the video display and the dynamic memory of a bit-mapped graphics system. Although primarily designed to provide control of Multiport Video RAMs (VRAMs), such as the TMS4161 and TMS4461 (see Section 10). The VSC is also compatible with conventional 64K and 256K DRAMs and easily configures to a variety of CPUs. The sync and blanking signals necessary to interface to a raster-scan CRT display are generated by the VSC, which is the only controller currently available that combines VRAM, DRAM, and CRT control on a single chip.

The principle role of the VSC is to provide an external processor with virtually unlimited access to video memory, eliminating delays caused by conflicts with display update functions. Using the VSC, the system CPU is relieved of the burden of controlling the system memory, refreshing video memory, and reloading VRAM internal shift registers for bit-mapped displays. The VSC supports a broad range of raster-scan display systems with various resolutions and scan rates.

KEY FUNCTIONS

- Generates all control signals necessary to control VRAM devices, as well as those necessary to control conventional 64K and 256K DRAMs.
- Generates the video synchronization and blanking signals necessary to control a CRT monitor.
- Accommodates processor date paths of arbitrary width. The VSC works equally well with 8-, 16-, 20-, and 32-bit processors.
- Supports both interlaced and non-interlaced displays of essentially any display resolution (from 256 to greater than 4096 pixels per line).
- Automatically generates the special display-update cycles required by VRAM memories to maintain the CRT display.
- X-Y indirect addressing improves the performance of graphics primitives as well as supporting host processors with limited addressing range.
- Automatically performs periodic DRAM refresh cycles necessary to maintain data stored in the VRAMs, as well as in conventional 64K and 256K DRAMs.
- Universally programmable interface and READY/WAIT logic provides for efficient communication with all leading microprocessors as well as high-speed bit-slice processors.



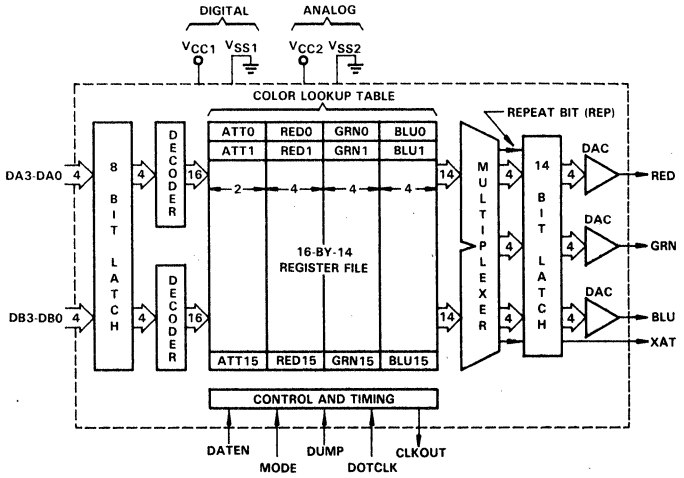
Typical TMS34061 System Block Diagram

TMS34070 Color Palette

The TMS34070 Color Palette is a monolithic integrated circuit containing a color lookup table and providing three channels of analog video output for RGB-type CRT monitors operating at frequencies up to 66 MHz. This corresponds to a display resolution of about 1024 by 760 pixels, assuming a non-interlaced display refreshed at 60 Hz. The TMS34070 supports graphics systems having up to four color planes and allows 16 of 4096 different colors per line to be displayed simultaneously on the CRT monitor.

KEY FEATURES

- Three 4-bit Video-DAC outputs are capable of directly driving 75-Ω monitor cables.
- Sixteen 14-bit color lookup registers support the simultaneous display of a palette of 16 colors selected from an available 4096 colors.
- Color lookup table can be automatically loaded with a new set of colors prior to the start of each horizontal scan line without processor intervention.
- Device is versatile and can be used with a variety of controllers and memory types.
- Real-time animation is supported by the REP attribute bit, which facilitates rapid rendering of scenes composed of polygons of various solid colors.
- Video overlay capability is supported by the EXT attribute bit, which is used to control external circuitry.
- Internal pipelining makes possible shorter setup and hold times at the digital data inputs and faster transitions at the analog outputs.
- Worst-case transition time for the Video-DAC outputs is 10 ns.
- Internal multiplexing permits digital data to be input at half the rate at which analog data is output at the Video-DAC pins allowing inexpensive TTL shift registers to be used.
- Analog RGB video data is output from the Video-DAC pins at dot frequencies up to 66 MHz.
- Digital input and output logic levels are TTL-compatible.
- Separate 5-volt power supply pins are provided for digital and analog functions.
- Device is available in a 22-pin, 400-mil plastic dual-in-line package.



TMS34070 Block Diagram

TMS340 Family Hardware and Software Support

A full range of hardware and software development tools are available for TI's new TMS34010 graphics processor. Key tools are based on IBM PC®, TI Professional, or VAX™ computers. TI's Regional Technology Centers can provide additional support.

TMS340 FAMILY SILICON:

▪ GRAPHICS SYSTEM PROCESSOR (40 MHz)	TMS34010FNL-40
▪ GRAPHICS SYSTEM PROCESSOR (50 MHz)	TMS34010FNL-50
▪ VIDEO SYSTEM CONTROLLER (10 MHz)	TMS34061FNL
▪ VIDEO SYSTEM CONTROLLER (12.5 MHz)	TMS34061FNL-12
▪ COLOR PALETTE (20 MHz)	TMS34070NL-20
▪ COLOR PALETTE (36 MHz)	TMS34070NL
▪ COLOR PALETTE (66 MHz)	TMS34070NL-66

TMS340 FAMILY HARDWARE TOOLS:

▪ TMS34010 XDS-22 REAL-TIME EMULATOR (U.S.)	TMDS3469910000
▪ TMS34010 XDS-22 REAL-TIME EMULATOR (EUROPE)	TMDS3469981000
▪ TMS34061 COLOR GRAPHICS CONTROLLER BOARD	TMDS3471804000
▪ TMS34010 SOFTWARE DEVELOPMENT BOARD	TMDS3411804420
▪ TMS340 GRAPHICS DESIGN KIT	TMS340GDK
▪ TMS34010 GRAPHICS DESIGN KIT	TMS34010GDK

TMS34010 PC SOFTWARE TOOLS:

▪ ASSEMBLER PACKAGE, MS-DOS 2.11 +	TMDS3440808002
▪ 'C' COMPILER PACKAGE, MS-DOS 2.11 +	TMDS3440805002
▪ GRAPHICS/MATH FUNCTION LIBRARY	TMDS3440802202
▪ FONT LIBRARY	TMDS3440802302
▪ DEBUGGER DEVELOPMENT PACKAGE (FOR INTERNAL USE)	TMDS3440806002
▪ DEBUGGER DEVELOPMENT PACKAGE (FOR RESALE)	TMDS3440806003

TMS34010 VAX SOFTWARE TOOLS:

▪ ASSEMBLER PACKAGE, VMS™	TMDS3440200059
▪ ASSEMBLER PACKAGE, DEC ULTRIX™	TMDS3440200069
▪ ASSEMBLER PACKAGE, UNIX SYSTEM V	TMDS3440200089
▪ 'C' COMPILER PACKAGE, VMS	TMDS3440205059
▪ 'C' COMPILER PACKAGE, DEC ULTRIX	TMDS3440205069
▪ 'C' COMPILER PACKAGE, UNIX SYSTEM V	TMDS3440205089
▪ GRAPHICS/MATH FUNCTION LIBRARY	TMDS3440202208
▪ FONT LIBRARY	TMDS3440202308

TMS34010 XDS/22 Emulator

KEY FEATURES

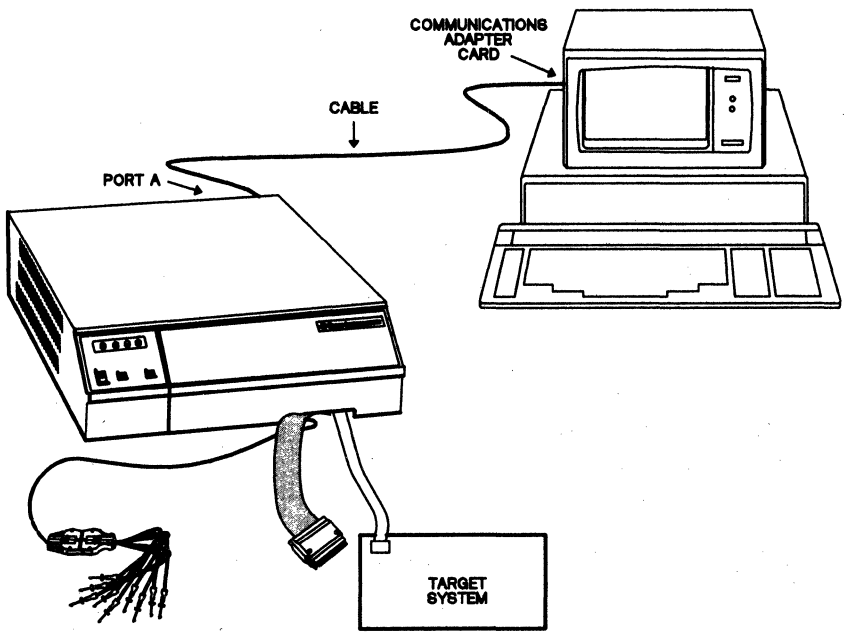
Stand-Alone Terminal

- Full-speed in-circuit emulation
- Host independent
- Full-speed hardware trace
- Multimode hardware single step/breakpoint

PC Debugger Software

- Powerful debug environment:
  - Run/stop/single step
  - Set breakpoint/trace
  - Environment save/restore
  - Machine state manipulation
  - Reverse assembly
- Screen-oriented display/single image of machine
- Line-oriented input

Complete and self-contained, TI's TMS34010 XDS/22 Emulator is a user-friendly system for realtime, in-circuit emulation. The emulator may be used in a stand-alone mode through a standard terminal or through a host computer with a powerful debugger interface. The emulator has 128K x 16 words of DRAM (zero wait states) for program memory.

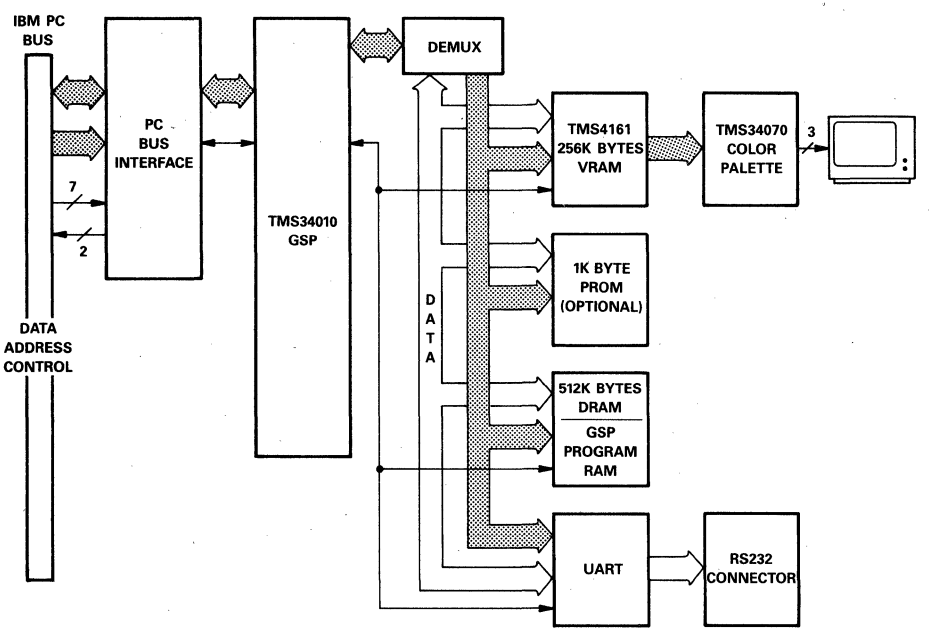


TMS34010 Software Development Board

An easy way to evaluate the power and flexibility of TI's new TMS34010 Graphics System Processor is provided by the TMS34010 Software Development Board (SDB). It is a single-slot, plug-in board populated with TI's GSP, Color Palette, and VRAMS. Large program memory allows execution of graphics software standards as well as user-supplied programs.

KEY FEATURES

- Plugs into IBM PC-compatible and TI Professional computers
- 256K bytes of display memory organized as 1,024 x 512 x 4 using TMS4161 VRAMs
- 4,096 colors available per screen, 16 colors per line, using TMS34070 Color Palette
- Analog or digital RGB output
- 512K bytes of TMS34010 program memory using TMS4256 256K-bit DRAM
- Mouse interface/serial port supported on board
- Debugger interface software



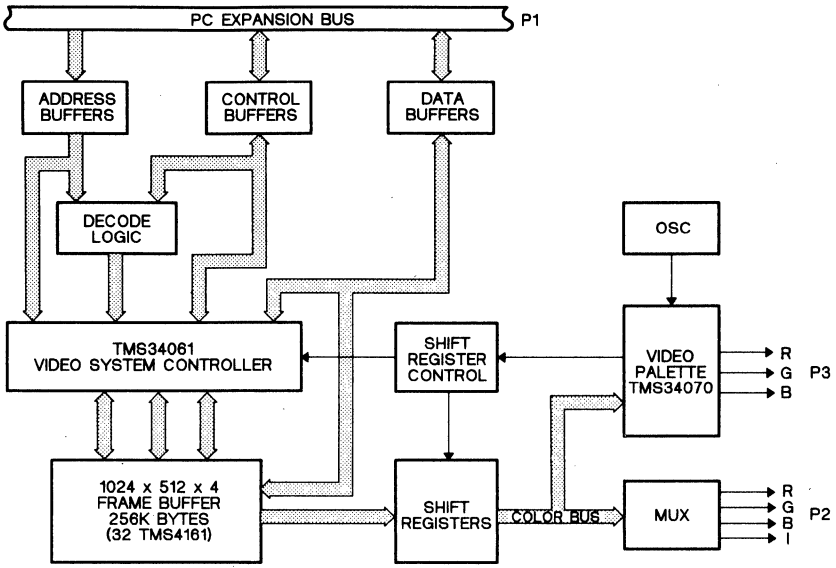
TMS34010 Software Development Board

Color Graphics Controller Board

Fast checkout of the resolution and quality of TI's TMS34061 Video System Controller and TMS34070 Color Palette in controlling text and graphics is provided by TI's TMS340 Color Graphics Controller Board. It also demonstrates ease of hardware design.

KEY FEATURES

- 256K-byte frame buffer (1,024 x 512 pixels, 4-bits per pixel)
- Direct interface to most digital and analog RGB monitors
- Totally programmable resolution (640 x 480 pixels as shipped)
- IBM and TI PC I/O expansion bus compatible
- 16 of 4,096 colors per line color palette
- Palette can be loaded on a line or frame basis under software control



Color Graphics Controller Board Block Diagram

TMS34010 DEVELOPMENT SOFTWARE

Immediately available to speed graphics system design and development is this exceptionally broad software family supporting TI's TMS34010 Graphics System Processor. Included is a Kernighan and Ritchie standard 'C' Compiler Package, Assembler Package, Graphics/Math Function Library, Bit-Map Font Library, and PC Debugger Development Package.

KEY FEATURES

Compiler Package

- Full Kernighan and Ritchie 'C' with extensions (in-line assembly code, enumerated data type)
- 64-bit IEEE (without implied 1) floating point
- Three-pass optimizing preprocessor, parser, code generator generating TMS34010 assembly source
- Floating-point and memory-management run-time support
- Supports symbolic/statement-level debug
- Assembly linkable

Assembler Package

- COFF (Common Object File Format) section-oriented object code
- Macro assembler/linker supporting packed bit fields, cache alignment, symbol cross-referencing, and output control
- Screen-oriented software debugger (GSPSIM) with breakpoint/trace,instruction execution, input redirection, environment save/restore, on-line help utility
- Source/object archiver
- ROM utility for ROM/PROM/EPROM programming

Graphics/Math Function Library

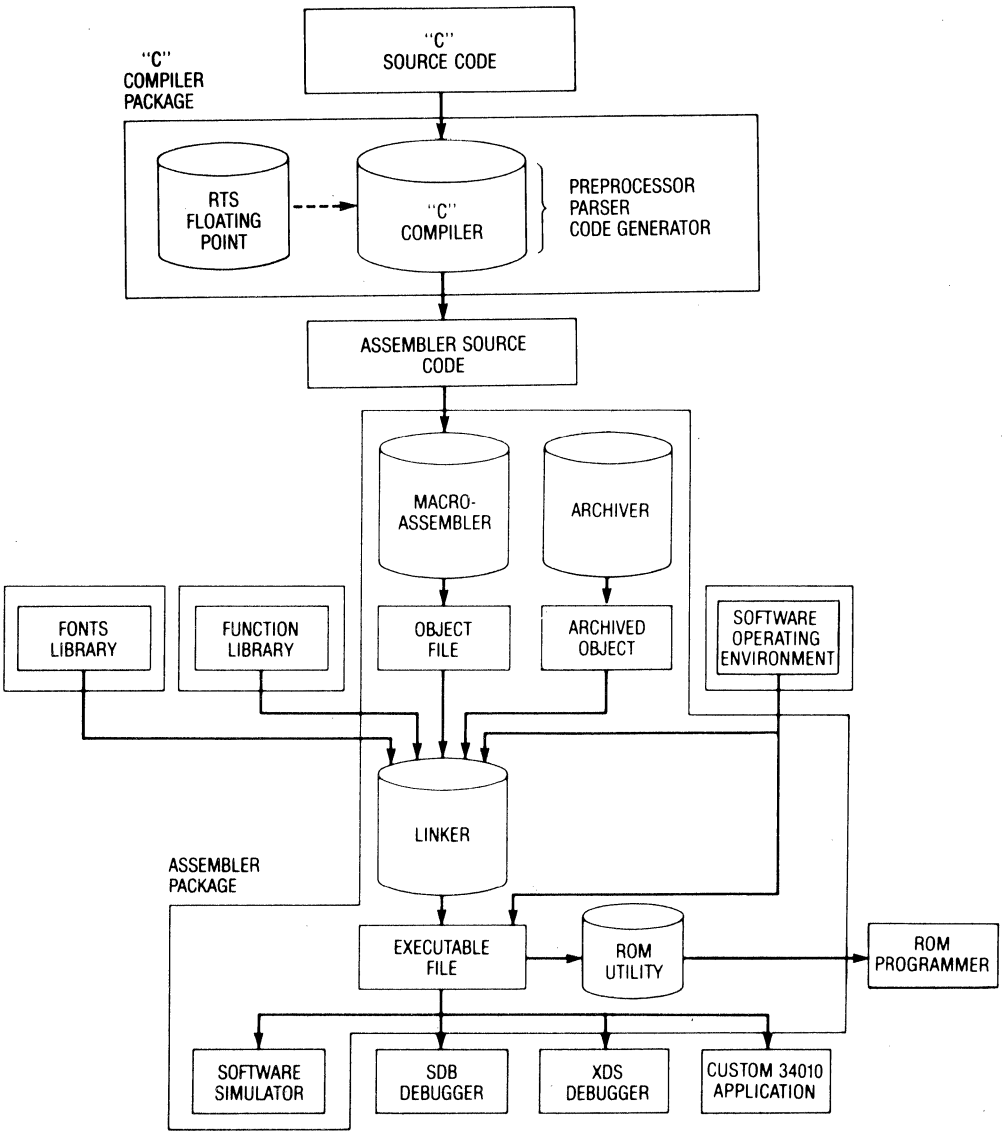
- Graphics primitives
- Transcendental functions (double-precision floating point)
- Matrix operations (3D transforms)
- Text and font functions
- View port support
- Palette management

Bit-Map Font Library

- 19 different font styles
- Over 100 total fonts
- Pixel heights from 7 to 82

PC Debugger Development Package

- Main program is executable object code
- Driver code is customizable source



TMS34010 Software Development Tools

TMS380 LAN Adapter Chipset

INTRODUCTION

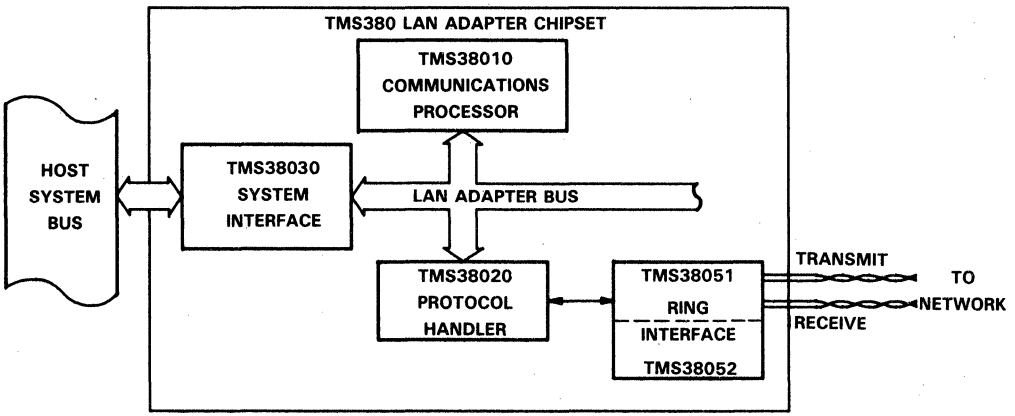
The Texas Instruments TMS380 LAN adapter chipset was developed jointly with IBM™ and provides manufacturers of computer, peripheral, and telecommunication equipment with a verified chipset for connecting to the IBM Token-Ring Network.

Overview

The TMS380 chipset uses a token-passing access technology compatible with the IEEE 802.5 standard. The chipset provides a 4-megabit-per-second data expressway using twisted-pair wire or fiber optic media. The integrated LAN adapter architecture of the TMS380 ensures connectivity to the IBM Token-Ring Network by providing all the functions needed to connect an attaching product's host processor bus to the physical media. High reliability of the network is provided via dedicated error checker circuits, on-chip diagnostic and error monitoring software, and other network-management features.

Standard LAN Adapter Architecture

Through the use of advanced VLSI NMOS and bipolar processes, Texas Instruments reduced the essential building blocks of an IEEE 802.5 Media Access Control (MAC) level LAN adapter card into the five-piece chipset shown below.



Integrated Adapter Architecture

Following is some additional information for each member of the TMS380 chipset. For detailed information on the TMS380 chipset, please refer to the *TMS380 Adapter Chipset User's Guide* (SPWU001D).

The System Interface

The TMS38030 System Interface (SIF) chip provides up to 40 megabits-per-second of data to the host system via DMA bus master transfers. The host system bus interface is selectable for two types of memory organization and control signals:

- 8-, 16-, and 32-bit members of the 808X and Series 32000 microprocessor families
- 16- and 32-bit members of the 68000 microprocessor family

The System Interface is controlled through command blocks with a high-level command structure; for example, commands include TRANSMIT, RECEIVE, and READ ERROR LOG. The System Interface has a 24-bit address reach into the host memory and a "scatter write-gather read" DMA feature that allows discontiguous memory blocks to be transferred and received via linked lists. Programmable burst transfers or cycle-steal operation and optional parity protection allow system designers to customize the TMS38030 to their particular bus.

The Communications Processor

The TMS38010 Communications Processor (CP) contains a dedicated 16-bit CPU with 2.75K bytes of on-chip RAM. The Communications Processor executes the Medium Access Control (MAC) and Logical Link Control (LLC) protocols of the token ring. The on-chip RAM buffers the frames being transmitted and received. This high-performance CPU provides single-cycle arbitration of the 3 MHz LAN adapter bus for maximum adapter throughput. Up to 104K of expansion memory can be added to the LAN adapter bus. All on-chip RAM and expansion memory is parity protected.

The Protocol Handler

The TMS38020 Protocol Handler (PH) performs hardware-based protocol functions for a 4-megabit-per-second token ring LAN compatible with the IEEE 802.5 standard. An on-chip ROM contains 16K bytes of adapter software executed by the Communications Processor. This software supports reliable ring operation, LAN management services, and thorough diagnostic coverage of the adapter chipset.

The Protocol Handler implements differential Manchester encoding and decoding and frame-address recognition (group, specific, and functional). The Protocol Handler also contains state machines that capture free tokens, transmit and receive frames, manage the adapter chipset buffer RAM, and provide token-priority controls.

Four DMA channels, two for transmit and two for receive, ensure high-speed frame transfer between the ring and the adapter's buffer RAM. Integrity of transmitted and received data is assured by cyclic redundancy checks (CRC), detection of differential Manchester code violations, and parity on internal data paths. All data paths and registers are parity-protected to assure functional integrity.

The TMS38021 Protocol Handler, in addition to the functions mentioned above, enables the design of high-performance token-ring bridge and gateway products.

The Ring Interface

The TMS38051 and TMS38052, collectively the Ring Interface, are the Ring Interface Transceiver and Ring Interface Controller. These chips contain the digital and analog circuitry to connect the adapter chipset to a 4-megabit-per-second token ring LAN through separate receive and transmit channels.

The Ring Interface provides the clock for the ring when in active monitor mode and contains a phase lock loop for clock recovery, data detection, and phase alignment. The Ring Interface also provides the phantom drive signal to a wiring concentrator, a loop-back path for diagnostic testing and error detection of wire faults.

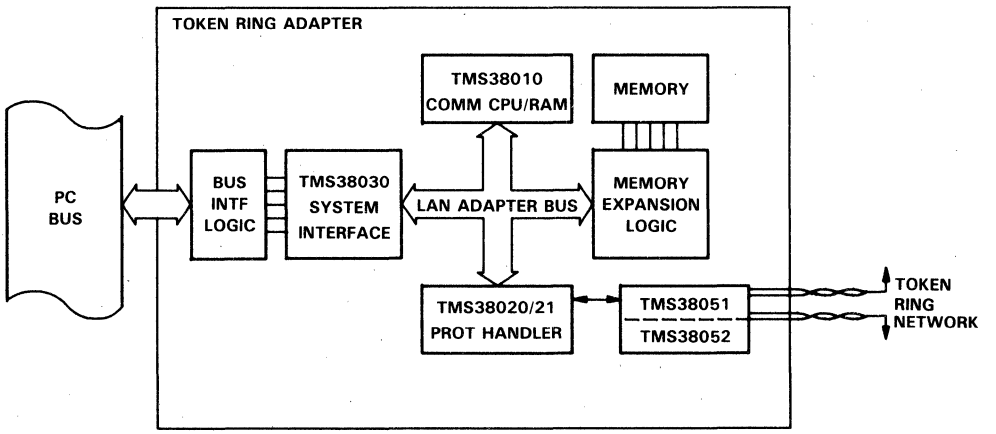
TMS380 Chip Technology

DEVICE	TECHNOLOGY	POWER	CHIP SIZE (k sq mils)	PACKAGE
TMS38030 System Interface	2.4 μm NMOS	950 mW	108	100 PGA
TMS38010 Communications Processor	2.4 μm NMOS	750 mW	119	48 DIP
TMS38020 Protocol Handler	2.4 μm NMOS	550 mW	108	48 DIP
TMS38051 Ring Interface Transceiver	LLS-TTL	350 mW	27	22 DIP
TMS38052 Ring Interface Controller	LLS-TTL	200 mW	13	20 DIP

Expanded LAN Adapter Architecture

In order to implement an add-in card token ring adapter, additional bus interface circuitry is required. Also, in order to implement an expanded capacity MAC level adapter or expanded function IEEE 802.2 Logical Link Control (LLC) level adapter, memory expansion circuitry is required.

Following is an implementation block diagram of an expanded-function token ring adapter card using the TMS380 chipset. Note the additional logic to interface to the PC bus and expansion memory.

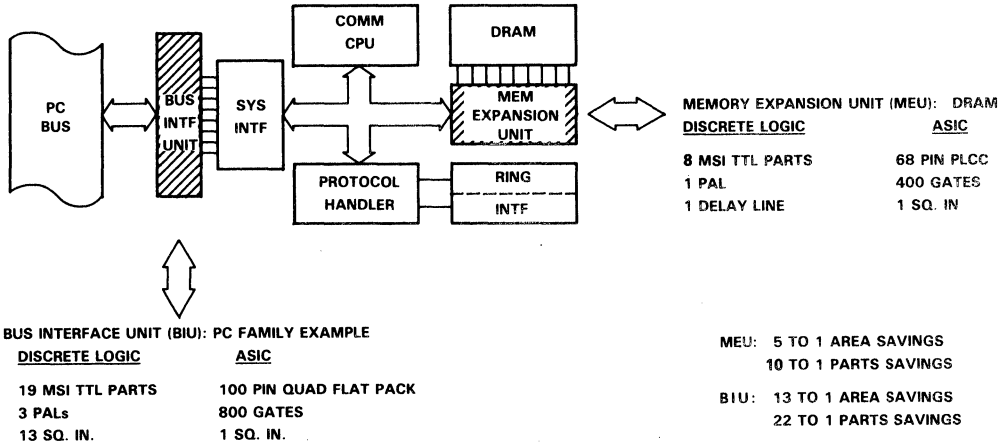


Expanded Token Ring Adapter Block Diagram

ASIC-LAN Toolkit

By using the TMS380 ASIC-LAN Toolkit, all the interface logic surrounding the TMS380 chipset is collected into soft macro building blocks which can be assembled into ASIC components for host bus interface and memory expansion on the LAN Adapter Bus. These two ASICs dramatically reduce the amount of required board space and allow for easy migration to a fully functional half-sized adapter complete with expansion memory.

The following illustration shows a complete, full function token ring adapter card using DRAM memory expansion and a PC Family host interface. Note the component count savings and board area reduction.

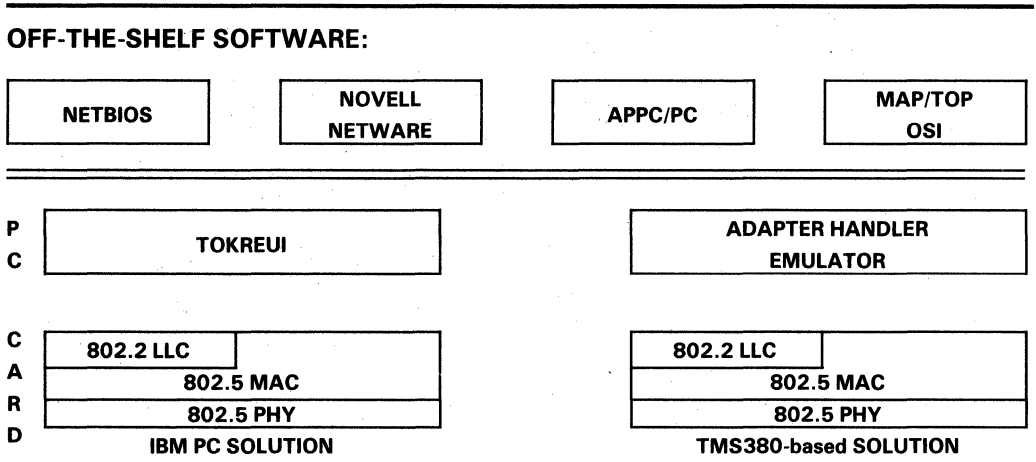


TMS380 ASIC-LAN Toolkit Adapter Compression Example

The library of soft macros contained in the Toolkit allows you to construct your own ASIC interface chips — or, you can select one of the pre-captured and pre-simulated design examples without requiring modifications.

IEEE 802.2 Logical Link Control

Several of the MEU software macros can be combined to build an ASIC which supports the addition of IEEE 802.2 Logical Link Control (LLC) on the TMS380 LAN adapter. By offering this capability on-chip, TMS380 users can enjoy improved system performance, reduced development cost, and robust open system operation compatible with IBM's networking products. The LLC software is supported in EPROM or on Floppy for download into DRAM. With IEEE 802.2 on the TMS380, the LAN adapter protocols are independent of the attached product and operating system. This allows the TMS380 to be used across multiple product lines with many different operating systems such as DOS, UNIX and VM, and provides a link to popular off-the-shelf communications protocols.



Using Off-the-Shelf Software

TMS380 Customer Support

Texas Instruments, the leader in token ring chipsets, is committed to helping you achieve effective product designs in a quick, efficient manner. Consequently, the TMS380 Token Ring chipset is fully supported with documentation, technical training, development tools, and applications engineering available through Texas Instruments sales offices.

Documentation

The TMS380 Token Ring chipset offers you extensive information at the introductory/overview level, as well as detailed technical data specifications. The introductory information provides concise information to quickly build your awareness of the TMS380 chipset and token ring networks. Available documents include:

- Texas Instruments — The Token Ring Connection (SPWM011)
- Token-Ring LAN — TMS380 Development Products Family (SPWB001)
- Texas Instruments Token-Ring LAN Adapter Family Product Bulletin (SPWT018A)

Thorough technical data sheets and applications information on the TMS380 Token Ring LAN Adapter chipset leave no details unspecified. Available documents include:

- TMS380 LAN Adapter Chipset User's Guide (SPWU001D)
- TMS380 LAN Adapter Chipset User's Guide Supplement (SPWU003)
- TMS380 Development Product Family User's Guide
- A collection of technical papers on token ring presented by Texas Instruments technical experts

Token Ring Training

To quickly familiarize your decision makers and ramp up your design team with state of the art information on token ring, Texas Instruments offers a distinguished array of training including:

- A free half-day seminar designed to introduce networking, as well as features of the TMS380 token ring adapter chipset. It is available at TI's Regional Technology Centers (RTCs).
- A two-day workshop on "IBM Token-Ring Network Design" (RTCWS-380LAN1) is offered by TI's RTCs. This is targeted at hardware adapter card designers and provides them with an understanding of how to interface the TMS380 chipset to popular host microprocessors, backplane buses, and operating systems.
- A TMS380 Advanced Topics Workshop (RTCWS-380LAN2) is also offered by TI's RTCs. This course introduces the software designer to two advanced features of the TMS380 Token Ring Adapter family — the extended Logical Link Control protocol software interface, and the application of the TMS380 family to bridging products.

Development Support Products

Texas Instruments provides leadership development tools to accelerate your token ring product design, including:

- DESIGN-IN ACCELERATOR KIT (TMS380LDK-1) — The DIA kit is targeted at the hardware engineer involved in adapter card design and debug. Included in the kit are three TMS380 chipsets, a TMS380 Adapter Chipset User's Guide, Adapter Debug Software (ADS) to help debug prototype cards, and the TMS380 Adapter Bring-Up Guide.
- PC ADAPTER CARD (TMDS380PC) — This 4 or 16-bit compatible product is aimed at the software engineer who wants to prototype a token ring and begin software development and system evaluation. Included with the card are: two 8-foot ring cables, demonstration software, a traffic generator option, and a copy-all-frames function for network analysis. The development card now features IEEE 802.2 LLC software, and includes a copy of the new IBM LAN Support Program.
- TEST WIRING CONCENTRATOR (TMD380TWC-1) — Provides the physical connection of up to eight devices to the token ring.
- TMS380 BRIDGE DESIGN KIT (TMDX380BMP) — This package is aimed at customers who want to build a token ring bridge product or are interested in building network management equipment. Included in the kit are: one TMX38021 Protocol Handler, the TMS38021 Bridge Application Report, and the new bridge options adapter software.
- TMS380 LLC EVALUATION KIT (TMDS380LLC) — This is for customers who purchased TI's development cards or who have designed their own hardware and wish to evaluate TI's new TMS380-based IEEE 802.2 LOGICAL LINK CONTROL (LLC) software. Included in the kit are: three sample sets of LLC software, the TMS380 Adapter Chipset User's Guide Supplement, Adapter Handler Emulator software, and Adapter Debug Software.
- TMS380 ASIC-LAN TOOLKIT (TMDP380ASIC) — This package will assist you in designing an Application Specific IC (ASIC) tailored specifically for the TMS380 LAN chipset. Included in the kit is the ASIC-LAN manual, a set of 8-inch floppy disks containing the library of LAN software macros, detailed data sheets covering more than 30 cell types, and several ASIC-LAN design examples of host system bus interfaces, as well as memory expansion examples.

Applications Engineering Support

Texas Instruments' commitment to customer support goes even further by providing you extensive token ring application engineering support, including:

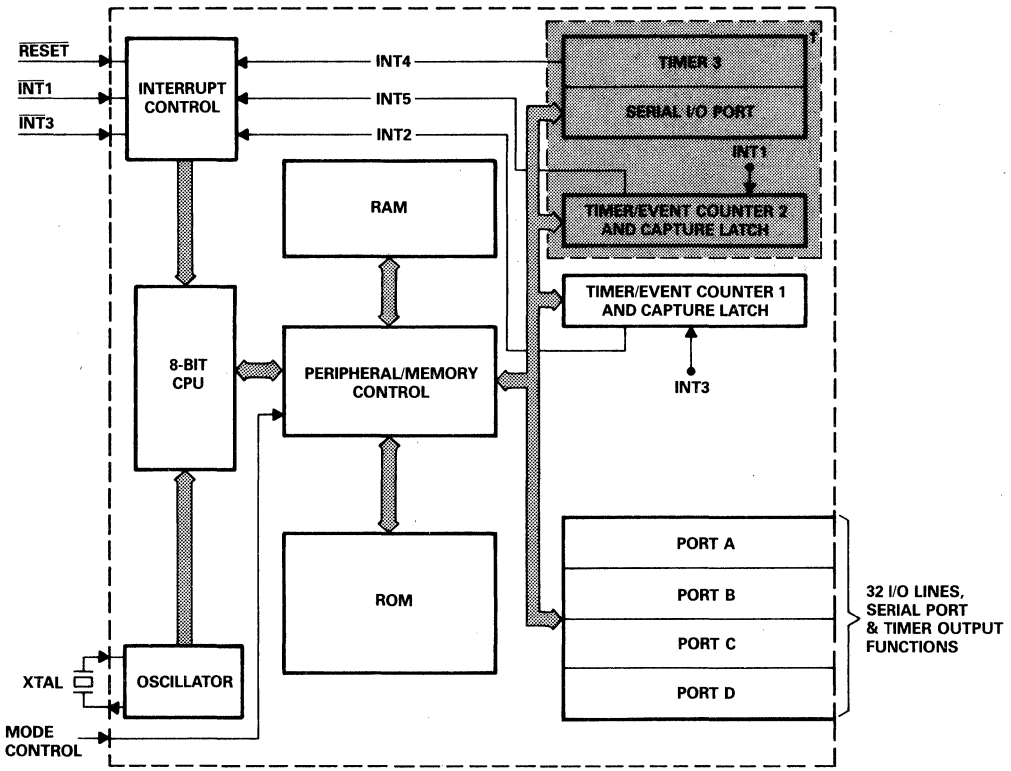
- Regional Technology Centers (RTCs) and ASIC Design Centers with trained engineers for ASIC development support.
- Factory Applications Engineering with industry-leading expertise in all phases of token ring network and TMS380 applications.
- TMS380 Token Ring Hotline (713) 274-2380. A direct line to TI's factory token ring applications engineering for quick answers to any TMS380 application question.

8-BIT MICROCOMPUTERS — TMS7000 FAMILY

DESCRIPTION

The TMS7000 is a family of 8-bit single-chip microcomputers. These microcomputers incorporate a CPU, memory (RAM, ROM, EPROM), bit I/O, serial communication port, timers, interrupts, and external bus interface logic, all on a single-chip. The products are available in varying complexity of functions, process technology, performance, and packaging to meet end equipment cost goals and application requirements.

FUNCTIONAL BLOCK DIAGRAM



† Timer 3, serial port, and timer/event counter 2 available for TMS70Cx2 devices only

TMS7000 FAMILY

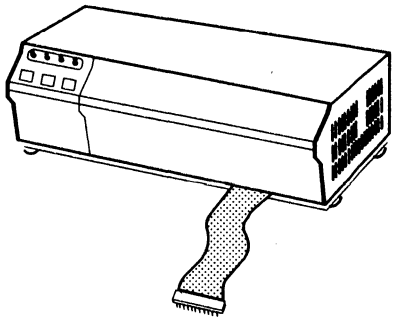
TMS7000 FAMILY			
DESCRIPTION	**TMS70C00A TMS70C20A TMS70C40A**	**TMS70C02 TMS70C42**	**TMS77C82**
Max. Oscillator Frequency (5V ± 10%)	5 MHz	6 MHz	7.5 MHz
On-Chip ROM (K-Bytes)	0/2/4	0/4	8 (EPROM)
On-Chip RAM (Bytes)	128	256	256
Interrupt Levels: External Total	 2 4	 2 6	 2 6
Timers/Event Counters 21-Bit 13-Bit 10-Bit	 — 1 —	 2 — 1	 2 — 1
I/O Lines: Bidirectional Output Only Input Only	 16 8 8	 24 8 —	 24 8 —
Additional Features	—	Serial Port	Serial Port
DEVELOPMENT SUPPORT			
Prototyping EPROM Piggyback	 — SE70CP160	 TMS77C82 SE70CP162	 — SE70CP162
XDS® EVM	Yes Yes	Yes Yes	Yes Yes
Voltage Range Temperature Range	2. 5V to 6.0V −40° to 85°C	2.5V to 6.0V −40° to 85°C	2.5V to 6.0V −40° to 85°C

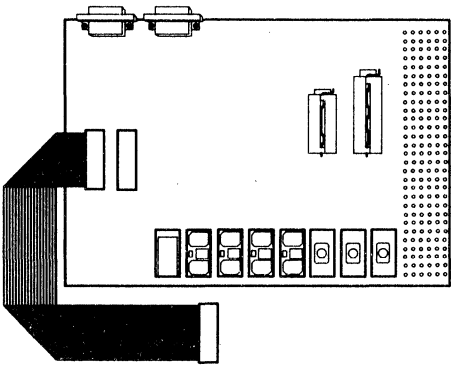
DEVELOPMENT SYSTEMS

There are two development systems available for the TMS7000 family of microcomputers, the XDS® and the EVM. The XDS® is a Host independent real-time in-circuit emulator with extensive on-board debug capabilities. The EVM is a low-cost Host independent real-time in-circuit emulator with debug capabilities and EPROM programming utilities.

XDS® - Extended Development System

- Full TMS7000 Family Development System
- Host Independent/RS-232-C Interface
- Full Speed In-Circuit Emulation
- Extensive Breakpoint and Trace Functions
  - — Detailed Timing Analysis
  - — 2K-Byte Trace Samples
  - — Breakpoint Sequencing Ability
- Command/Default Storage
- Removable Target Connector
- External Probe for Breakpoint/Trace Qualifiers
- On-Board Assembler and Reverse Assembler
- Multiprocessing Capabilities





EVM — Evaluation Module

- TMS7000 Family Low Cost Development System
- Single-Chip Mode Emulation Only
- On-Board Assembler/Line Text Editor
- On-Board Hardware/Software Debugger
- Multiple Breakpoints
- Trace Display Function
- EPROM Programmer Utilities

ASSEMBLER/LINKER PACKAGE

Crossware® assembler/linker packages are available through Texas Instruments for the following operating systems:

Operating System	TI Part Number
TI and IBM PC	TMDS7040810-02
DEC VAX VMS	TMDS7040210-08

PROTOTYPING DEVICES

The TMS7000 family contains a wide range of prototyping devices for preproduction and development needs.

TMS77C82 EPROM DEVICES

These 8-bit EPROM microcomputers are designed for prototyping purposes and applications where program constraints are likely to change periodically. The TMS77C82 contains 8K bytes of on-chip EPROM and is completely software and pin compatible with the TMS70C42.

SE70CP160 AND SE70CP162 PIGGYBACK DEVICES:

The Piggyback parts are prototyping devices for the TMS7000 family of microcomputers. These devices are packaged so that a standard '27C64, or '27C128 EPROM can be plugged into the socket on top (piggyback). It is designed to be used in the prototyping environment and is tested and support for that purpose. Texas Instruments does not support or warrant the use of the piggyback parts for production purposes.

HIGH PERFORMANCE VLSI PROCESSORS

VLSI 8-Bit-Slice Processor Family

SN54AS887, SN74AS887 8-Bit Processors

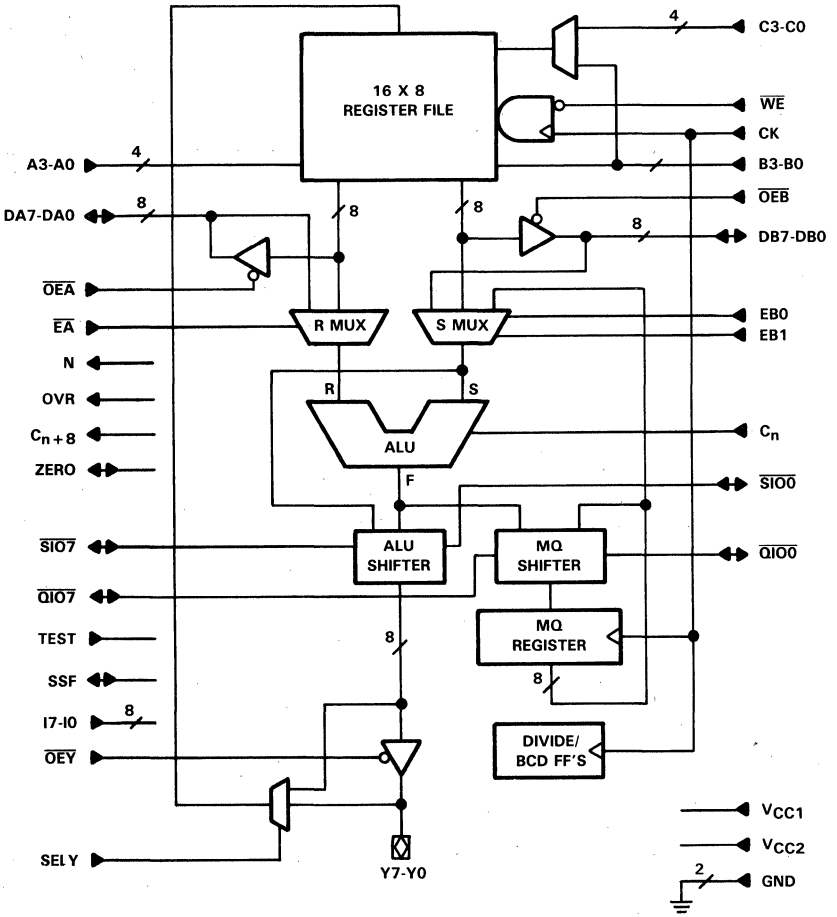
DESCRIPTION

The 'AS887 8-bit Advanced Schottky TTL integrated circuit is designed to implement high performance digital computers or controllers. An architecture and instruction set has been chosen that supports a fast system clock, a narrow micro-code word width, and a high system throughput. The powerful instruction set allows high-speed system architecture to be implemented and also allows an existing system's performance to be upgraded while protecting software investments. The 'AS887 is a non-cascadable version of the 'AS888 and is designed for 8-bit applications only.

KEY FEATURES

- STL-AS Technology
- Parallel 8-Bit ALU with Expansion Inputs and Outputs
- 13 Arithmetic and Logic Functions
- 8 Conditional Shifts (Single and Double Length)
- 4 Instructions that Manipulate Bits
- Add and Subtract Immediate Instructions
- Absolute Value Instruction
- Signed Magnitude to/from Two's Complement Conversion
- Single- and Double-Length Normalize
- Select Functions
- Signed and Unsigned Divides with Overflow Detection; Input does not Need to be Prescaled
- Signed, Mixed, and Unsigned Multiplies
- Three-Operand, 16-Word Register File
- Full Carry Look Ahead Support
- Sign, Carry Out, Overflow, and Zero-Detect Status Capabilities
- Excess-3 BCD Arithmetic
- Internal Shift Multiplexers that Eliminate the Need for External Shift Control Parts
- ALU Bypass Path to Increase Speeds of Multiply, Divide, and Normalize Instructions and to Provide New Instructions such as Bit Set, Bit Reset, and Bit Test
- 3-Operand Register Files to Allow an Operation and a Move Instruction to be Combined
- Bit Masks that are Shared with Register Address Fields to Minimize Control Store Word Width
- 3 Data Input/Output Paths to Maximize Data Throughput

FUNCTIONAL BLOCK DIAGRAM



'AS887

SN54AS888, SN74AS888 8-Bit Processor Slices

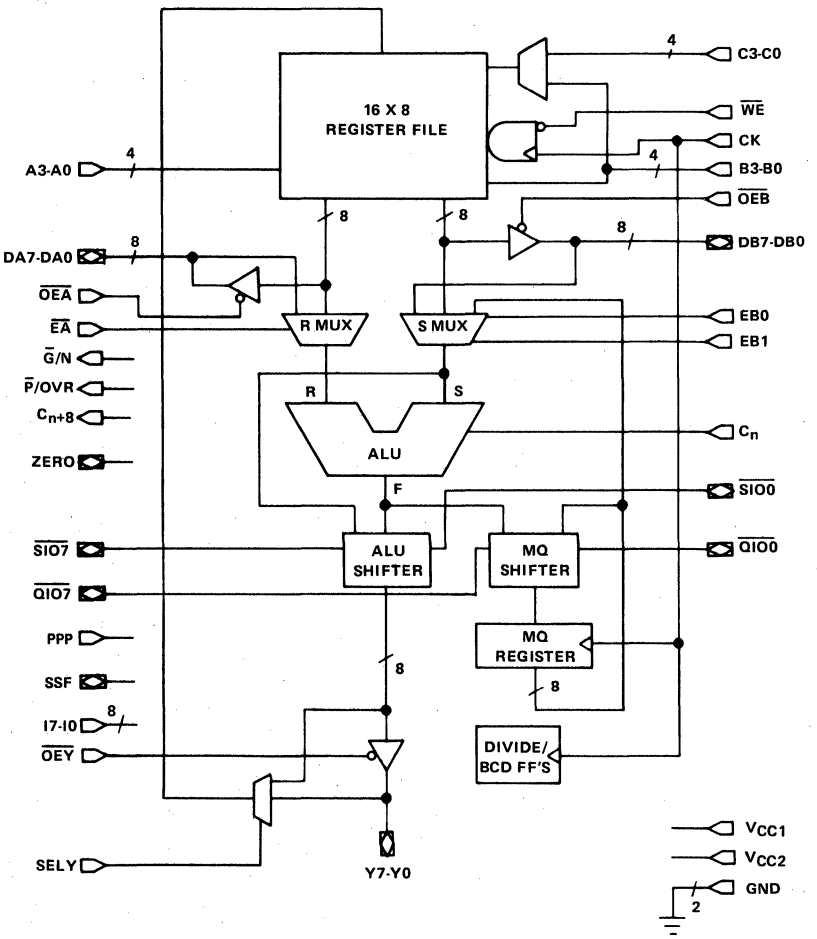
DESCRIPTION

The 'AS888 8-bit Advanced Schottky TTL integrated circuit is designed to implement high performance digital computers or controllers. An architecture and instruction set has been chosen that supports a fast system clock, a narrow micro-code word width, and a high system throughput. The powerful instruction set allows high-speed system architecture to be implemented and also allows an existing system's performance to be upgraded while protecting software investments. The 'AS888 is designed to be cascadable to any word width 16 bits or greater.

KEY FEATURES

- STL-AS Technology
- Parallel 8-Bit ALU with Expansion Inputs and Outputs
- 13 Arithmetic and Logic Functions
- 8 Conditional Shifts (Single and Double Length)
- 9 Instructions that Manipulate Bytes
- 4 Instructions that Manipulate Bits
- Add and Subtract Immediate Instructions
- Absolute Value Instruction
- Signed Magnitude to/from Two's Complement Conversion
- Single- and Double-Length Normalize
- Select Functions
- Signed and Unsigned Divides with Overflow Detection; Input does not Need to be Prescaled
- Signed, Mixed, and Unsigned Multiplies
- Three-Operand, 16-Word Register File
- Full Carry Look Ahead Support
- Sign, Carry Out, Overflow, and Zero-Detect Status Capabilities
- Excess-3 BCD Arithmetic
- MQ Register is Externally Available through the DB Port
- Internal Shift Multiplexers that Eliminate the Need for External Shift Control Parts
- ALU Bypass Path to Increase Speeds of Multiply, Divide, and Normalize Instructions and to Provide New Instructions such as Bit Set, Bit Reset, Bit Test, Byte Subtract, Byte Add, and Byte Logical
- 3-Operand Register Files to Allow an Operation and a Move Instruction to be Combined
- Byte Select Controlled by External 3-State Buffers that may be Eliminated if Bit and Byte Manipulation are not Needed
- Bit and Byte Masks that are Shared with Register Address Fields to Minimize Control Store Word Width
- 3 Data Input/Output Paths to Maximize Data Throughput

FUNCTIONAL BLOCK DIAGRAM



'AS888

SN54AS890, SN74AS890 Microsequencers

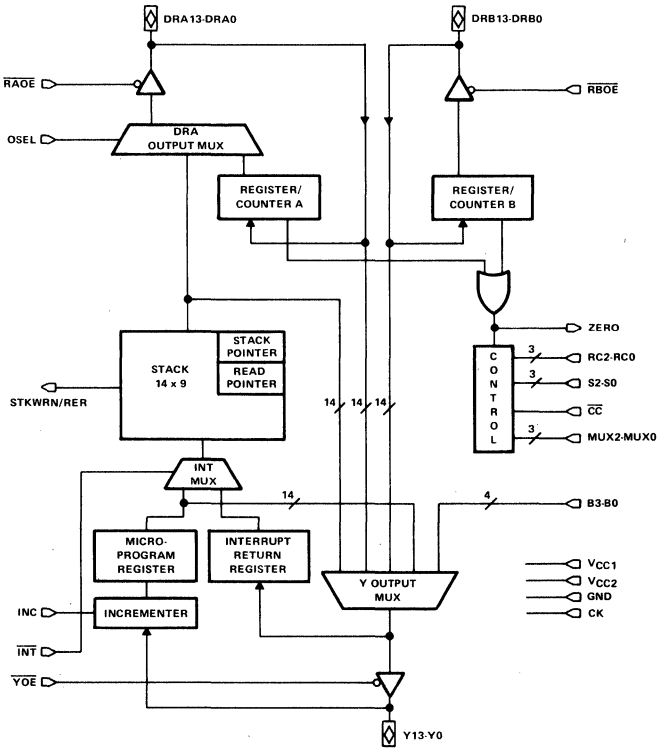
DESCRIPTION

The 'AS890 is a powerful microsequencer that is the result of the implementation of TI's Advanced Schottky and Schottky Transistor Logic. Approximately 2400 Schottky gate equivalents are used to construct this high-performance sequencer. The 'AS890 can generate an address and provide register status in only 29 ns while typically requiring only 1.8 watts of power. All internal STL logic operates on a 2-volt power supply that must be supplied externally. The information generated by the internal STL logic is communicated in the rest of the system via 5-volt Advanced Schottky TTL-compatible I/O ports.

KEY FEATURES

- 14 Bits Wide — Addresses up to 16,384 Words of Microcode with One Chip
- Selects Address from One of Eight Sources
- STL-AS Technology
- Independent Read Pointer for Aid in Microcode Diagnostics
- Supports Real-Time Interrupts
- Two Independent Loop Counters
- Supports 64 Powerful Instructions

FUNCTIONAL BLOCK DIAGRAM



'AS890

SN54AS895, SN74AS895 8-Bit Memory Address Generators

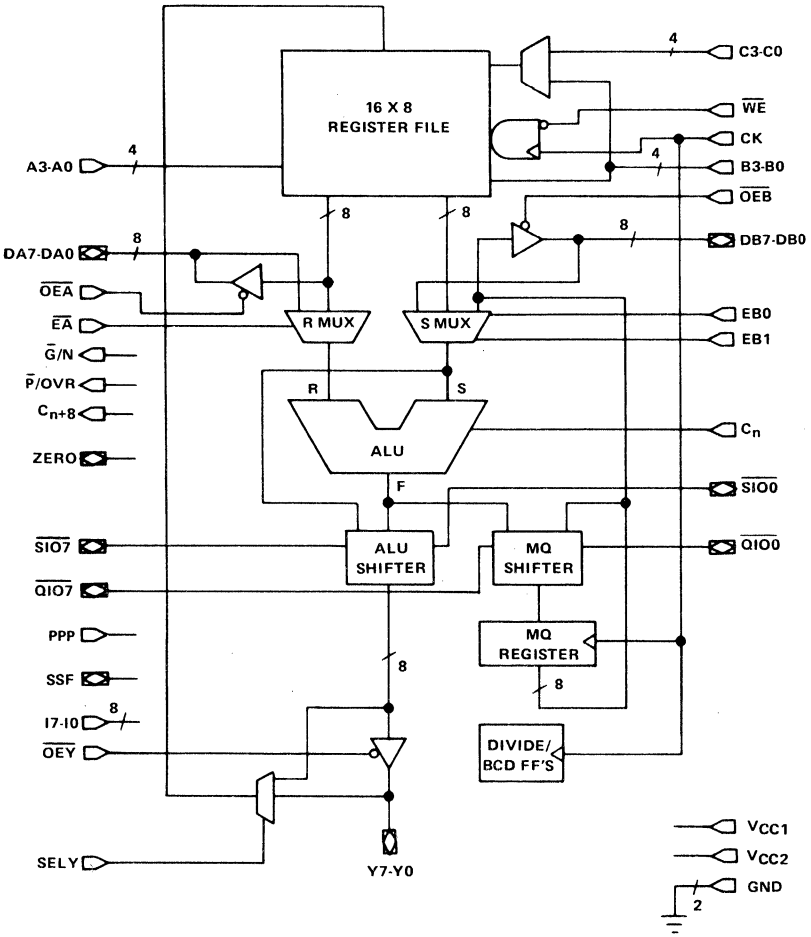
DESCRIPTION

The 'AS895 8-bit Advanced Schottky TTL integrated circuit is designed to implement high performance digital computers or controllers. An architecture and instruction set has been chosen that supports a fast system clock, a narrow micro-code word width, and a high system throughput. The powerful instruction set allows high-speed system architecture to be implemented and also allows an existing system's performance to be upgraded while protecting software investments. The 'AS895 is designed to be cascadable to any word with 16-bits or greater.

KEY FEATURES

- STL-AS Technology
- Parallel 8-Bit ALU with Expansion Inputs and Outputs
- 13 Arithmetic and Logic Functions
- 8 Conditional Shifts (Single and Double Length)
- 9 Instructions that Manipulate Bytes
- 4 Instructions that Manipulate Bits
- Add and Subtract Immediate Instructions
- Absolute Value Instruction
- Signed Magnitude to/from Two's Complement Conversion
- Single- and Double-Length Normalize
- Select Functions
- Signed and Unsigned Divides with Overflow Detection; Input does not Need to be Prescaled
- Signed, Mixed, and Unsigned Multiplies
- Three-Operand, 16-Word Register File
- Full Carry Look Ahead Support
- Sign, Carry Out, Overflow, and Zero-Detect Status Capabilities
- Excess-3 BCD Arithmetic
- MQ Register is Externally Available through the DB Port
- Internal Shift Multiplexers that Eliminate the Need for External Shift Control Parts
- ALU Bypass Path to Increase Speeds of Multiply, Divide, and Normalize Instructions and to Provide New Instructions such as Bit Set, Bit Reset, Bit Test, Byte Subtract, Byte Add, and Byte Logical
- 3-Operand Register Files to Allow an Operation and a Move Instruction to be Combined
- Byte Select Controlled by External 3-State Buffers that may be Eliminated if Bit and Byte Manipulation are not Needed
- Bit and Byte Masks that are Shared with Register Address Fields to Minimize Control Store Word Width
- 3 Data Input/Output Paths to Maximize Data Throughput

FUNCTIONAL BLOCK DIAGRAM



'AS895

SN54AS897A, SN74AS897A 16-Bit Parallel/Serial Barrel Shifters

DESCRIPTION

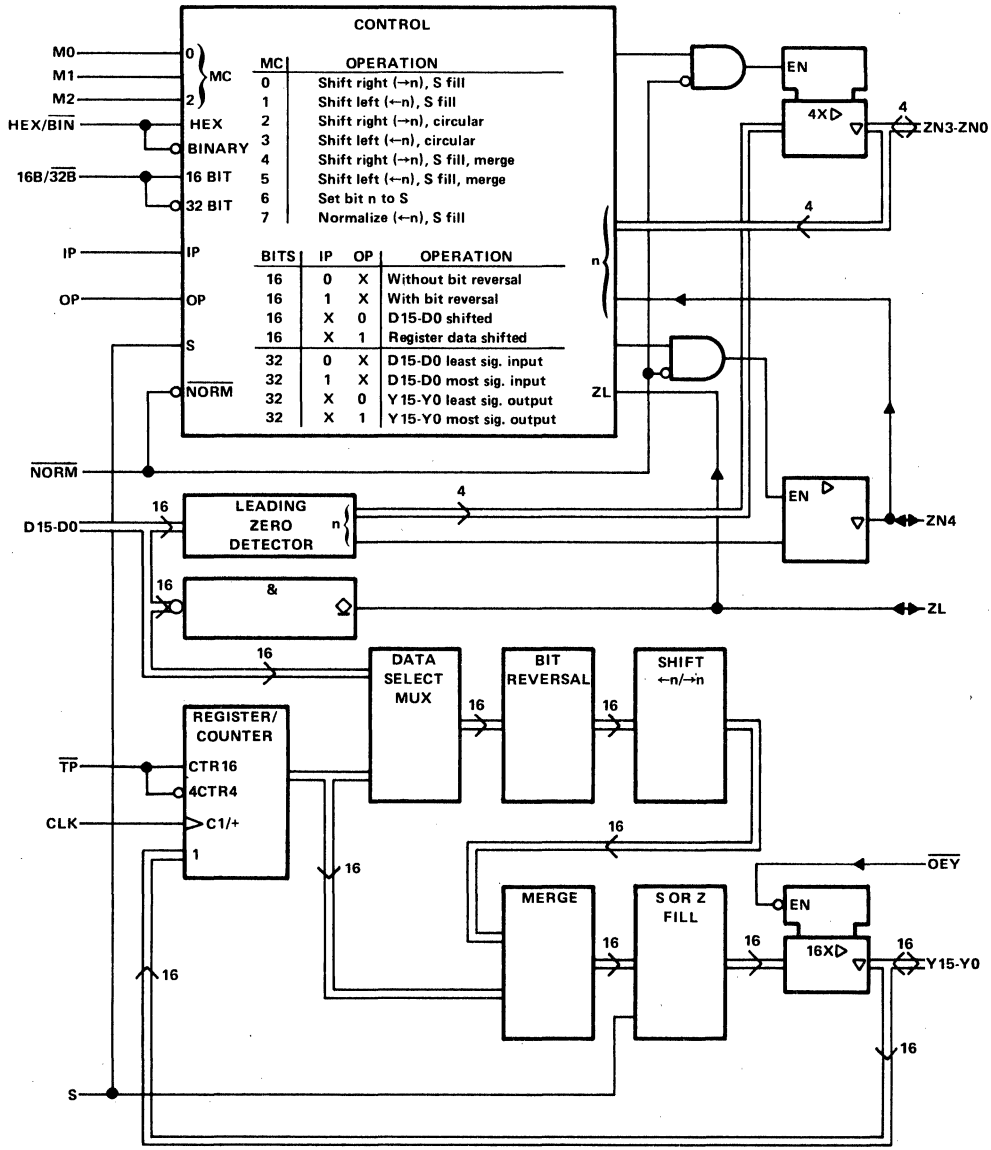
The 'AS897A is a multipurpose 16-bit barrel shifter in a 68-pin ceramic pin-grid-array package. The device is capable of several different types of shift operations, as well as other more specialized functions such as hexadecimal and binary normalization, bit replacement, and leading-zero detection.

The unique feature of all barrel shifters is how the shift function is implemented. In conventional shift registers, shift operations are controlled by the number of input clock pulses applied. With barrel shifters, the desired number of positions to be shifted is determined by an input decoder. This form of implementation does not require an input clock and results in a shift operation that is restricted only by internal propagation delays. This delay is the same regardless of the number of positions to be shifted. The result is a high-speed 'flash' type of shift.

KEY FEATURES

- High-Speed "Flash" Shift Operations
- Expandable to 32-Bits
- Hexadecimal and Binary Normalization with Leading Zero Detection
- Bit Reversal
- Merge Capabilities

FUNCTIONAL BLOCK DIAGRAM



'AS897A

74AS-EVM-8 Bit-Slice Evaluation Module

INTRODUCTION

The Texas Instruments 74AS-EVM-8 is a low-cost bit-slice development and evaluation system consisting of a single board, dual processor computer, extensive monitor software in ROM, nonvolatile memory for microprogram storage, and communications software for TI or IBM PCs. The 74AS-EVM-8 is a stand-alone system, designed for easy use. It consists of a 16-bit high-speed section containing:

- Two 'AS888 bit-slice processors configured as a 16-bit computer
- One 'AS890 microsequencer
- 2047 X 96 high-speed RAM micromemory
- 2047 X 96 high-speed PROM micromemory
- 2047 X 16 macromemory with program counter
- Condition code multiplexer
- Pipe Line registers
- Hardware breakpoint comparator with pass counter

The bit-slice section operates under the control of an 8-bit processor and an extensive monitor program. The control processor can read and write to all of the high-speed data and address buses and to micromemory and can read the processor status register. It also controls the clock generator circuits and can be used to single step the 'AS888.

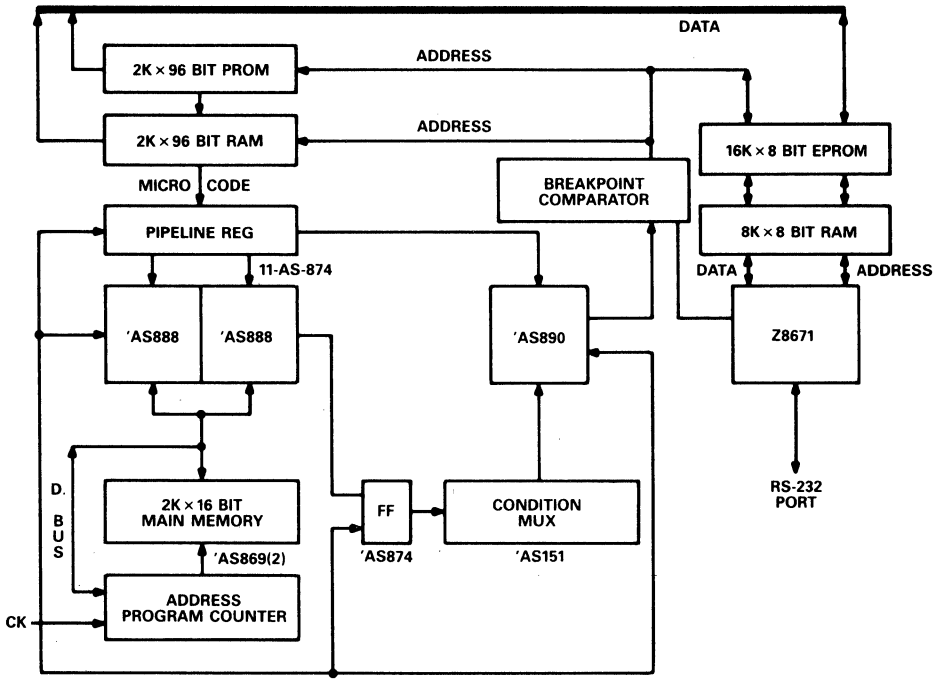
User communication is through an RS-232-C serial port operating at selectable baud rates.

An important feature of the 74AS-EVM-8 system is the use of nonvolatile, battery-backed memory for microprogram storage. When the board is in a stand-alone configuration, up to 16 microprograms can be saved for future use, with an estimated retention time of over 5 years.

Since the 74AS-EVM-8 is a stand-alone system, a host computer is not required. If one is used, additional monitor functions are available through the supplied communications program (TIEVM.EXE. for the TI PC and TIEVMX.EXE for the IBM PC/XT/AT and true compatibles).

Other evaluation modules under development include an 8-bit EVM using the 'AS887 and 'AS890, a 32/bit EVM using the 'AS832 and 'AS835, and an ECL version of the 'AS888/'AS890 EVM. For further details concerning these modules, contact VLSI Systems Engineering, (214) 995-4720.

FUNCTIONAL BLOCK DIAGRAM



74AS-EVM-8

VLSI 32-BIT FAMILY

INTRODUCTION

A new generation of 32-bit VLSI logic devices from Texas Instruments reflects the high degree of system integration made possible by continuing improvements in bipolar and CMOS process technologies. TI will offer nine integrated circuits, including the:

74ACT8832 32-bit registered ALU
74AS8833 64-bit to 32-bit funnel shifter
74AS8834 64-bit by 40-bit register file
74ACT8818 16-bit microsequencer
74ACT8836 32-bit multiplier
74ACT8837 64-bit floating point processor
74AS8838 32-bit barrel shifter.
74AS8839 32-bit shuffle/exchange network
74AS8840 Digital crossbar switch

All the devices except the barrel shifter are designed to support parity checking and generation, as well as master/slave error checking. Pin grid array package sizes range from 84-to 208-pins.

TECHNOLOGY

Fabricated in 1-μm EPIC™ CMOS or IMPACT™ Bipolar technology, this chip set offers a combination of maximum integration and superior performance to the designer. Logic functions fabricated in EPIC technology can operate at clock frequencies up to 150 MHz. EPIC devices combine the performance associated with advanced bipolar processes with the low power consumption typical of CMOS.

In the past, the use of bipolar technology to achieve the complexities required by today's superminicomputer manufacturers was limited by the power dissipation required for high-speed operation.

TI has solved this problem, for the most part, by using a proprietary internal circuitry known as Schottky Transistor Logic (STL) which requires a 2-volt internal V_{CC}. Using two types of contact metallization on the same substrate to achieve a 300 mV noise margin, STL technology has allowed TI to offer VLSI bipolar products that operate at very low power levels.

CHIP SET DEFINITION

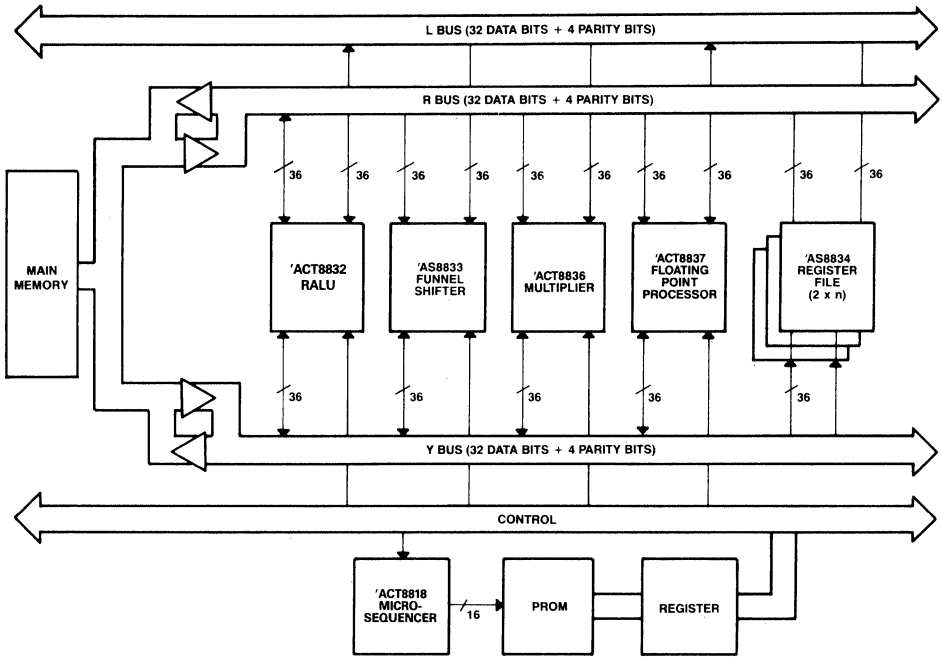
TI's new 32-bit family has been designed to meet the following design criteria:

- 50-75 ns worst case cycle time
- 4 watts maximum power dissipation per package
- scientific accuracy (double precision floating point)
- no elaborate heat sinking required
- no glue logic required
- support 32-bit bus widths (address and data).

TYPICAL APPLICATIONS

These design criteria result in a chip set that is well-suited to the following applications:

- Superminicomputers
- High resolution graphics
- Digital signal processing
- Array processors
- High end engineering workstations
- Artifical intelligence
- Fault tolerant computers.

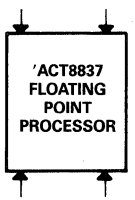


VLSI 32-Bit Family

The 74ACT8832 is a 32-bit registered ALU that can be configured to operate as four 8-bit ALUs, two 16-bit ALUs, or a single 32-bit ALU. The device is 100% upwardly compatible with the 74AS888 bit-slice processor and includes a 64-word by 36-bit register file.

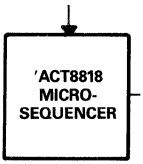
An 74AS8833 64-bit to 32-bit funnel shifter is provided separately from the RALU to increase overall system speed and offer the designer a high degree of flexibility and system parallelism.

The 74ACT8836, a 32-bit by 32-bit integer multiplier accumulator, can handle a wide variety of data types, including two's complement, signed and mixed. It can be configured for pipelined or flow-through operation.



The 74ACT8837 floating point processor is designed with 1-μm CMOS technology. It supports IEEE single and double precision floating point formats and can be configured for pipelined or flow-through operations.

An 74AS8834 64-word by 40-bit register file expands the internal register files of the 74AS8832. Four address ports operate independently to support most significant half and least significant half swap operations.



The 74ACT8818 16-bit microsequencer can address 64K of microcode memory. A 68-word by 20-bit push down stack permits address and status information to be stored during subroutine calls and interrupts.

SN74ACT8832 32-Bit ALU

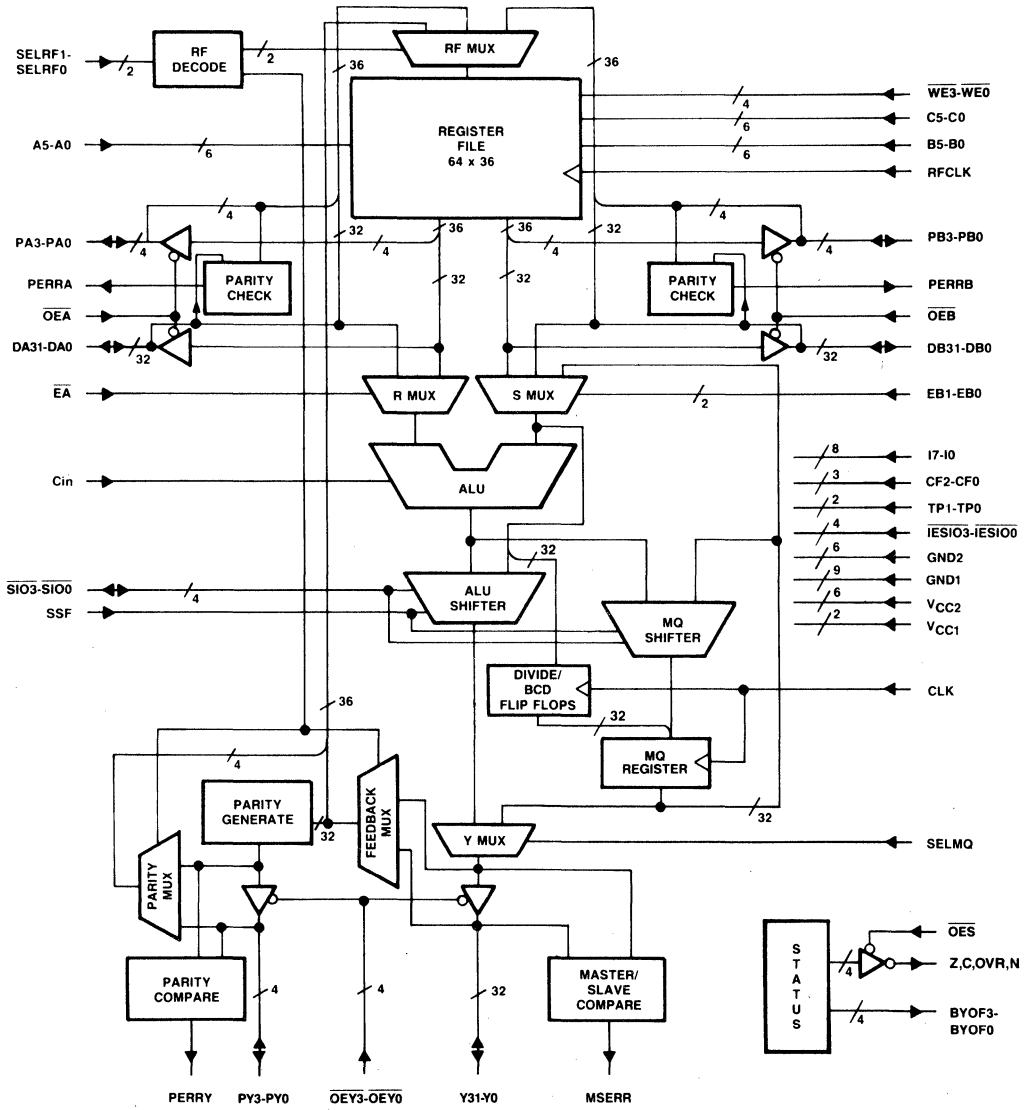
The 74ACT8832 is a CMOS 32-bit registered ALU that can be configured to operate as four 8-bit ALUs, two 16-bit ALUs or a single 32-bit ALU. The processor's instruction set is 100% upwardly compatible with the 74AS888 and includes 13 arithmetic and logical functions with 8 conditional shifts, multiplication, division, normalization, add and subtract immediate, bit and byte operations, and data conversions such as BCD, excess-3, and sign magnitude.

Additional functions added to the 74ACT8832 include byte parity and master/slave operation. Parity is checked at the three data input ports and generated at the Y output port. The 64-word register file is 36-bits wide to permit storage of the parity bits. Master/slave comparator circuitry is provided at the Y port.

The DA and DB ports can simultaneously input data to the ALU or the 64-word by 36-bit register file. A separate clock on the register file allows multiple writes to the file during a single cycle. Data and parity from the register file can be output on the DA and DB ports. Results of ALU and shift operations are output at the bidirectional Y port. The Y port can also be used in an input mode to furnish external data to the register file or during master/slave operation as an input to the master/slave comparator.

An MQ shifter and MQ register can also be configured to function independently, allowing double-precision 8-bit, 16-bit and 32-bit shift operations.

- Compatible with 74AS888 architecture and instruction set
- 3-Port I/O architecture
- Simultaneous ALU and register operations
- 64-Word by 36-Bit register file
- Bit, byte, 16-bit and 32-bit operations
- Configurable as quad 8-bit or dual 16-bit single instruction, multiple data machine
- Parity generation and checking
- Master/slave circuitry
- 208-pins
- 1-μm EPIC™ CMOS technology


SELRF1-
SELRF0
RF
DECODE
RF MUX
REGISTER
FILE
64 x 36
A5-A0
WE3-WE0
C5-C0
B5-B0
RFCLK
PA3-PA0
PB3-PB0
PERRA
PARITY
CHECK
PARITY
CHECK
PERRB
OEA
OEB
DA31-DA0
DB31-DB0
EA
R MUX
S MUX
EB1-EB0
Cin
ALU
I7-I0
CF2-CF0
TP1-TP0
IESIO3-IESIO0
GND2
GND1
VCC2
VCC1
SIO3-SIO0
SSF
ALU
SHIFTER
MQ
SHIFTER
DIVIDE/
BCD
FLIP FLOPS
CLK
MQ
REGISTER
PARITY
GENERATE
FEEDBACK
MUX
Y MUX
SELMQ
PARITY
MUX
PARITY
COMPARE
MASTER/
SLAVE
COMPARE
STATUS
OES
Z,C,OVR,N
BYOF3-
BYOF0
PERRY
PY3-PY0
OEY3-OEY0
Y31-Y0
MSERR

32-Bit RALU

SN74ACT8818 16-Bit Microsequencer

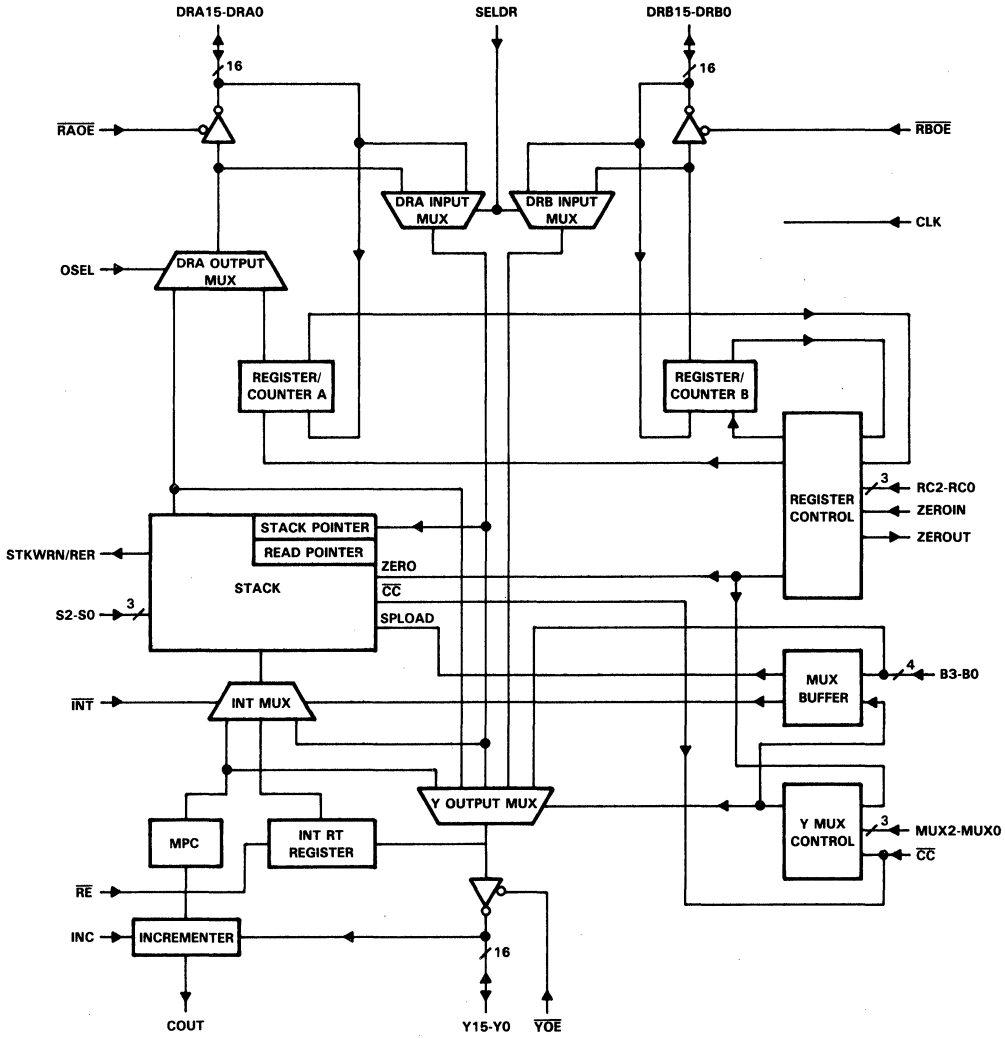
The 74ACT8818 is a 16-bit microsequencer designed to support high-speed 32-bit systems. The sequencer can address 64K of microcode memory and is compatible with the 14-bit 74AS890. A 65-word- deep by 20-bit-wide push down stack permits address and processor status information to be stored during subroutine calls and interrupts. The stack pointer can be loaded and read from the external DRA port. This provides opportunities for stack expansion, random access to the stack and implementation of multiple stacks.

Like the 74AS890, separate control of register counters, stack and Y-output multiplexer allow the designer to merge basic operations, such as doubly nested loops, n-way branches, conditional branches and subroutine calls and returns in a large number of complex single instructions. In addition, an ALU is provided to compute a relative address by adding the contents of the DRA bus to the contents of the microprogram register. Sixteen signals at the B port in combination with four external status signals provide sixteen-way branch capability selectable from five sources. Eight additional external status pins and internal status generation logic provide the designer with increased flexibility for status signal and condition code select configurations.

Input to the chip is through two external data ports, DRA and DRB, or by means of the bidirectional Y port, which also outputs the current address generated by the sequencer. Other components include a 16-bit microprogram counter consisting of a register and incrementer that generates the next sequential address; two register/counters for counting loops and iterations, and storing branch addresses; a trap register; a breakpoint comparator with upper and lower limits; an interrupt return register and Y output enable for interrupt processing at the microinstruction level; and a Y output multiplexer by which the next address can be selected from the microprogram counter, register counters, external data buses DRA and DRB, or top of stack.

The 74ACT8818 will be offered in a 156-pin package.

- 16-Bit address bus allows up to 64K of control store
- Compatible with 74AS890 architecture and instruction set
- 65-word stack
- 20-bit stack width allows storage of status bits
- Shadow registers for diagnostics
- Supports real time interrupts, trap interrupts, hardware breakpoints, 16-way branching, decrement-to-zero status, read and write stack pointers, master/slave checking
- Master/slave circuitry
- 156-pin package
- 1-μm EPIC™ CMOS technology



SNACT8818 16-Bit Microsequencer

SN74ACT8836 32-Bit by 32-Bit Multiplier

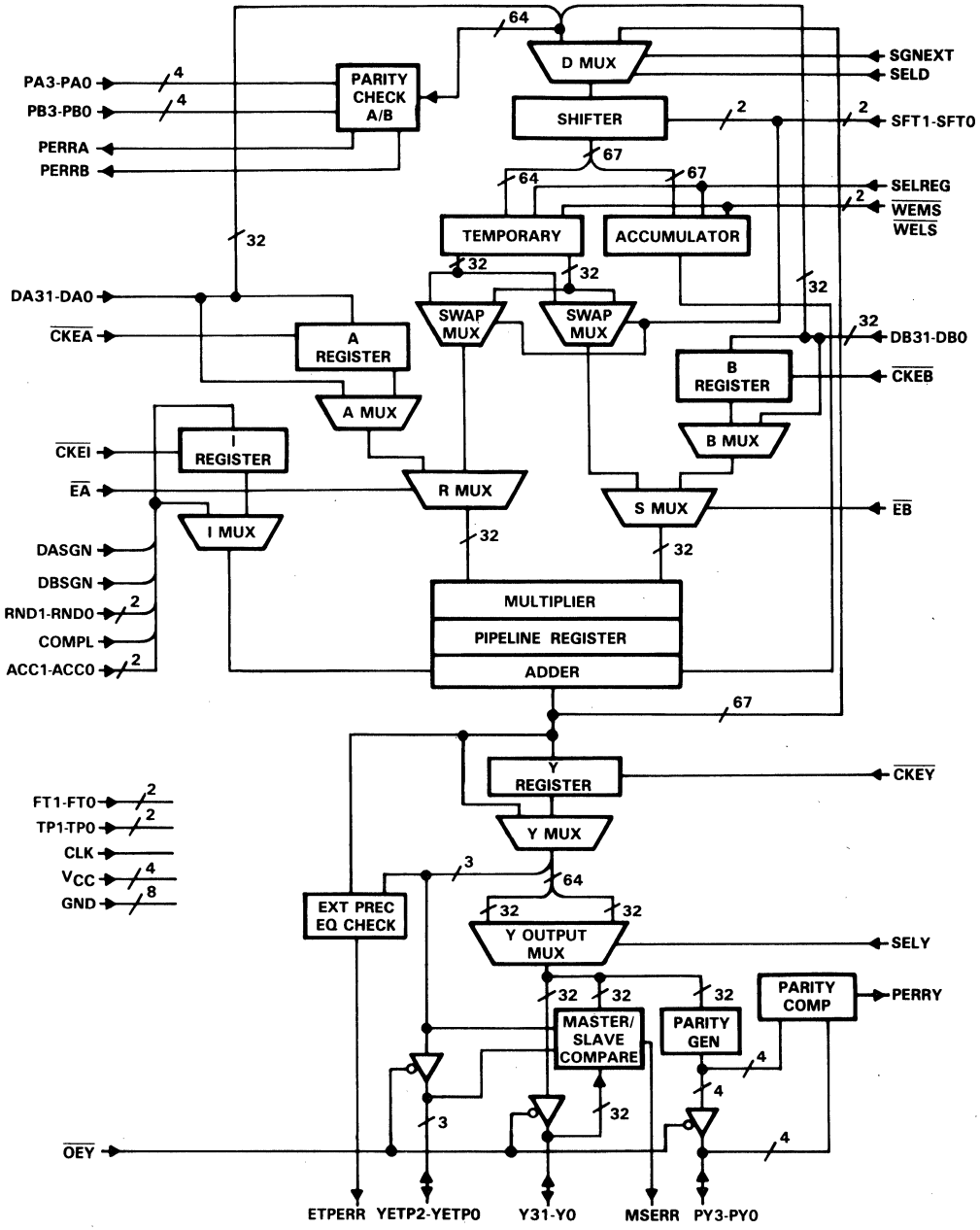
The SN74ACT8836 is a 32-bit by 32-bit integer multiplier/accumulator. Data input is through two registered 32-bit ports, DA and DB; output is through the registered 32-bit Y port. The registers have independent enable signals but are controlled by the same clock and may be made transparent for feed-through operation.

The device can handle a wide variety of data types, including two's complement, signed and mixed, and can also operate as a 64-bit by 64-bit multiplier. Seven clock cycles are required to perform a 64-bit by 64-bit multiply and multiplex the 128-bit result.

A multiply accumulate mode is provided to add or subtract the accumulator from the product. In this mode, three overflow bits are provided, resulting in a 67-bit result. All 67 bits are presented externally with an overflow warning flag that indicates whether overflow has occurred.

A rounding feature in the 74ACT8836 provides for rounding up the most significant 16-bits of the product when only a 16-bit result is desired. To ensure data integrity, byte parity checking is performed on both input ports, and a parity generator and a master/slave comparator are provided at the output.

- 32-bit by 32-bit integer multiplier/accumulator
- Can perform 64-bit by 64-bit operations
- Accumulator bypass option
- Overflow status
- Signed, unsigned or mixed operands
- Parity generation/checking
- Master/slave circuitry
- 156-pin package
- 1-μm EPIC™ CMOS technology



32-Bit by 32-Bit Multiplier

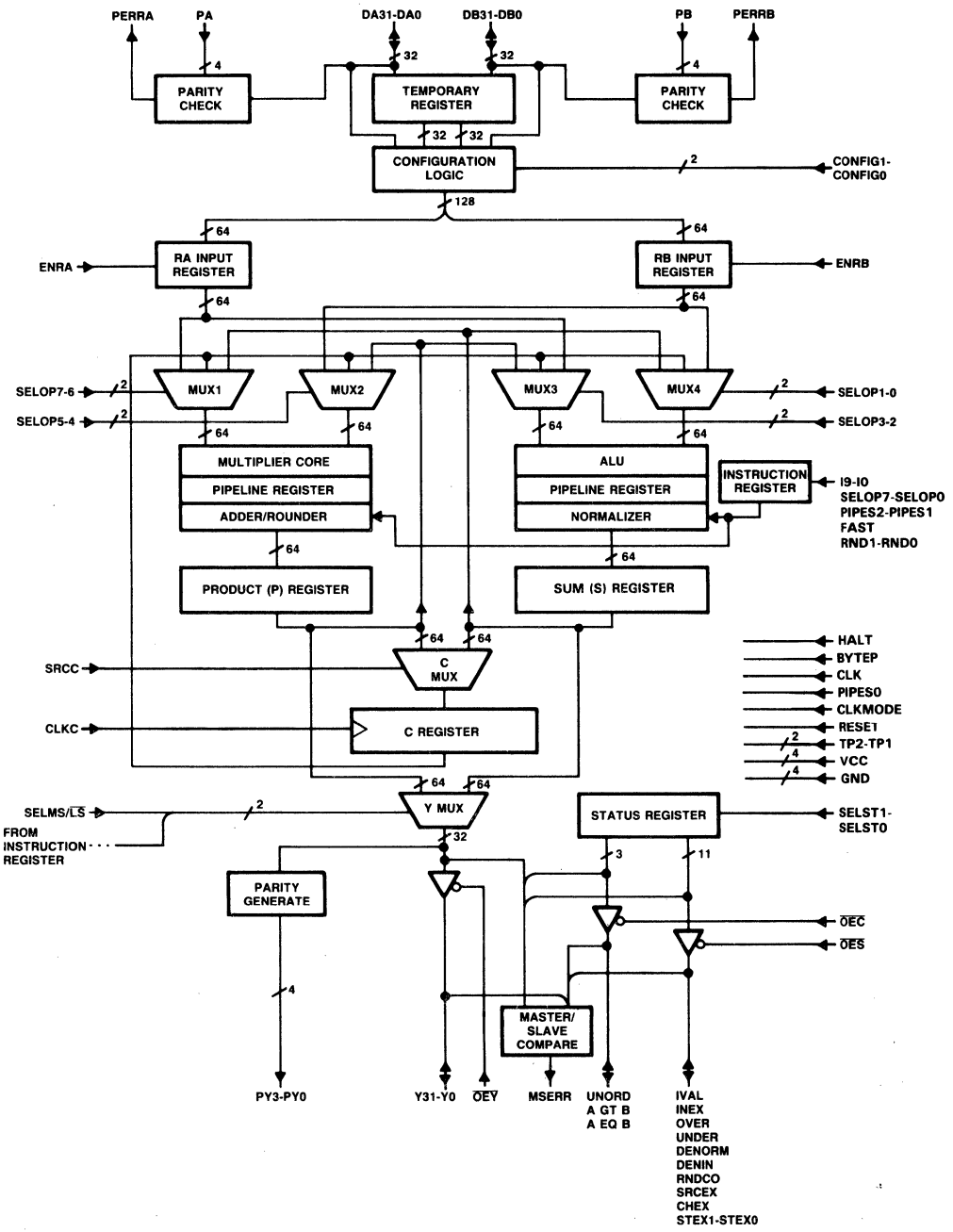
SN74ACT8837 64-Bit Floating Point Processor

The SN74ACT8837 is a high speed floating point processor implemented in TI's advanced 1-μm CMOS technology. The device is fully compatible with IEEE standard 754 version 10.1 for addition, subtraction and multiplication. Division is also supported using the Newton/Raphson algorithm.

Division is made possible by a sum-of-products operating mode, one of two modes in which the device's multipler and ALU operate in parallel. Absolute value, conversion to and from 32-bit two's complement integers and a compare instruction are also included.

The 74ACT8837's pipeline registers can be bypassed, providing a flow-through architecture. The input buses can be configured as two 32-bit buses or as a single 64-bit bus. A clock option allows the registers to be clocked on the rising edge of the clock or on both the rising and falling edge. Parity checking on the input buses and parity generation on the output bus is also provided. An on-chip master/slave comparator is included for multi-chip fault detection. The device will be packaged in a 208-pin grid array.

- Multiplier and ALU in one chip
- Fully compatible with IEEE standard 754 version 10.1
- Performs addition, subtraction, multiplication
- Performs division using Newton/Raphson algorithm
- Supports sum-of-products and product-of-sum chain operations
- Floating point to integer and integer to floating point conversion
- Can be configured for pipelined or flow-through architecture
- Parity checking/generation
- Master/slave error detection
- 208-pin package
- 1-μm EPIC™ CMOS technology



64-Bit Floating Point Processor

SN74AS8833 64-Bit to 32-Bit Funnel Shifter

The SN74AS8833 64-bit to 32-bit funnel shifter can be used to increase overall speed in systems where multi-bit shift operations and field masking are used frequently. The shifter offers the designer opportunities for increasing system flexibility and achieving high degrees of system parallelism.

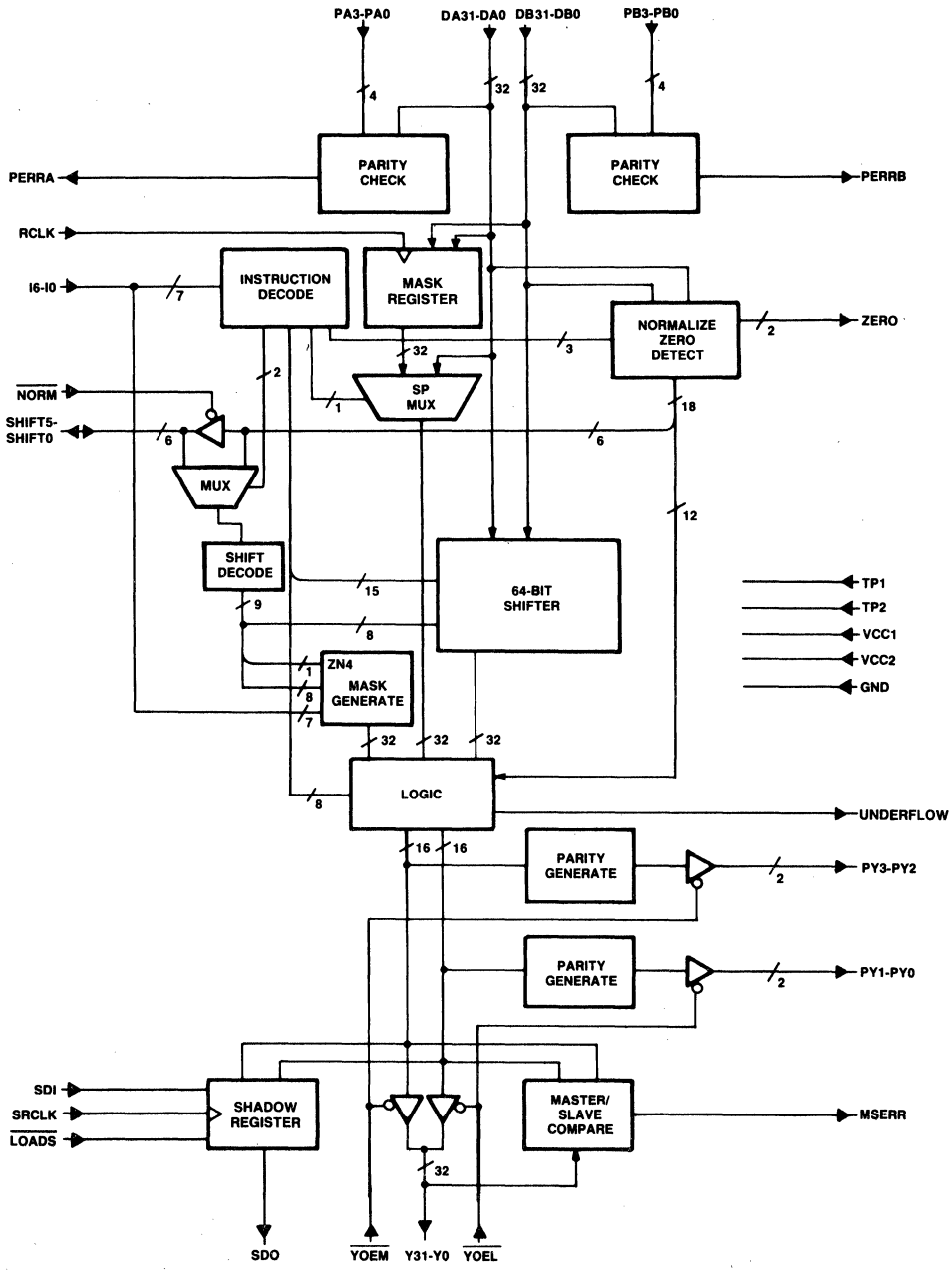
The 64-to-32-bit funnel shifter enlarges the shift capability of TI's 32-bit family. It can perform several AND, OR and XOR operations on any 32-bit field for masking and field merges or extractions and can execute byte and half-word rotations. Any field can be extracted from the 65 input-bits, and subfields of one input data bus can be overlaid onto input from the other. Both single-precision and double-precision shift operations are supported for arithmetic, logical and circular left and right shifts. In addition, single- and double-precision normalization can be performed using the two data formats.

An on-chip shadow register can be used to serially shift out data from the Y-bus for testing or debug operations. Parity generation and checking is also supported.

The device will be offered in a 156-pin package.

- Performs shifting, field extraction, and field overlays
- Performs logical masking
- Performs byte and half word (16-bit) rotations
- Performs normalization for IEEE and IBM floating point formats
- Parity generation/checking
- Master/slave circuitry
- 156-pin package

'AS8833 Instruction Set		
Pass F to Y	Shift instructions	Data Normalization
Half-word (16-bit) rotate	(single- and double-precision)	(single- and double-precision)
Byte rotate	Arithmetic left	IEEE format
F + Mask Register	Arithmetic right	IBM format
F * Mask Register	Logical left	
F XOR Mask Register	Logical right	
Field extract	Circular left	
Field overlay	Circular right	



64/32-Bit Funnel Shifter

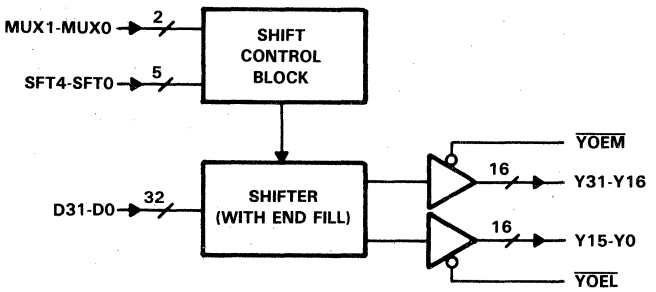
SN74AS8838 32-Bit Barrel Shifter

The SN74AS8838 is a high-speed 32-bit barrel shifter in an 85-pin ceramic pin grid array. The devices can shift up to 32 bits in a single instruction cycle of under 25 ns. Five basic shifts can be programmed: circular left and right; logical left and right; and arithmetic right.

Unlike conventional shift registers, whose shift operations are controlled by the number of input clock pulses applied, the number of positions to be shifted by the 74AS8838 is determined by an input decoder. This form of implementation does not require an input clock; thus the shift operation is restricted only by internal propagation delays. The delay is the same regardless of the number of positions to be shifted, resulting in a high-speed "flash" shift.

Input to the chip is through the 32-bit D data port; output is through two 16-bit Y data ports. Two 3-state output controls enable the Y data ports. A shift control block decodes the instruction inputs and the shift position controls and transmits the resulting control signals to the shifter. MUX1-MUX0 control shift instruction selection, while SFT4-SFT0 specify the number of bit positions to be shifted.

- High-speed "flash" shift operations
- Shifts up to 32 positions in less than 25 ns typical
- Performs logical, circular and arithmetic shifts
- 3-state outputs allow 32-bit and 16-bit bus interface
- 85-pin package
- Uses less than 1.5 W (max)



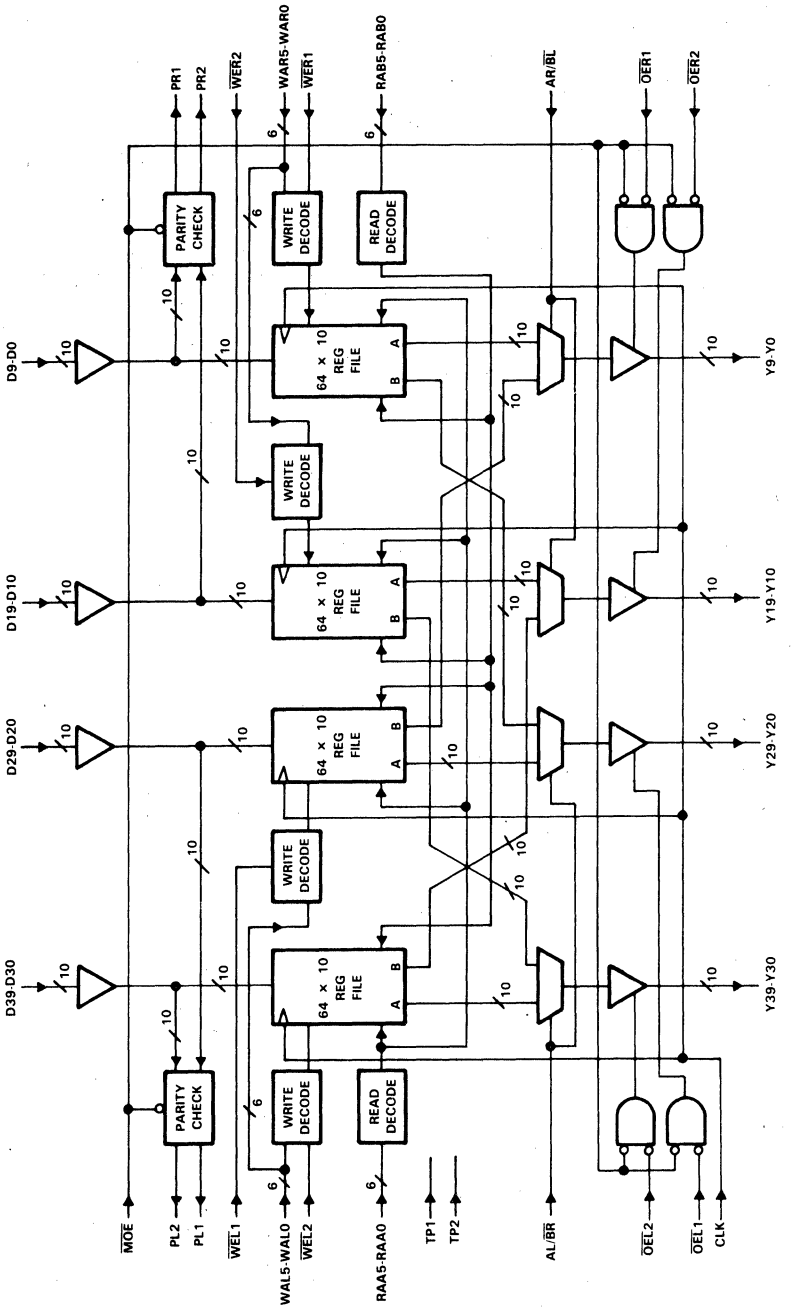
32-Bit Barrel Shifter

SN74AS8834 40-Bit Register File

The SN74AS8834 64-word by 40-bit register file is designed to expand the internal register files of the 74AS8832 32-bit registered ALU or the 74AS888 expandable bit-slice processor. Internal parity checks are provided for each of the four 10-bit data input ports. Data is output through four 10-bit output ports.

Four address ports, two write and two read, operate independently to support MSH/LSH swap operations. Two separate write addresses permit the most significant and the least significant half of a word to be stored at different addresses.

- Three-operand, 64-word by 40-bit register file
- Supports 74AS888 and 74AS8832 register file expansion
- Four 10-bit input ports with individual parity checkers and write enables
- Four 10-bit output ports with individual 3-state enables
- Two write address ports
- Two read addresses and Y output mux permit LSH/MSH swap operations
- 156-pin package



74AS8834 40-Bit Register File

SN74AS8839 32-Bit Shuffle/Exchange Network

DESCRIPTION

The SN74AS8839 is a high-speed 32-bit shuffle/exchange network in an 85-pin ceramic pin-grid array package. The device can perform data permutations on 32-bit, 16-bit, 8-bit, and 4-bit words in a single instruction cycle time of under 25 nanoseconds.

The type of data permutation to be performed is determined by an input decoder. Data manipulation is not clock dependent and is restricted only by internal propagation delays. The delay is the same regardless of the number of positions to be routed, resulting in a high-speed shuffle.

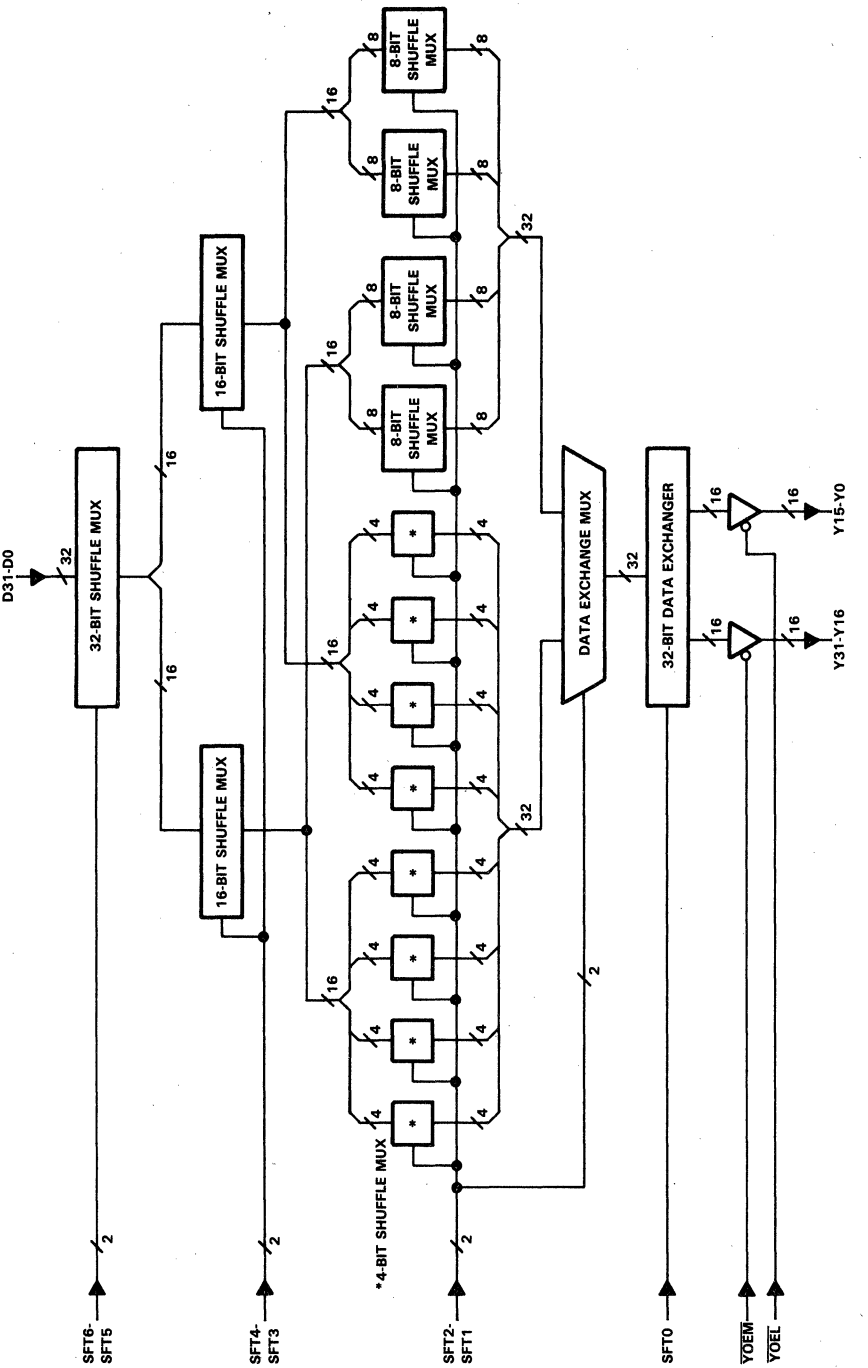
Three-state output controls allow the device to be interfaced with 32-bit or 16-bit data buses.

The shuffle/exchange networks are designed for use primarily in multiple processor applications. The device can be used to implement single-instruction multiple-data (SIMD) array processors. SIMD processors are used in Fast Fourier Transforms (FFTs). An example of an FFT computation using the 'AS8839 is published in a separate brochure entitled "Innovation ... The New 32-bit Shuffle/Exchange Network". The shuffle/exchange networks can also be used for fault-tolerant computer applications.

The SN74AS8839 is characterized for operation from 0 °C to 70 °C.

FEATURES

- High-Speed Data Manipulation
- Shuffles up to 32-Bit Data Streams
- Performs Shuffle and Exchange Permutations on Entire Data Streams or Substrings for Implementing Algorithms and/or Matrix Operations
- 24-mA Bus Drivers
- 3-State Outputs Allow 32-Bit and 16-Bit Bus Interface
- 85-Pin Package



SN74AS8839 32-Bit Shuffle/Exchange Network

SN74AS8840 Digital Crossbar Switch

DESCRIPTION

The 'AS8840 is a high-speed digital crossbar switch with four selectable control sources, including two banks of programmable control flip-flops and two hard-wired control circuits. The device can switch from 1 to 16 nibbles (4 to 64 bits) of data in a single cycle.

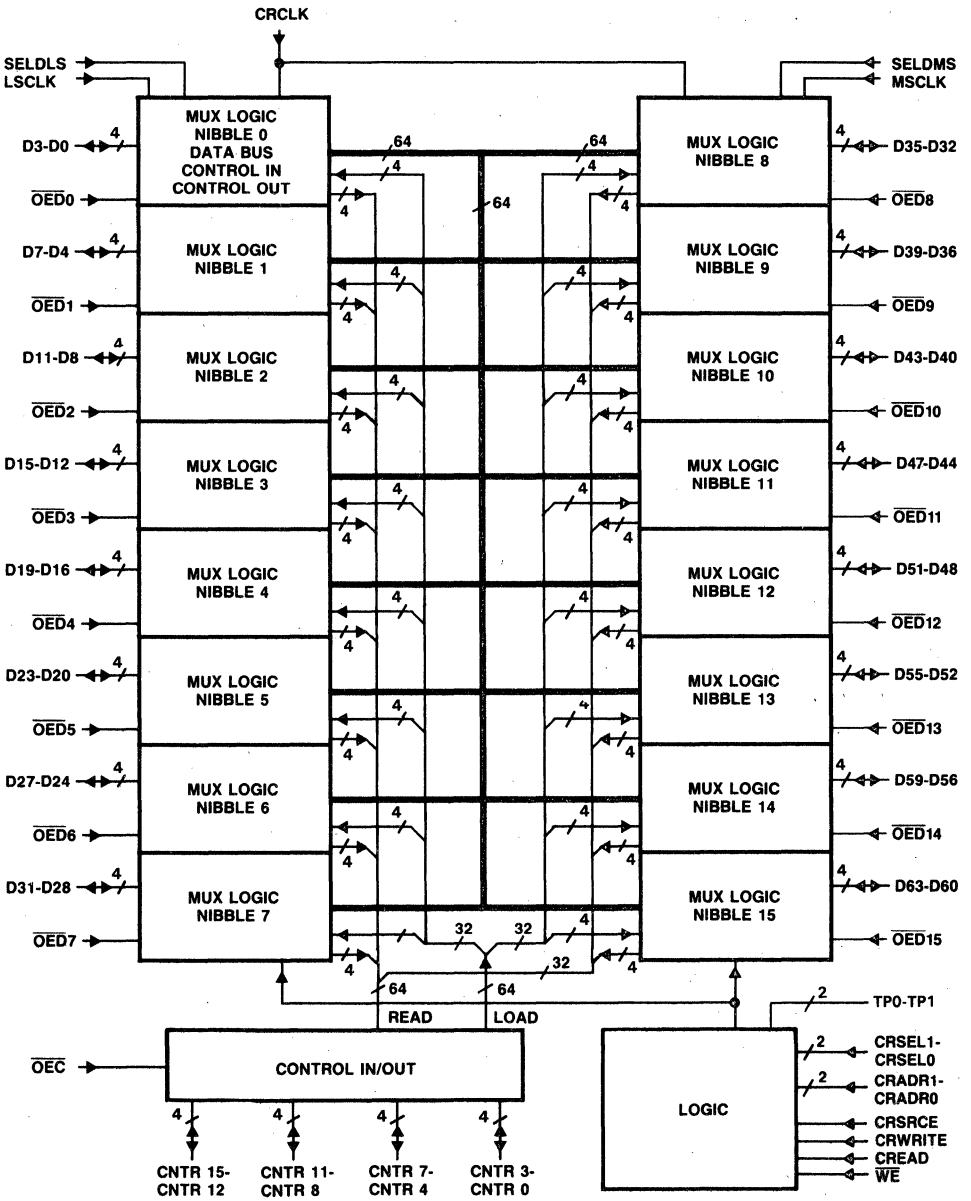
The 'AS8840 has 64 I/O pins arranged in 16 switchable nibbles. A single input nibble can be broadcast to any combination of 15 output nibbles, or even to 16 nibbles (including itself) if operating off registered data. Multiple input nibbles can be switched to multiple outputs, depending on the programmed configurations available in the control flip-flops.

The digital crossbar switch is intended primarily for multiprocessor interconnection and parallel processing applications. The device can be used to select and transfer data from multiple sources to multiple destinations. Since it can be dynamically reprogrammed, it is suitable for use in reconfigurable networks for fault-tolerant routing.

The SN74AS8840 is characterized for operation from 0°C to 70°C.

KEY FEATURES

- Advanced Schottky IMPACT™ Process
- High-Speed Programmable Switch for Parallel Processing Applications
- Dynamically Reconfigurable for Fault-Tolerant Routing
- 64 Bidirectional Data I/Os in 16-Nibble (4-Bit) Groups
- Data I/O Selection Programmable by Nibble
- Selectable Stored-Data or Real-Time Inputs
- Two Banks of Control Flip-Flops for Storing Configuration Programs
- Two selectable Hard-Wired Switching Configurations
- 156-Pin Grid Array Package



SN74AS8840 Digital Crossbar Switch

TACT2150 Cache Address Comparator

DESCRIPTION

This 8-bit-slice cache address comparator consists of a high-speed 512 × 9 static RAM array, parity generator, parity checker, and 9-bit high-speed comparator. It is fabricated using advanced CMOS technology for high-speed, low-power interface with bipolar TTL circuits. The cache address comparator is easily cascadable for wider tag addresses or deeper tag memories. Significant reductions in cache memory component count, board area, and power dissipation can be achieved with this device.

When $\overline{S}$ is low and $\overline{W}$ is high, the cache address comparator compares the contents of the memory location addressed by A0-A8 with the data on D0-D7 plus generated parity. An equality is indicated by the high level on the MATCH output. A low-level output from $\overline{PE}$ signifies a parity error in the internal RAM data. $\overline{PE}$ is an N-channel open-drain output for easy OR-tying. During a write cycle ($\overline{S}$ and $\overline{W}$ low), data on D0-D7 plus generated even parity are written in the 9-bit memory location addressed by A0-A8. Also during write, a parity error may be forced by holding $\overline{PE}$ low.

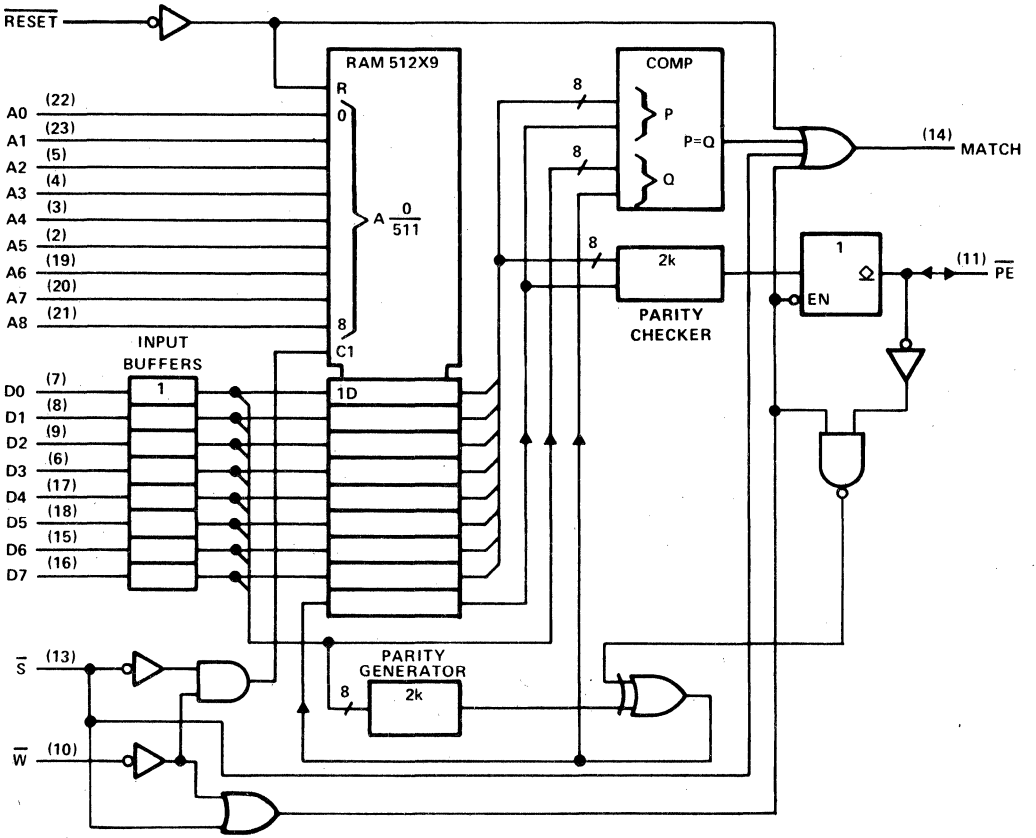
A $\overline{RESET}$ input is provided for initialization. When $\overline{RESET}$ goes low, all 512 × 9 RAM locations are cleared to zero (with valid parity) and the MATCH output is forced high. If an input data word of zero is compared to any memory location that has not been written into since reset, MATCH will be high indicating that input data, plus generated parity, is equal to the reset memory location. $\overline{PE}$ will be high for every addressed memory location after reset indicating no parity error in the RAM data. By tying a single data input pin high, this bit will function as a valid bit and a match will not occur unless data has been written into the addressed memory location. When cascading in the width direction, only one bit needs to be tied high regardless of the address width.

The TACT2150 operates from a single 5 V supply and is offered in a 24-pin 300-mil ceramic side-brazed and plastic "Small Outline" packages. The device is fully TTL compatible and is characterized for operation for 0°C to 70°C.

KEY FEATURES

- Fast Address to Match Valid Data
- Two Speed Ranges: 20 ns, 30 ns
- 512 × 9 Internal RAM
- 300-Mil 24-Pin Ceramic Side-Brazed or Plastic Dual-in-Line or Small Outline Packages
- 53 mA Typical Supply Current
- On-Chip Parity Generation and Checking
- Parity Error Output/Force Parity Error Input
- On-Chip Address/Data Comparator
- Asynchronous, Single-Cycle Reset
- Easily Expandable
- Fully Static
- Reliable Advanced CMOS Technology
- Fully TTL Compatible

FUNCTION BLOCK DIAGRAM



TACT2150

SN74ALS2967 and SN74ALS2968 Dynamic RAM Controller

KEY FEATURES

- Provides Control for 16K, 64K, and 256K Dynamic RAMs
- Highest-Order Two-Address Bits Select One of Four Banks of RAMs
- Supports Scrubbing Operations and Nibble-Mode Access
- Separate Output Enable for Multi-Channel Access to Memory
- 48-Pin Dual-In-Line Package

DESCRIPTION

The 'ALS2967 and 'ALS2968 dynamic memory controllers (DMCs) are designed for use in today's high-performance memory systems. The DMC acts as the address controller between any processor and dynamic memory array.

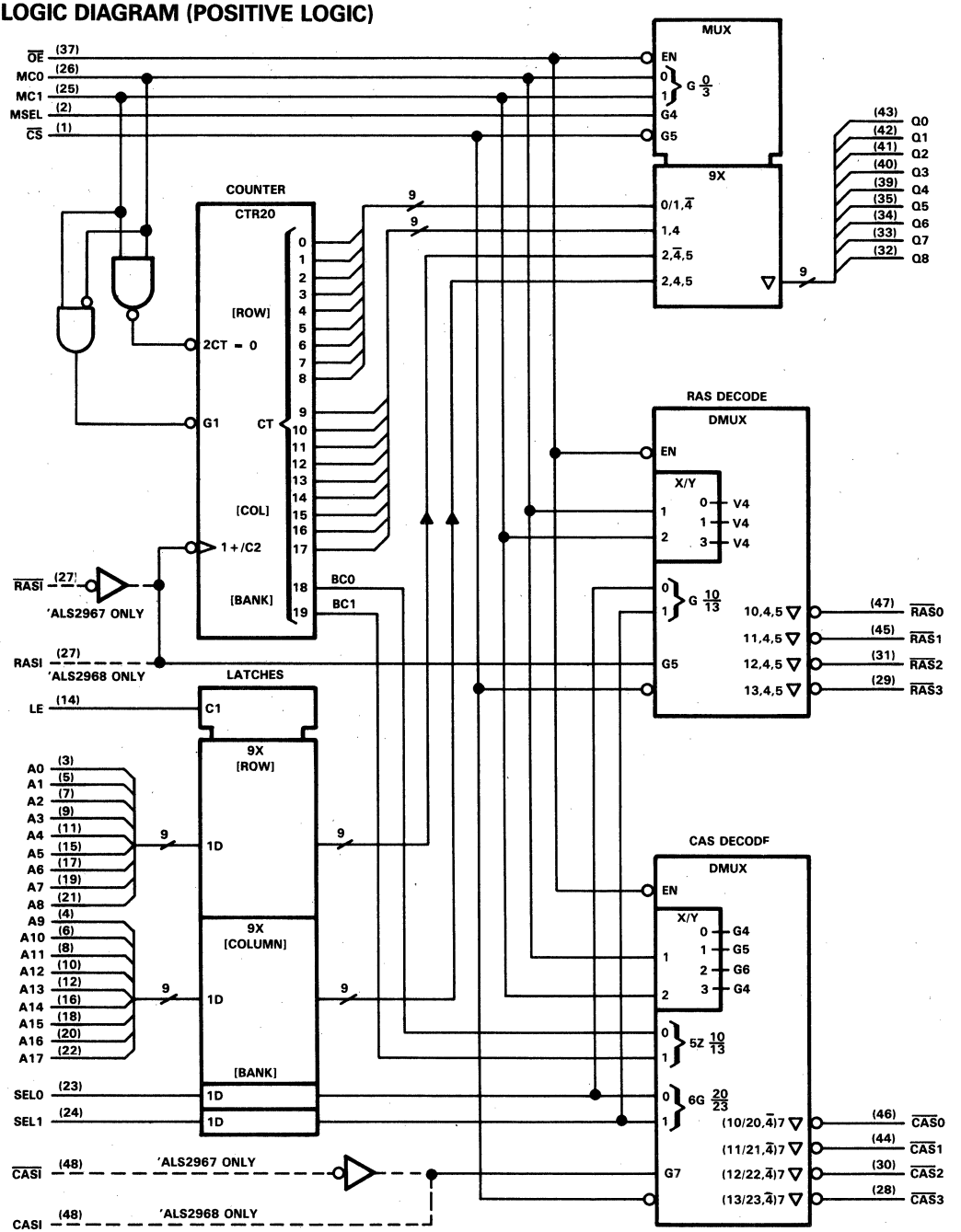
Two versions are provided that help simplify interfacing to the system dynamic timing controller. The 'ALS2967 offers active-low Row Address Strobe Input ($\overline{\text{RASI}}$) and Column Address Strobe Input ($\overline{\text{CASI}}$), while the 'ALS2968 offers active-high Row Address Strobe Input (RASI) and Column Address Strobe Input (CASI) inputs.

Using two 9-bit address latches, the DMC will hold the row and column addresses for any DRAM up to 256K. These latches and the two row/column refresh address counters feed into a 9-bit, 4-input MUX for output to the dynamic RAM address lines. A 2-bit bank select latch is provided to select one of the four $\overline{\text{RAS}}$ and $\overline{\text{CAS}}$ outputs. The two bits are normally obtained from the two highest-order address bits.

The 'ALS2967 and 'ALS2968 have two basic modes of operation, read/write and refresh. During normal read/write operations, the row and column addresses are multiplexed to the dynamic RAM, with the corresponding $\overline{\text{RAS}}$ and $\overline{\text{CAS}}$ signals activated to strobe the addresses into the RAM. In the refresh mode, the two counters cycle through the refresh addresses. If memory scrubbing is not being implemented, only the row counter is used. When memory scrubbing is being performed, both the row and column counters are used to perform read-modify-write cycles. In this mode all $\overline{\text{RAS}}$ outputs will be active (low) while only one $\overline{\text{CAS}}$ output is active at a time.

The SN74ALS2967 and SN74ALS2968 are characterized for operation from 0°C to 70°C.

LOGIC DIAGRAM (POSITIVE LOGIC)



SN74ALS6301 and SN74ALS6302

SN74ALS6301 and SN74ALS6302 Dynamic RAM Controller

FEATURES

- Provides Control for 16K, 64K, 256K, and 1M Dynamic RAMs
- Highest-Order Two-Address Bits Select One of Four Banks of RAMs
- Supports Scrubbing Operations and Nibble-Mode Access
- Separate Output Enable for Multi-Channel Access to Memory
- 52-Pin Dual-In-Line Package

DESCRIPTION

The 'ALS6301 and 'ALS6302 dynamic memory controllers (DMCs) are designed for use in today's high-performance memory systems. The DMC acts as the address controller between any processor and dynamic memory array.

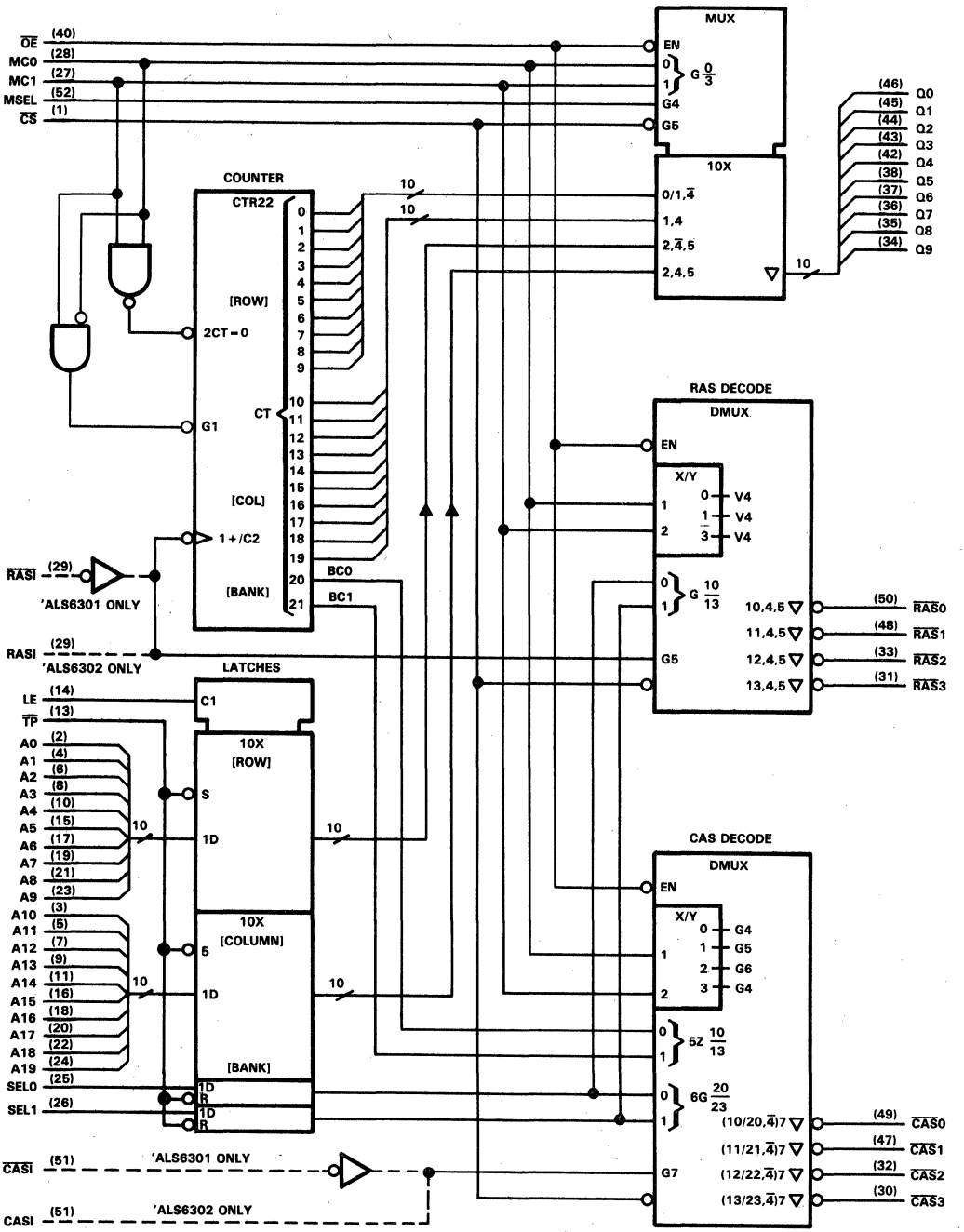
Two versions are provided that help simplify interfacing to the system dynamic timing controller. The 'ALS6301 offers active-low Row Address Strobe Input ($\overline{\text{RASI}}$) and Column Address Strobe Input ($\overline{\text{CASI}}$), while the 'ALS6302 offers active-high Row Address Strobe Input (RASI) and Column Address Strobe Input (CASI) inputs.

Using two 10-bit address latches, the DMC will hold the row and column addresses for any DRAM up to 1M. These latches and the two row/column refresh address counters feed into a 10-bit, 4-input MUX for output to the dynamic RAM address lines. A 2-bit bank select latch is provided to select one of the four $\overline{\text{RAS}}$ and $\overline{\text{CAS}}$ outputs. The two bits are normally obtained from the two highest-order address bits.

'ALS6301 and 'ALS6302 have two basic modes of operation, read/write and refresh. During normal read/write operations, the row and column addresses are multiplexed to the dynamic RAM, with the corresponding $\overline{\text{RAS}}$ and $\overline{\text{CAS}}$ signals activated to strobe the addresses into the RAM. In the refresh mode, the two counters cycle through the refresh addresses. If memory scrubbing is not being implemented, only the row counter is used. When memory scrubbing is being performed, both the row and column counters are used to perform read-modify-write cycles. In this mode al $\overline{\text{RAS}}$ outputs will be active (low) while only one $\overline{\text{CAS}}$ output is active at a time.

The SN74ALS6301 and SN74ALS6302 are characterized for operation from 0°C to 70°C.

LOGIC DIAGRAM (POSITIVE LOGIC)



SN74ALS2967 and SN74ALS2968

MILITARY PRODUCTS

The Texas Instruments Military program offers high-reliability integrated circuits covering a wide product spectrum. It is designed to meet and support semiconductor requirements of the military end-equipment manufacturers and users who require high-reliability integrated circuits.

Processing per the requirements of MIL-M-38510 and specified methods in MIL-STD-883 provides the user with a broad selection of high-quality, high-reliability, standard products. Standard process flows include JM38510 (JANB), DESC Military Drawings, and JEDEC Publication 101 Class B (SNJ, JBP, SMJ, B). These flows are backed by a comprehensive Quality Conformance program summarized annually in the Military Products Reliability report.

Texas Instruments is in full support of government and industry standardization programs. To this end, a wide range of products is available processed per the above standard flows. Particular emphasis is being placed on both JM38510 and DESC Military Drawings.

Contents **Page**

Overview 5-2
Military Product Flows 5-2
Logic Nomenclature 5-2
Programmable Array Logic Nomenclature 5-3
Linear Control Circuits Nomenclature 5-4
LinCMOS Op Amp Nomenclature 5-4
Interface Circuits Nomenclature 5-5
Bipolar Memory Nomenclature 5-6
MOS Memory Nomenclature 5-7
Digital Signal Processor Nomenclature 5-7
Microprocessor/Peripheral Nomenclature 5-8
JM38510/JANB Part Numbers 5-9
Packages 5-10
DESC Military Drawings 5-11
JAN Integrated Circuits and Generic Type Cross Reference 5-12
Generic Type and JAN Device Cross-Reference Guide 5-20
DESC Cross-Reference Guide 5-24

OVERVIEW

PRODUCT LINE	PROCESSING FLOWS	TYPES
Logic	SN, SNJ, JANB	54TTL 54S 54LS 54ALS 54AS 54HC 54HCT
	B	PAL®
Linear	SN, SNJ, JANB, B	Interface, Control
MOS Memory	SMJ	EPROM, DRAM, SRAM
Bipolar Memory	JBP, SNJ	PROM, RAM
Microprocessor	SMJ N	32010 9989

PAL® is a registered trademark of Monolithic Memories, Inc.

MILITARY PRODUCT FLOWS

PROCESS LEVEL	PREFIX SUFFIX	DESCRIPTION
JM38510 Class B	JANB	Qualified per MIL-M-38510 Class B. Produced in DESC certified production facilities.
DESC	SNJ, B	Certified and symbolized to the DESC Military Drawing where TI is an approved source.
Class B	SNJ, B	Screened per requirements of MIL-STD-883 Class B Method 5004. Conforms to the requirements of JEDEC Publication 101. (For detailed screening information, see Military Products Designers Reference Guide (SG42001).)
Military Temperature Range	SN54	Standard Commercial Processing

LOGIC NOMENCLATURE

Example: SNJ 54 LS00 J

Prefix
SN = Standard Prefix, Commercial Processing
SNJ = Class B Process Option
JANB = JM38510 Qualified

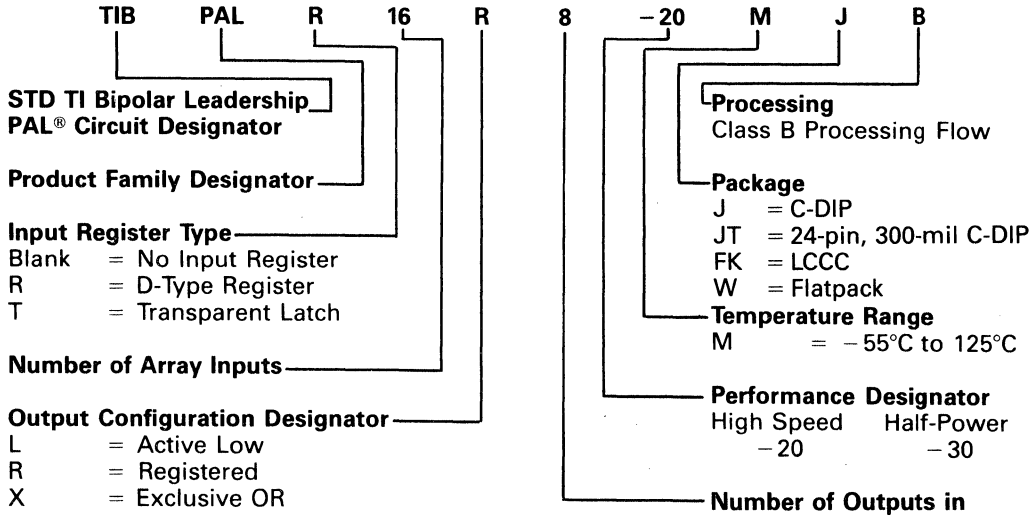
Military Temperature Range
54 = −55°C to 125°C

Circuit Designator
Blank = Standard TTL
LS = Low-Power Schottky TTL
S = Schottky TTL
ALS = Advanced Low-Power Schottky TTL
AS = Advanced Schottky TTL
HC = High-Speed CMOS
HCT = TTL-compatible HCMOS

Package
J = C-DIP
JT = 24-pin, 300-mil C-DIP
FK = LCCC
W = Flatpack

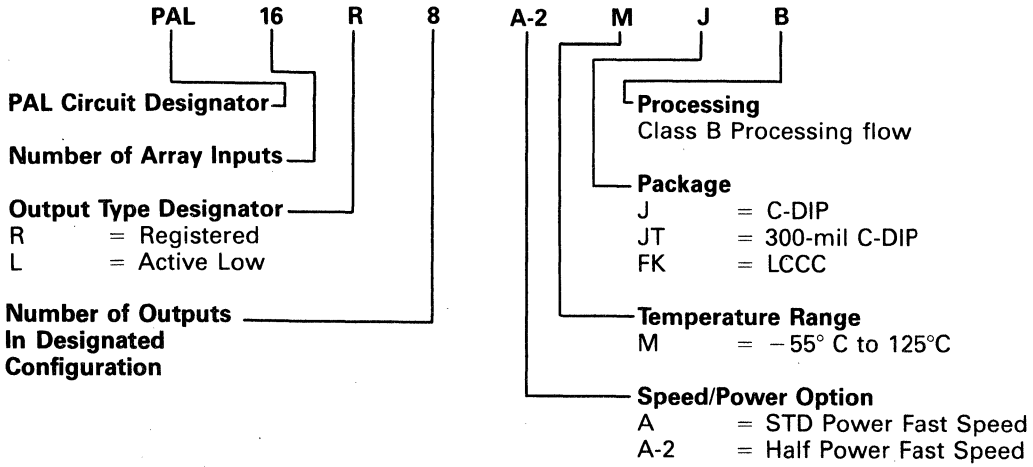
PROGRAMMABLE ARRAY LOGIC NOMENCLATURE

PAL® Nomenclature (Industry Leadership Part Types)

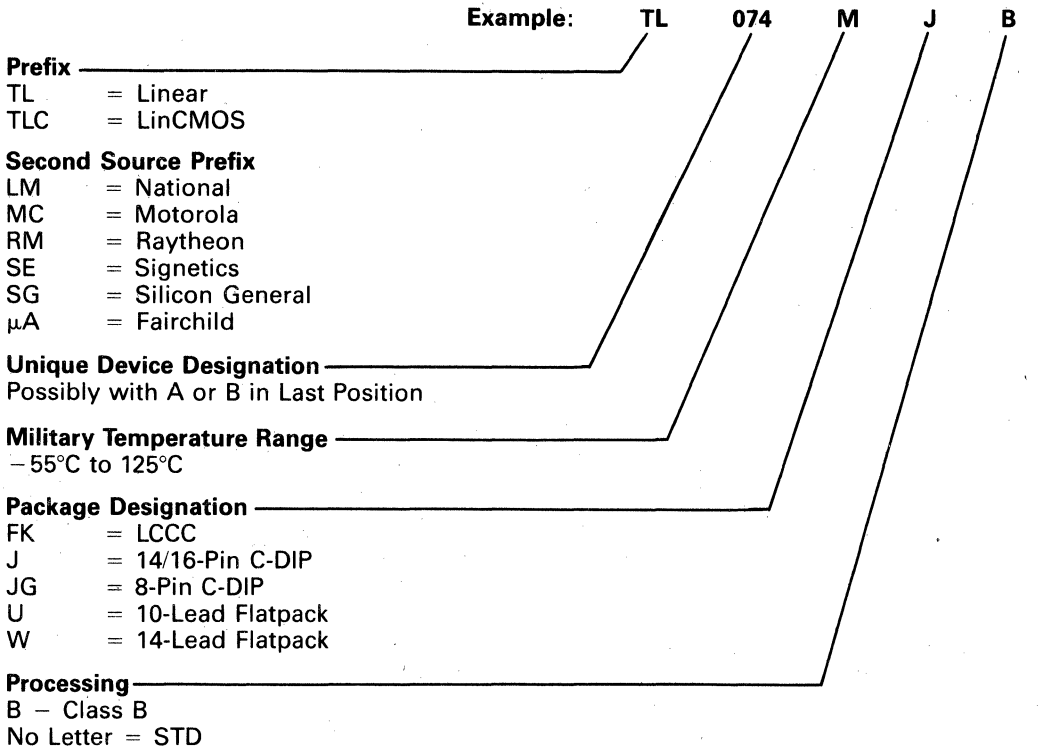


PAL — Registered trademark of Monolithic Memories Inc.

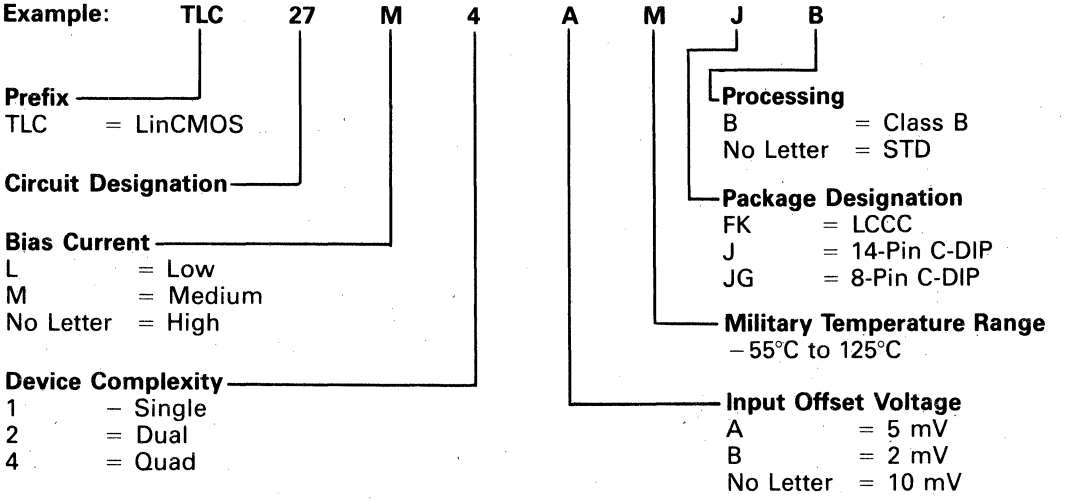
PAL® Nomenclature (Industry Standard Part Types)



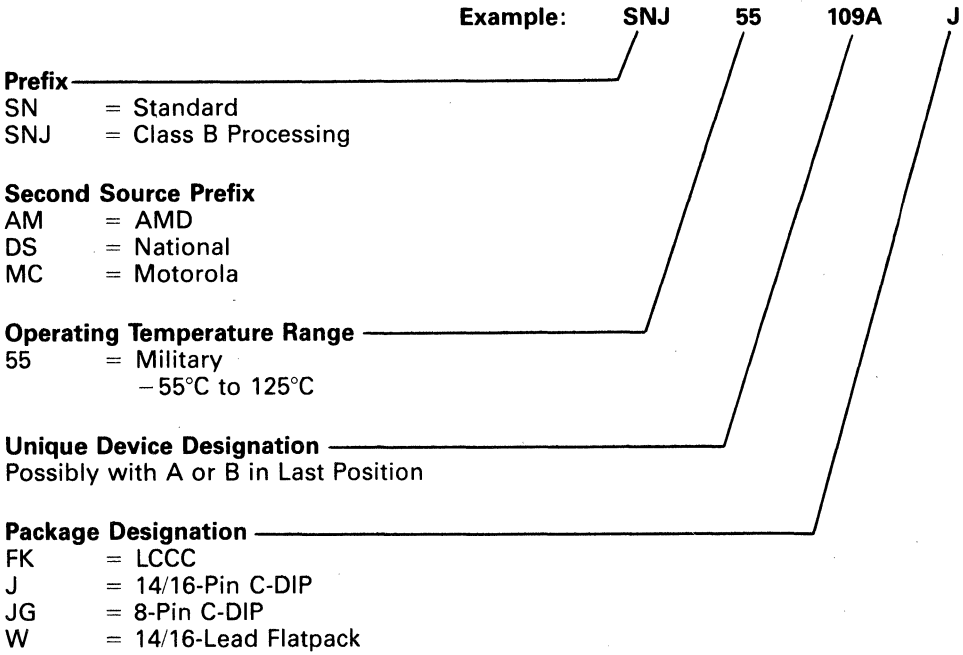
LINEAR CONTROL CIRCUITS NOMENCLATURE



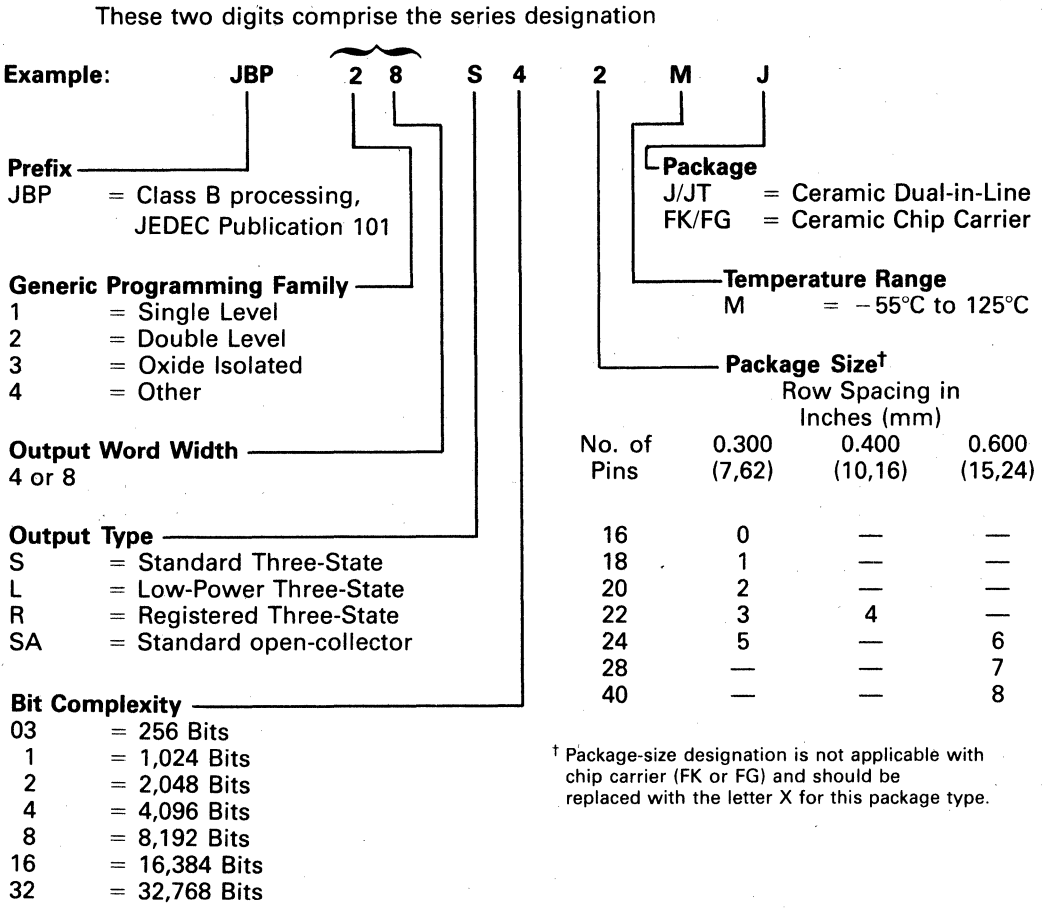
LinCMOS OP AMP NOMENCLATURE



INTERFACE CIRCUITS NOMENCLATURE



BIPOLAR MEMORY NOMENCLATURE



No. of Pins	Row Spacing in Inches (mm) 0.300 (7,62)	0.400 (10,16)	0.600 (15,24)
16	0	—	—
18	1	—	—
20	2	—	—
22	3	4	—
24	5	—	6
28	—	—	7
40	—	—	8

† Package-size designation is not applicable with chip carrier (FK or FG) and should be replaced with the letter X for this package type.

MOS MEMORY NOMENCLATURE

Example: **SMJ** **4164** **−15** **JD** **S**

Prefix
SM = Standard Prefix, Commercial Processing
SMJ = Class B Processing, JEDEC Publication 101

Circuit Designator
Must contain four characters

Access Time
Device types are available with various speeds

Package
Must contain one or two letters J, JD, FG

Temperature Range
Must contain one letter only
M = −55° to 125°C
S = −55° to 100°C (except 4164 & 4256 which are −55°C to 110°C)
E = −40° to 85°C
L = 0° to 70°C

DIGITAL SIGNAL PROCESSOR NOMENCLATURE

SMJ **320** **10** **JD** **S**

Prefix
SM
SMJ = Class B Processing

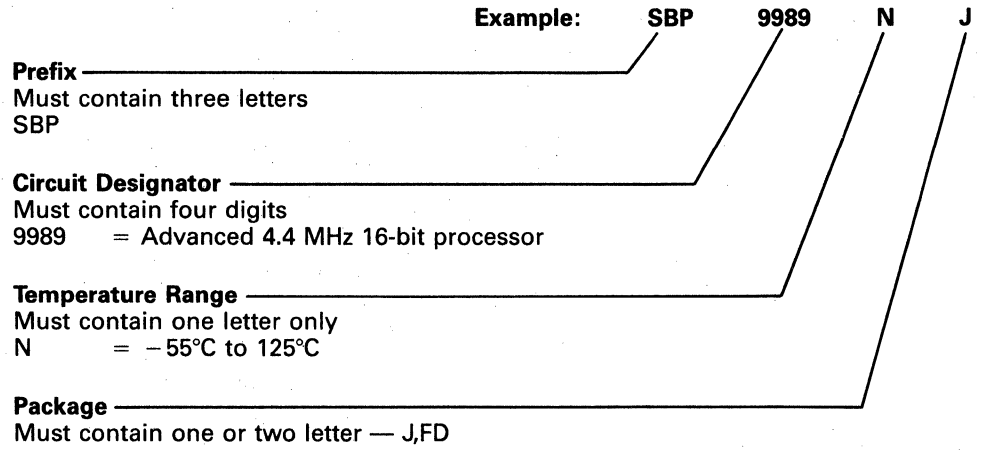
320 DSP Family Designator

320 DSP Family Member Designator

Package
JD = Side-Brazed DIP
FD = LCCC

Temperature Range
L = 0°C to 70°C
S = −55°C to 100°C

MICROPROCESSOR/PERIPHERAL NOMENCLATURE

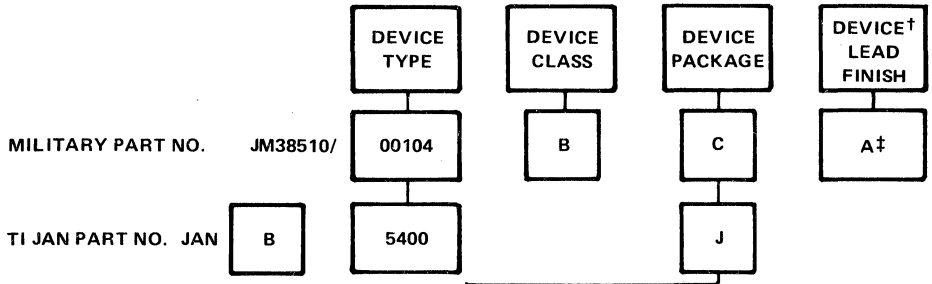


JM38510/JANB

Texas Instruments devices listed as JANB and marked JM38510 are qualified and have government endorsement under MIL-M-38510. These products are in full compliance with the military detail specifications and are listed on the Qualified Products List (QPL). They are produced in DESC certified production facilities.

PART NUMBER CROSS REFERENCE GUIDE

Example: 5400 TTL NAND gate in ceramic dual-in-line package to JM38510 Class B with standard solder dipped leads.



CASE OUTLINE							
JAN CODE	38510 APP/C	DESCRIPTION	TI CODE	JAN CODE	38510 APP/C	DESCRIPTION	TI CODE
A	F-1	14-Pin F/P 1/4" × 1/4"	NA	K	F-6	24-Pin F/P 3/8" × 5/8"	W (Note 1)
B	F-3	14-Pin F/P 3/16" × 1/4"	NA	L	D-9	24-Pin CDIP (300 MIL)	JT
C	D-1	14-Pin CDIP	J	M	A-3	12-Pin CAN (TO-101)	NA
D	F-2	14-Pin F/P 1/4" × 3/8"	W	P	D-4	8-Pin CDIP	JG
E	D-2	16-Pin CDIP	J	Q	D-5	40-Pin CDIP	NA
F	F-5	16-Pin F/P 1/4" × 3/8"	W	R	D-8	20-Pin CDIP	J
G	A-1	8-Pin CAN (TO-99)	NA	S	F-9	20-Pin F/P 1/4" × 1/2"	W
H	F-4	10 Pin F/P 1/4" × 1/4"	NA	V	D-6	18-Pin CDIP	NA
I	A-2	10 Pin CAN (TO-100)	NA	2	C-2	20-Pad Sq Chip Carrier	FD/FK
J	D-3	24-Pin CDIP	J	3	C-4	28-Pad Sq Chip Carrier	FD/FK

† Solder dip lead finish normally supplied by TI.
‡ Lead finish designators: A = solder dip, B = gold plate.
NOTE 1: 24-pin flatpack (W, WC, RA) dimensions may vary from F-6 outline in Appendix C of MIL-M-38510F. Refer to appropriate TI data book.

PACKAGES

The packages offered by Military products are designed to provide the most efficient and cost-effective method of meeting systems requirements. Products are offered in ceramic dual-in-line packages, flatpacks, and leadless ceramic chip carriers.

PACKAGES AVAILABLE

PACKAGE	DESCRIPTION
FD	Three-Layer Square Chip Carrier — Non-JEDEC Pinouts
FG, FV	Three-Layer Rectangular Chip Carrier — JEDEC Pinouts
FJ	J Formed Ceramic Leaded Chip Carrier
FK	Three-Layer Square Chip Carrier — JEDEC Pinouts
J, JG, JT	Ceramic DIP
JD	Side Braze Ceramic DIP
W, WA, WC, U	Ceramic Flatpack (Note 1)

STANDARD PACKAGES BY PRODUCT LINE

PACKAGE	LOGIC	LINEAR	BIPOLAR MEMORY	MOS MEMORY	MICROPROCESSOR
FD					•
FG				•	
FJ		•			•
FK	ALS, AS, HC, HCT, LS, S	•	•		•
FV				•	
J	All	•	•	•	•
JD				•	•
JG		•			
JT	ALS, AS, HC, HCT, LS		•		
W	All	•			
WC		•			
U		•			

NOTE 1: The 24-Pin flatpack (WC) dimensions may vary from F-6 outline in Appendix C of MIL-M-38510F. Refer to appropriate TI data book.

DESC MILITARY DRAWINGS

The DESC Military Drawing program provides industry standard specifications in compliance with Class B requirements for devices that are not JAN qualified. Texas Instruments fully supports the DESC Military Drawing Program. Refer to approved product listing.

DESC SELECTED ITEM DRAWING NOMENCLATURE

Example: **5962-85155 or 82005** **01** **F** **A**

Drawing Number

Device

Package

A = 14-pin flatpack (1/4″ × 1/4″)
B = 14-pin flatpack (3/16″ × 1/4″)
C = 14-pin DIP
D = 14-pin flatpack
E = 16-pin DIP
F = 16-pin flatpack
G = 8-pin can
H = 10-pin flatpack
I = 10-pin can
J = 24-pin DIP
K = 24-pin flatpack
L = 24-pin DIP (300 mil)
M = 12-pin can
P = 8-pin DIP
Q = 40-pin DIP
R = 20-pin DIP
S = 20-pin flatpack
V = 18-pin DIP
W = 22-pin DIP
2 = 20-pad LCC
3 = 28-pad LCC

Lead Finish

A = Solder Dip
B = Tin Plate
C = Gold Plate

JAN INTEGRATED CIRCUITS AND GENERIC TYPE CROSS-REFERENCE

Military Device Type M38510/ to Generic/Industry No.

Military Device Type M38510/	Generic Industry No.
00101	**5430**
00102	**5420**
00103	**5410**
00104	**5400**
00105	**5404**
00106	**5412**
00107	**5401**
00108	**5405**
00109	**5403**
00201	**5472**
00202	**5473**
00203	**54107**
00204	**5476**
00205	**5474**
00206	**5470**
00207	5479
00301	**5440**
00302	**5437**
00303	**5438**
00401	**5402**
00402	**5423**
00403	**5425**
00404	**5427**
00501	**5450**
00502	**5451**
00503	**5453**
00504	**5454**
00601	5482
00602	**5483**
00603	9304
00604	5480
00701	**5486**
00801	**5406**
00802	**5416**
00803	**5407**
00804	**5417**
00805	5426
00901	5495
00902	5496
00903	54164
00904	54165
00905	54194
00906	54195
01001	5442
01002	5443
01003	5444
01004	5445
01005	54145
01006	5446
01007	5447
01008	5448
01009	5449
01101	54181
01101	9341
01102	54182
01102	9342
01201	54121
01202	54122
01203	54123
01204	9601
01205	9602
01301	5492
01302	5493
01303	54160
01304	54163
01305	54162
01306	**54161**
01307	5490
01308	54192
01309	54193
01401	54150
01402	9312
01403	54153
01404	9309
01405	9322
01405	54157
01406	54151
01501	5475
01502	5477
01503	9308
01503	54116
01504	9314
01601	5408
01602	5409
01701	**54174**
01702	**54175**
01801	54170
01901	54180
02001	54L30
02002	54L20
02003	54L10
02004	54L00
02005	54L04
02006	54L03
02006	54L01
02101	54L71
02102	54L72
02103	54L73
02104	54L78
02105	54L74
02201	54H72
02202	54H73
02003	54H74
02204	54H76
02205	54H101
02206	54H103
02301	54H30
02302	54H20
02303	54H10
02304	54H00
02305	54H04
02306	54H01
02307	54H22
02401	54H40
02501	54L90
02502	54L93
02503	54L193
02504	93L10
02505	93L16
02601	54L86
02701	54L02
02801	54L95
02802	54L164
02803	93L28
02804	93L00
02805	76L70
02901	54L42
02902	54L43
02903	54L44
02904	54L46
02905	54L47
02906	76L42A
02907	93L01
03001	930
03002	940
03002	935
03003	936
03004	946
03005	962
03101	932
03102	944
03103	957
03104	958
03105	933
03201	951
03301	945
03302	948
03303	950
03304	9093
03501	MH0026
04001	54H50
04002	54H51
04003	54H53
04004	54H54
04005	54H55
04101	54L51
04102	54L54
04103	54L55
04201	54L121
04202	54L122
04301	93L18
04401	93L24
04501	93L14
04502	93L08

JAN INTEGRATED CIRCUITS AND GENERIC TYPE CROSS-REFERENCE

Military Device Type M38510/ to Generic/Industry No.

Military Device Type M38510/	Generic Industry No.
04601	93L09
04602	93L12
04603	93L22
05001	4011A
05002	4012A
05003	4023A
05051	4011B
05052	4012B
05053	4023B
05101	4013A
05102	4027A
05103	4043A
05151	4013B
05152	4027B
05153	4043B
05201	4000A
05202	4001A
05203	4002A
05204	4025A
05251	4000B
05252	4001B
05253	4002B
05254	4025B
05301	4007A
05302	4019A
05303	4030A
05304	4048A
05351	4007UB
05352	4019B
05353	4030B
05354	4048B
05401	4008A
05451	4008B
05501	4009A
05502	4010A
05503	4049A
05504	4050A
05505	4041A
05551	4009UB
05552	4010B
05553	4049UB
05554	4050B
05555	4041UB
05601	4017A
05602	4018A
05603	4020A
05604	4022A
05605	4024A
05651	4017B
05652	4018B
05653	4020B
05654	4022B
05655	4024B
05701	4006A
05702	4014A
05703	4015A
05704	4021A
05705	4031A
05706	4034A

Military Device Type M38510/	Generic Industry No.
05751	4006B
05752	4014B
05753	4015B
05754	4021B
05755	4031B
05756	4034B
05801	4016A
05802	4066A
05851	4016B
05852	4066B
05901	4028A
05951	4028B
06001	10501
06002	10502
06003	10505
06004	10506
06005	10507
06006	10509
06101	10531
06102	10631
06103	10576
06104	10535
06201	10504
06202	10597
06301	10524
06302	10525
07001	**54S00**
07002	**54S03**
07003	**54S04**
07004	**54S05**
07005	**54S10**
07006	**54S20**
07007	**54S22**
07008	**54S30**
07009	54S133
07010	54S134
07101	**54S74**
07102	**54S112**
07103	54S113
07104	54S114
07105	**54S174**
07106	**54S175**
07201	54S40
07301	**54S02**
07401	54S51
07402	**54S64**
07403	54S65
07501	**54S86**
07502	54S135
07601	**54S194**
07602	54S195
07701	**54S138**
07702	54S139

Military Device Type M38510/	Generic Industry No.
07801	54S181
07802	**54S182**
07901	**54S151**
07902	**54S153**
07903	**54S157**
07904	**54S158**
07905	54S251
07906	**54S257**
07907	54S258
07908	54S253
08001	**54S11**
08002	54S15
08003	54S08
08004	54S09
08101	54S140
08201	**54S85**
10101	741A
10102	747A
10103	LM101A
10104	LM108A
10105	LH2101A
10106	LH2108A
10107	LM118
10108	1558
10201	LM723
10301	710
10302	711
10303	LM106
10304	LM111
10305	LH2111
10401	**55107**
10402	**55108**
10403	**55114**
10403	9614
10404	9615
10404	**55115**
10405	**55113**
10406	7831
10407	7832
10501	5040
10502	5041
10503	5042
10504	5043
10505	5044
10506	5045
10507	5046
10508	5047
10601	LM102
10602	LM110
10603	LH2110
10701	LM109
10702	LM140H-05
10702	78M05
10703	LM140H-12
10703	78M12
10704	LM140H-15

JAN INTEGRATED CIRCUITS AND GENERIC TYPE CROSS-REFERENCE

Military Device Type M38510/ to Generic/Industry No.

Military Device Type M38510/	Generic Industry No.
10704	78M15
10705	LM140H-24
10705	78M24
10706	LM140K-05
10706	7805
10707	LM140K-12
10707	7812
10708	LM140K-15
10708	7815
10709	LM140K-24
10709	7824
10801	3018A
10802	3045
10901	555
10902	556
10903	555 (I_{SOURCE} = 60 mA)
11001	LM148
11002	LM149
11003	4741, 4156
11004	4136
11005	LM124
11101	DG181A
11102	DG182A
11103	DG184A
11104	DG185A
11105	DG187A
11106	DG188A
11107	DG190A
11108	DG191A
11201	LM139
11202	LM193
11301	DAC-08
11302	DAC-08A
11401	LF155
11402	LF156
11403	LF157
11404	LF155A
11405	LF156A
11406	LF157A
11501	LM120H-05
11501	79M05
11502	LM120H-12
11502	79M12
11503	LM120H-15
11503	79M15
11504	LM120H-24
11504	79M24
11505	LM120K-05
11505	7905
11506	LM120K-12
11506	7912
11507	LM120K-15
11507	7915
11508	LM120K-24
11508	7924
11601	300
11602	301
11603	302

Military Device Type M38510/	Generic Industry No.
11604	303
11605	304
11606	305
11607	306
11608	307
11701	78MG
11702	78G
11703	LM117H
11704	LM117K
11705	LM150K
11706	LM138K
11801	79MG
11802	79G
11803	LM137H
11804	LM137K
11901	061
11902	062
11903	064
11904	071
11904	771
11904	LF151
11905	072
11905	772
11905	LF153
11906	074
11906	774
11906	LF147
12001	5200
12002	5203
12003	5201
12004	5204
12005	5202
12006	5205
12007	5206
12008	5207
12009	5210
12010	5213
12011	5211
12012	5214
12013	5212
12014	5215
12015	5216
12016	5217
12101	562
12102	563
12103	565
12104	566
12201	2700
12202	2600
12203	2620
12204	2500
12205	2510
12206	2520
12301	200
12302	201
12401	LM199A
12402	LM129A
12403	REF10
12404	LM199

Military Device Type M38510/	Generic Industry No.
12405	LM199A-20
12406	LM129B
12501	198
12502	5537
12601	1524
12701	7523
12702	7520
12703	7521
12704	7541
12705	1020
12706	1220
12707	1218
12801	584S
12802	584T
12901	55450
12902	55451B
12903	55452B
12904	55453B
12905	55454B
12906	55460
12907	**55461**
12908	**55462**
12909	**55463**
12910	**55464**
13001	**55325B**
13002	**55326A**
13003	**55327A**
13101	5534A
13102	5532A
13301	561
13401	ADC571
13501	OP-07A
13502	OP-07, 714
13503	OP-27A
13504	OP-227A
13601	2700
13601	R675B-4
13602	2702
13602	R675B-3
13701	DAC87 (Hybrid)
13702	DAC87 (Monolithic)
13703	DAC87 (Hybrid)
13901	534T
13902	534S
13903	532S
14103	2003
15001	5485
15002	9324
15101	5413
15102	5414
15103	54132

JAN INTEGRATED CIRCUITS AND GENERIC TYPE CROSS-REFERENCE

Military Device Type M38510/ to Generic/Industry No.

Military Device Type M38510/	Generic Industry No.
15201	54154
15201	9311
15202	54155
15203	54156
15204	8250
15205	8251
15206	8252
15206	9301
15301	54125
15302	54126
15501	54H08
15502	54H11
15503	54H21
15504	54H08
15601	54147
15602	54148
15603	9318
15701	9338
15801	9321
15802	9317
15901	9300
15902	9328
16001	9334
16101	5432
16201	5428
16301	54365
16302	54366
16303	54367
16304	54368
17001	4081B
17002	4082B
17003	4073B
17101	4071B
17102	4072B
17103	4075B
17201	4085B
17202	4086B
17203	4070B
17204	4077B
17301	4514B
17302	4515B
17303	4532B
17304	4555B
17305	4556B
17401	4069UB
17402	40107B
17403	4502B
17404	40109B
17501	4076B
17502	4095B
17503	4096B
17504	4098B
17505	40174B
17601	4099B
17602	4508B
17701	4093B
17702	40106B
17801	4067B
17802	4097B
17803	40257B
19001	506
19001	6116
19002	506A
19003	507
19003	6216
19004	507A
19005	508A
19006	509A
19007	508
19007	6108
19008	509
19008	6208
20101	HPROM-0512
20101	MCM5303
20102	MCM5304
20201	IM5603A
20202	IM5623
20301	7610
20301	5300-1
20301	82S126
20301	93417
20302	7611
20302	5301-1
20302	54S287
20302	82S129
20302	93427
20401	7620
20401	5303-1
20401	82S130
20401	93436
20402	7621
20402	5306-1
20402	82S131
20402	93446
20601	7642
20601	5352-1
20601	82S136
20601	93452
20602	7643
20602	5353-1
20602	82S137
20602	93453
20603	7644
20701	7602
20701	5330
20701	82S23
20702	7603
20702	5331
20702	82S123
20801	7640
20801	5340-1
20801	82S140
20801	93438
20802	5341-1
20802	54S474
20802	7641
20802	82S141
20802	93448
20803	82S115
20804	5348-1
20805	5349-1
20901	53S480
20901	7684
20901	77S184
20901	82S184
20902	29651
20902	53S841
20902	7685
20902	77S185
20902	82S185
20903	27S180
20903	77S180
20903	7680
20903	5380-2
20903	82S180
20903	93450
20904	27S181
20904	77S181
20904	29631
20904	7681
20904	5381-2
20904	82S181
20904	93451
20905	82S2708
20905	93461
20906	93460
20907	53S840
20908	53S841
20908	29651
21001	77S190
21001	76160
21001	53S1680
21001	82S190
21002	77S191
21002	93Z511
21002	27S191
21002	28S166A
21002	76161
21002	53S1681
21002	82S191
21002	3636
21002	29681
21003	93Z510
21004	93Z511
21004	28S166A
21005	76165
21901	6654
22001	2708
22101	2716
22201	2532

JAN INTEGRATED CIRCUITS AND GENERIC TYPE CROSS-REFERENCE

Military Device Type M38510/ to Generic/Industry No.

Military Device Type M38510/	Generic Industry No.
22601	NMC2816
23001	93410
23002	93421
23003	93411
23004	93L420
23101	93415
	60 ns (t_{WHAC} = 5 ns, t_{AVWL} = 15 ns)
23102	93425
	60 ns (t_{WHAC} = 5 ns, t_{AVWL} = 15 ns)
23103	93L415 70 ns
23104	93L425 70 ns
23105	93415
	60 ns (t_{WHAC} = 10 ns, t_{AVWL} = 10 ns)
23106	93425
	60 ns (t_{WHAC} = 10 ns, t_{AVWL} = 10 ns)
23107	93415 45 ns
23107	82S10 45 ns
23108	93425A 45 ns
23108	82S11 45 ns
23109	93412 60 ns
23110	93422 60 ns
23111	93L412 75 ns
23112	93L422 75 ns
23113	93L425A 50 ns
23114	93422A 45 ns
23115	93L422A 55 ns
23201	93419
23301	93470
23302	93471
23501	TMS4060 (85°C Max)
23502	TMS4050 (85°C Max)
23503	TMS4060 (100°C Max)
23504	TMS4050 (100°C Max)
23505	MM5280 (85°C Max)
23506	MM5280 (100°C Max)
23601	MCM6605 (85°C Max)
23602	MCM6604A (85°C Max)
23602	MKB4096 (85°C Max)
23603	MCM6605 (100°C Max)
23604	MCM6604A (100°C Max)
23604	MKB4096 (100°C Max)
23701	AM9130CFC
23702	AM9130AFC
23703	AM9130CFM
23703	AM9130CDM
23704	AM9310AFM
23704	AM9130ADM
23704	AM9130AFM
23705	AM91L30CF
23706	AM91L30AF
23707	AM91L30CFM
23707	AM91L30CDM
23708	AM91L30AFM
23708	AM91L30ADM
23709	AM9140CFC
23710	AM9140AFC

Military Device Type M38510/	Generic Industry No.
23711	AM9140CFM
23711	AM9140CDM
23712	AM9140AFM
23712	AM9140ADM
23713	AM91L40CFC
23714	AM91L40AFC
23715	AM91L40CFM
23715	AM91L40CDM
23716	AM91L40AFM
23716	AM91L40ADM
23801	2147
23802	2114
23803	2147H
23804	2114A
23805	2147H-3
23806	2148H
23807	2147H-2
23901	6508
23901	54C929
23902	6518
23902	54C930
24001	2117 (200 ns access time)
24001	4116 (200 ns access time)
24002	2117 (250 ns access time)
24002	4116 (250 ns access time)
24003	2117 (200 ns page mode operation guaranteed)
24003	4116 (200 ns page mode operation guaranteed)
24401	2164 (1 ms refresh)
24401	4564 (1 ms refresh)
24401	6665 (1 ms refresh)
24401	8264 (1 ms refresh)
24402	2164 (2 ms refresh)
24402	4564 (2 ms refresh)
24402	6665 (2 ms refresh)
24402	8264 (2 ms refresh)
24501	6504
24502	6514
29101	6116, 65162
29102	6516
29103	65262
29104	6116, 65162
29105	6116, 65162
29106	51C67
30001	**54LS00**
30002	**54LS03**
30003	**54LS04**
30004	**54LS05**
30005	**54LS10**
30006	**54LS12**
30007	**54LS20**
30008	**54LS22**
30009	**54LS30**

Military Device Type M38510/	Generic Industry No.
30101	**54LS73A**
30102	**54LS74A**
30103	54LS112
30104	**54LS113A**
30105	**54LS114A**
30106	**54LS174**
30107	**54LS175**
30108	**54LS107A**
30109	**54LS109A**
30110	**54LS76A**
30201	**54LS40**
30202	**54LS37**
30203	**54LS38**
30204	54LS28
30301	**54LS02**
30302	**54LS27**
30303	**54LS266**
30401	**54LS51**
30401	9LS51
30402	**54LS54**
30402	9LS54
30501	**54LS32**
30502	**54LS86**
30601	**54LS194A**
30602	**54LS195A**
30603	**54LS95B**
30604	**54LS96**
30605	**54LS164**
30606	**54LS295B**
30607	**54LS395A**
30608	**54LS165A**
30609	**54LS166A**
30701	**54LS138**
30702	**54LS139**
30703	**54LS42**
30704	**54LS47**
30801	54LS181
30901	**54LS151**
30902	**54LS153**
30903	**54LS157**
30904	**54LS158**
30905	**54LS251**
30906	**54LS257B**
30907	**54LS258B**
30908	**54LS253**
30909	54LS298
31001	**54LS11**
31002	**54LS15**
31003	**54LS21**
31004	**54LS08**
31005	54LS09
31101	**54LS85**
31201	**54LS83A**
31202	**54LS283**
31301	**54LS13**

JAN INTEGRATED CIRCUITS AND GENERIC TYPE CROSS-REFERENCE

Military Device Type M38510/ to Generic/Industry No.

Military Device Type M38510/	Generic Industry No.
31302	**54LS14**
31303	**54LS132**
31401	**54LS123**
31402	**54LS221**
31403	**54LS122**
31501	**54LS90**
31502	**54LS93**
31503	**54LS160A**
31504	**54LS161A**
31505	54LS168
31506	54LS169A
31507	**54LS192**
31508	**54LS193**
31509	**54LS191**
31510	**54LS92**
31511	**54LS162A**
31512	**54LS163A**
31513	**54LS190**
31601	**54LS75**
31602	**54LS279**
31603	54LS259
31604	**54LS375**
31605	**54LS259B**
31801	54LS261
31901	54LS670
31902	54LS170
32001	54LS196
32002	54LS197
32003	**54LS290**
32004	**54LS293**
32102	**54LS26**
32201	**54LS365A**
32202	**54LS366A**
32203	**54LS367A**
32204	**54LS368A**
32301	**54LS125A**
32302	**54LS126A**
32401	**54LS240**
32402	**54LS241**
32403	**54LS244**
32404	**54LS540**
32405	**54LS541**
32501	**54LS273**
32502	**54LS373**
32503	**54LS374**
32504	**54LS377**
32601	**54LS155A**
32602	**54LS156**
32701	**54LS390**
32702	**54LS393**
32703	**54LS490**
32801	**54LS242**
32802	**54LS243**

Military Device Type M38510/	Generic Industry No.
32803	**54LS245**
32804	54LS646
32805	54LS648
32901	**54LS280**
33001	54F00
33002	54F04
33003	54F10
33004	54F20
33106	**25LS174**
33107	25LS175
33201	54F240
33202	54F241
33203	54F244
33301	54F02
33401	54F64
33501	54F32
33601	54F194
33701	54F138
33702	54F139
33901	54F151
33902	54F153
33903	54F157
33904	54F158
33905	54F251
33906	54F257
33907	54F258
33908	54F253
33909	54F352
33910	54F353
34001	54F08
34002	54F11
34101	54F074
34102	54F109
34103	54F112
34104	54F175
34105	54F374
34106	54F534
34107	54F174
34201	54F283
34501	54F086
34601	54F373
34602	54F533
34701	54F521
34801	54F242
34802	54F243
34803	54F245
34901	54F280
35001	54F398

Military Device Type M38510/	Generic Industry No.
35002	54F399
36001	**54LS148**
36002	**54LS348**
36101	**54LS173A**
37001	**54ALS00A**
37002	**54ALS10**
37003	**54ALS20A**
37004	**54ALS30**
35005	**54ALS133**
37006	**54ALS04A**
37101	**54ALS74A**
37102	**54ALS109A**
37103	**54ALS112A**
37104	54ALS574
37105	54ALS576
37106	54ALS874
37107	54ALS876
37201	**54ALS174**
37202	**54ALS175**
37203	**54ALS373**
37204	**54ALS374**
37301	**54ALS02**
37302	**54ALS27**
37401	**54ALS08**
37402	**54ALS11**
37501	**54ALS32**
37601	54ALS299
37602	54ALS323
37701	**54ALS138**
37901	**54ALS857**
38001	54ALS161
38002	54ALS163
38003	**54ALS169B**
38004	54ALS561
38005	54ALS569
38101	54ALS160
38102	54ALS162
38103	54ALS168
38104	54ALS560
38105	54ALS568
38201	54ALS573
38202	54ALS580
38203	54ALS873
38204	54ALS880
38301	**54ALS240A**
38302	**54ALS241A**
38303	**54ALS244A**
38401	**54ALS1000A**/54ALS37
38402	**54ALS1002A**/54ALS28
38403	**54ALS1003/54ALS38**
38404	**54ALS1008**

JAN INTEGRATED CIRCUITS AND GENERIC TYPE CROSS-REFERENCE

Military Device Type M38510/ to Generic/Industry No.

Military Device Type M38510/	Generic Industry No.
38405	**54ALS1010**
38406	**54ALS1011**
38407	**54ALS1020A**/54ALS40
38408	**54ALS1032**
38409	**54ALS1004**
38410	**54ALS1005**
38411	**54ALS1034**
38412	54ALS1035
38501	54ALS640
38502	54ALS641
38503	54ALS642
38504	54ALS643
38505	54ALS645
38506	54ALS242
38507	54ALS243
40001	6800
40101	MC6821
40201	6810
40301	2316E
40301	2616
40301	3516E
40301	9218
40301	S6831B
40301	MK34000
40301	52116
40301	68A316E
42001	8080A
42101	8212
42101	54S412
42201	8224
42301	8228
44001	2901B
44101	2905
44102	2906
44103	2907
44104	2915
44105	2916
44106	2917
44201	2918
46001	9900A
46501	SBP9989
47001	1802D
47101	1821
47102	1822
47201	1832
47301	1852
47401	1853

Military Device Type M38510/	Generic Industry No.
47601	1856
47602	1857
48001	Z-80A CPU
48002	Z-80 CPU
48003	Z-80B CPU
48101	Z-80A S10/2
48102	Z-80 S10/2
48201	Z-80A DMA
48202	Z-80 DMA
48301	Z80A CTC
48302	Z80 CTC
48401	Z80A P10
48402	Z80 P10
49001	8048
49002	8035L
50001	TDC1008JM
50002	TDC1009JM
50003	TDC1010JM
50004	MPY-8HJM
50005	MPY-12HJM
50006	MPY-16HJM
50201	82S101
50201	93458
50202	82S100
50202	93459
50301	PAL10H8
50302	PAL12H6
50303	PAL14H4
50304	PAL16H2
50305	PAL16C1
50306	PAL10L8
50307	PAL12L6
50308	PAL14L4
50309	PAL16L2
50401	PAL16L8A
50402	PAL16R8A
50403	PAL16R6A
50404	PAL16R4A
50405	PAL16X4
50406	PAL16A4
50407	PAL16L8A-2
50408	PAL16R8A-2
50409	PAL16R6A-2
50410	PAL16R4A-2
50501	PAL20L8A
50502	PAL20R8A
50503	PAL20R6A
50504	PAL20R4A
52001	Z8001CPU
52002	Z8002CPU
52003	Z8001ACPU
52004	Z8002ACPU
53001	8086

Military Device Type M38510/	Generic Industry No.
54001	MC68000-6
54002	MC68000-8
65001	**54HC00**
65002	**54HC10**
65003	**54HC20**
65004	**54HC30**
65005	54HC132
65101	**54HC02**
65102	**54HC27**
65103	**54HC266**
65104	**54HC4002**
65105	54HC7266
65201	**54HC32**
65202	**54HC86**
65203	**54HC08**
65204	**54HC11**
65301	54HC73
65302	**54HC74**
65303	54HC107
65304	**54HC109**
65305	**54HC112**
65306	54HC173
65307	**54HC174**
65308	**54HC175**
65601	**54HC273**
65602	**54HC374**
65603	54HC377
65604	**54HC574**
65605	54HC534
65606	54HC564
65701	54HC04
65702	54HC14
65703	54HC240
65704	54HC241
65705	54HC244
65706	54HC365
65707	54HC366
65708	54HC367
65709	54HC368
65710	**54HC540**
65711	**54HC541**
65712	54HC4049
65713	54HC4050

Military Device Type* M38510/	Generic Industry No.
65401	54HC75
65402	54HC259
65403	54HC373
65404	54HC533
65405	54HC563
65406	54HC573
65501	54HC242
65502	54HC243
65503	54HC245
65504	54HC620
65505	54HC623
65506	54HC640

*Tentative Assignments

JAN INTEGRATED CIRCUITS AND GENERIC TYPE CROSS-REFERENCE

Military Device Type M38510/ to Generic/Industry No.

Military Device Type* M38510/	Generic Industry No.
65507	54HC643
65508	54HC646
65509	54HC648
65801	54HC42
65802	54HC138
65803	54HC139
65804	54HC154
65805	54HC238
65901	54HC123
65902	54HC221
66001	54HC147
66002	54HC148
66101	54HC85
66102	54HC682
66103	54HC684
66104	54HC686
66105	54HC688
66201	54HC151
66202	54HC153
66203	54HC157
66204	54HC158
66205	54HC251
66206	54HC253
66207	54HC257
66208	54HC354
66209	54HC356
66301	54HC160
66302	54HC161
66303	54HC162
66304	54HC163
66305	54HC191
66306	54HC192
66307	54HC193
66308	54HC390
66309	54HC393
66310	54HC4017
66311	54HC4020
66312	54HC4024
66313	54HC4040
66314	54HC4520
66401	54HC590
66402	54HC592
66403	54HC593
66501	54HC164
66502	54HC165
66503	54HC166
66504	54HC194
66505	54HC195
66506	54HC299
66507	54HC595
66508	54HC597
66601	54HC670
66701	54HC283
66801	54HC280

*Tentative Assignments

GENERIC TYPE AND JAN DEVICE CROSS-REFERENCE GUIDE

Generic Industry No. to Military Device Type M38510

Generic Industry No.	Military Device Type M38510/
061	11901
062	11902
064	11903
071	11904
072	11905
074	11906
198	12501
1020	12705
1218	12707
1220	12706
1524	12601
1558	10108
1802D	47001
1821	47101
1822	47102
1832	47201
1852	47301
1853	47401
1856	47601
1857	47602
10501	06001
10502	06002
10504	06201
10505	06003
10506	06004
10507	06005
10509	06006
10524	06301
10525	06302
10531	06101
10535	06104
10576	06103
10597	06202
10631	06102
200	12301
200	12303
201	12302
201	12304
2003	14103
2114	23802
2114A	23804
2117	24001
2117	24002
2117	24003
2147	23801
2147H	23803
2147H-2	23807
2147H-3	23805
2148H	23806
2164	24401
2164	24402
2316E	40301
2500-8	12204
2510-10	12205
2520-8	12206
2532	22201
2600-8	12202
2616	40301
2620-8	12203
2700	13601
2700-8	12201
2702	13602
2708	22001
2716	22101
2901C	44001
2905	44101
2906	44102
2907	44103
2915A	44104
2916A	44105
2917A	44106
2918	44201
29681	21002
25LS174	33106
25LS175	33107
300	11601
301A	11602
302A	11603
303A	11604
304A	11605
305A	11606
306A	11607
307A	11608
3018A	10801
3045	10802
3516E	40301
3636	21002
4000A	05201
4000B	05251
4001A	05202
4001B	05252
4002A	05203
4002B	05253
4006A	05701
4006B	05751
4007A	05301
4007UB	05351
4008A	05401
4008B	05451
4009A	05501
4009UB	05551
4010A	05502
4010B	05552
4011A	05001
4011B	05051
4012A	05002
4012B	05052
4013A	05101
4013B	05151
4014A	05702
4014B	05752
4015A	05703
4015B	05753
4016A	05801
4016B	05851
4017A	05601
4017B	05651
4018A	05602
4018B	05652
4019A	05302
4019B	05352
4020A	05603
4020B	05653
4021A	05704
4021B	05754
4022A	05604
4022B	05654
4023A	05003
4023B	05053
4024A	05605
4024B	05655
4025A	05204
4025B	05254
4027A	05102
4027B	05152
4028A	05901
4028B	05951
4030A	05303
4030B	05353
4031A	05705
4031B	05755
4034A	05706
4034B	05756
4041A	05505
4041UB	05555
4043A	05103
4043B	05153
4048A	05304
4048B	05354
4049A	05503
4049UB	05553
4050A	05504
4050B	05554
4066A	05802
4066B	05852
4067B	17801
4069UB	17401
4070B	17203
4071B	17101
4072B	17102
4073B	17003
4075B	17103
4076B	17501
4077B	17204
4081B	17001
4082B	17002
4085B	17201
4086B	17202
4093B	17701
4095B	17502
4096B	17503
4097B	17802
4098B	17504
4099B	17601
4116	24001
4116	24002
4116	24003
4136	11004
4156	11003
4502B	17403
4508B	17602
4514B	17301
4515B	17302
4532B	17303
4555B	17304
4556B	17305
4564	24401
4564	24402
4741	11003
40106B	17702
40107B	17402
40109B	17404
40174B	17505
40257B	17803
506	19001
506A	19002
507	19003
507A	19004
508	19007
508A	19005
509	19008

GENERIC TYPE AND JAN DEVICE CROSS-REFERENCE GUIDE

Generic Industry No. to Military Device Type M38510

Generic Industry No.	Military Device Type M38510/
509A	19006
532S	13903
534S	13902
534T	13901
555	10901
*555 (I_{source} = 60 mA)	10903
556	10902
561	13301
562	12101
563	12102
565	12103
566	12104
584S	12801
584T	12802
5040	10501
5041	10502
5042	10503
5043	10504
5044	10505
5045	10506
5046	10507
5047	10508
51C67	29106
5200	12001
5201	12003
5202	12005
5203	12002
5204	12004
5205	12006
5206	12007
5207	12008
5210	12009
5211	12011
52116	40301
5212	12013
5213	12010
5214	12012
5215	12014
5216	12015
5217	12016
5300-1	20301
5301-1	20302
5305-1	20401
5306-1	20402
5330	20701
5331	20702
5340-1	20801
5341-1	20802
5348-1	20804
5349-1	20805
5352-1	20601
5353-1	20602
5380-2	20903
5381-2	20904
53S1680	21001
53S1681	21002
5400	**00104**
5401	**00107**
5402	**00401**
5403	**00109**
5404	**00105**
5405	**00108**
5406	**00801**
5407	**00803**
5408	01601
5409	01602
5410	**00103**

Generic Industry No.	Military Device Type M38510/
5412	**00106**
5413	15101
5414	15102
5416	**00802**
5417	**00804**
5420	**00102**
5423	**00402**
5425	**00403**
5426	00805
5427	**00404**
5428	16201
5430	**00101**
5432	16101
5437	**00302**
5438	**00303**
5440	**00301**
5442	01001
5443	01002
5444	01003
5445	01004
5446	01006
5447	01007
5448	01008
5449	01009
5450	**00501**
5451	**00502**
5453	**00503**
5454	**00504**
5470	**00206**
5472	**00201**
5473	**00202**
5474	**00205**
5475	01501
5476	**00204**
5477	01502
5479	00207
5480	00604
5482	00601
5483	**00602**
5485	15001
5486	**00701**
5490	01307
5492	01301
5493	01302
5495	00901
5496	00902
54107	**00203**
54116	01503
54121	01201
54122	01202
54123	01203
54125	15301
54126	15302
54132	15103
54145	01005
54147	15601
54148	15602
54150	01401
54151	01406
54153	01403
54154	15201
54155	15202
54156	15203
54157	01405
54160	01303
54161	**01306**
54162	01305

Generic Industry No.	Military Device Type M38510/
54163	01304
54164	00903
54165	00904
54170	01801
54174	**01701**
54175	**01702**
54180	01901
54181	01101
54182	01102
54192	01308
54193	01309
54194	00905
54195	00906
54365	16301
54366	16302
54367	16303
54368	16304
54ALS00A	**37001**
54ALS02	**37301**
54ALS04A	**37006**
54ALS08	**37401**
54ALS10	**37002**
54ALS11	**37402**
54ALS20A	**37003**
54ALS27	**37302**
54ALS28	38402
54ALS30	**37004**
54ALS32	**37501**
54ALS37	38401
54ALS38	38403
54ALS40	38407
54ALS74A	**37101**
54ALS109A	**37102**
54ALS112A	**37103**
54ALS133	**37005**
54ALS138	**37701**
54ALS160	38101
54ALS161	38001
54ALS162	38102
54ALS163	38002
54ALS168	38103
54ALS169B	**38003**
54ALS174	**37201**
54ALS175	**37202**
54ALS240A	**38301**
54ALS241A	**38302**
54ALS242	38506
54ALS243	38507
54ALS244A	**38303**
54ALS299	37601
54ALS323	37602
54ALS373	**37203**
54ALS374	**37204**
54ALS560	38104
54ALS561	38004
54ALS568	38105
54ALS569	38005
54ALS573	38201
54ALS574	37104
54ALS576	37105
54ALS580	38202
54ALS640	38501
54ALS641	38502
54ALS642	38503
54ALS643	38504
54ALS645	38505
54ALS857	**37901**

GENERIC TYPE AND JAN DEVICE CROSS-REFERENCE GUIDE

Generic Industry No. to Military Device Type M38510

Generic Industry No.	Military Device Type M38510/
54ALS873	38203
54ALS874	37106
54ALS876	37107
54ALS880	38204
54ALS1000A	**38401**
54ALS1002A	**38402**
54ALS1003	38403
54ALS1004	38409
54ALS1005	38410
54ALS1008	38404
54ALS1010	38405
54ALS1011	38406
54ALS1020A	**38407**
54ALS1032	38408
54ALS1034	**38411**
54ALS1035	38412
54C929	23901
54C930	23902
54F00	33001
54F02	33301
54F04	33002
54F08	34001
54F10	33003
54F11	34002
54F20	33004
54F32	33501
54F64	33401
54F074	34101
54F086	34501
54F109	34102
54F112	34103
54F138	33701
54F139	33702
54F151	33901
54F153	33902
54F157	33903
54F158	33904
54F174	34107
54F175	34104
54F194	33601
54F240	33201
54F241	33202
54F242	34801
54F243	34802
54F244	34203
54F245	34803
54F251	33905
54F253	33908
54F257	33906
54F258	33907
54F280	34901
54F283	34201
54F352	33909
54F353	33910
54F373	34601
54F374	34105
54F398	35001
54F399	35002
54F521	34701
54F533	34602
54F534	34106
54H00	02304
54H01	02306
54H04	02305
54H08	15501
54H08	15504
54H10	02303

Generic Industry No.	Military Device Type M38510/
54H11	15502
54H20	02302
54H21	15503
54H22	02307
54H30	02301
54H40	02401
54H50	04001
54H51	04002
54H53	04003
54H54	04004
54H55	04005
54H72	02201
54H73	02202
54H74	02203
54H76	02204
54H101	02205
54H103	02206
54HC00	**65001**
54HC02	**65101**
54HC04	**65701**
54HC08	**65203**
54HC10	**65002**
54HC11	**65204**
54HC14	65702
54HC20	**65003**
54HC27	**65102**
54HC30	**65004**
54HC32	**65201**
54HC73	65301
54HC74	**65302**
54HC86	**65202**
54HC107	65303
54HC109	**65304**
54HC112	**65305**
54HC132	65005
54HC174	**65307**
54HC175	**65308**
54HC240	65703
54HC241	65704
54HC244	65705
54HC266	**65103**
54HC273	**65601**
54HC365	65706
54HC366	65707
54HC367	65708
54HC368	65709
54HC374	**65602**
54HC377	65603
54HC534	65605
54HC540	**65710**
54HC541	**65711**
54HC564	65606
54HC574	**65604**
54HC4002	**65104**
54HC4049	65712
54HC4050	65713
54L00	02004
54L01	02006
54L02	02701
54L03	02006
54L04	02005
54L10	02003
54L20	02002
54L30	02001
54L42	02901
54L43	02902
54L44	02903

Generic Industry No.	Military Device Type M38510/
54L46	02904
54L47	02905
54L51	04101
54L54	04102
54L55	04103
54L71	02101
54L72	02102
54L73	02103
54L74	02105
54L78	02104
54L86	02601
54L90	02501
54L93	02502
54L95	02801
54L121	04201
54L122	04202
54L164	02802
54L193	02503
54LS00	**30001**
54LS02	**30301**
54LS03	**30002**
54LS04	**30003**
54LS05	**30004**
54LS08	**31004**
54LS09	31005
54LS10	**30005**
54LS11	**31001**
54LS12	**30006**
54LS13	**31301**
54LS14	**31302**
54LS15	**31002**
54LS20	**30007**
54LS21	**31003**
54LS22	**30008**
54LS26	**32102**
54LS27	**30302**
54LS28	30204
54LS30	**30009**
54LS32	**30501**
54LS37	**30202**
54LS38	**30203**
54LS40	**30201**
54LS42	**30703**
54LS47	**30704**
54LS51	**30401**
54LS54	**30402**
54LS73A	**30101**
54LS74A	**30102**
54LS75	**31601**
54LS76A	**30110**
54LS83A	**31201**
54LS85	**31101**
54LS86	**30502**
54LS90	**31501**
54LS92	**31510**
54LS93	**31502**
65LS95B	**30603**
54LS96	**30604**
54LS107A	**30108**
54LS109A	**30109**
54LS112	30103
54LS113A	**30104**
54LS114A	**30105**
54LS122	**31403**
54LS123	**31401**
54LS125A	**32301**
54LS126A	**32302**

Generic Industry No. to Military Device Type M38510

Generic Industry No.	Military Device Type M38510/
54LS132	**31303**
54LS138	**30701**
54LS139	**30702**
54LS148	**36001**
54LS151	**30901**
54LS153	**30902**
54LS155A	**32601**
54LS156	**32602**
54LS157	**30903**
54LS158	**30904**
54LS160A	**31503**
54LS161A	**31504**
54LS162A	**31511**
54LS163A	**31512**
54LS164	**30605**
54LS165A	**30608**
54LS166A	**30609**
54LS168	31505
54LS169A	31506
54LS170	31902
54LS173A	**36101**
54LS174	**30106**
54LS175	**30107**
54LS181	30801
54LS190	**31513**
54LS191	**31509**
54LS192	**31507**
54LS193	**31508**
54LS194A	**30601**
54LS195A	**30602**
54LS196	32001
54LS197	32002
54LS221	**31402**
54LS240	**32401**
54LS241	**32402**
54LS242	**32801**
54LS243	**32802**
54LS244	**32403**
54LS245	**32803**
54LS251	**30905**
54LS253	**30908**
54LS257B	**30906**
54LS258B	**30907**
54LS259B	**31603**
54LS259B	31605
54LS261	31801
54LS266	**30303**
54LS273	**32501**
54LS279	**31602**
54LS280	**32901**
54LS283	**31202**
54LS290	**32003**
54LS293	**32004**
54LS295B	**30606**
54LS298	30909
54LS348	**36002**
54LS365A	**32201**
54LS366A	**32202**
54LS367A	**32203**
54LS368A	**32204**
54LS373	**32502**
54LS374	**32503**
54LS375	**31604**
54LS377	**32504**
54LS390	**32701**
54LS393	**32702**
54LS395A	**30607**

Generic Industry No.	Military Device Type M38510/
54LS424	42201
54LS428	42301
54LS490	**32703**
54LS540	**32404**
54LS541	**32405**
54LS646	32804
54LS648	32805
54LS670	31901
54S00	**07001**
54S02	**07301**
54S03	**07002**
54S04	**07003**
54S05	**07004**
54S08	08003
54S09	08004
54S10	**07005**
54S11	**08001**
54S15	08002
54S20	**07006**
54S22	**07007**
54S30	**07008**
54S40	07201
54S51	07401
54S64	**07402**
54S65	07403
54S74	**07101**
54S85	**08201**
54S86	**07501**
54S112	**07102**
54S113	07103
54S114	07104
54S133	07009
54S134	07010
54S135	07502
54S138	**07701**
54S139	07702
54S140	08101
54S151	**07901**
54S153	**07902**
54S157	**07903**
54S158	**07904**
54S174	**07105**
54S175	**07106**
54S181	07801
54S182	**07802**
54S194	**07601**
54S195	07602
54S251	07905
54S253	07908
54S257	**07906**
54S258	07907
54S287	20302
54S288	20702
54S412	42101
54S472	20805
54S473	20804
54S474	20802
54S475	20801
54S570	20401
54S571	20402
54S572	20601
54S573	20603
55107	**10401**
55108	**10402**
55113	**10405**
55114	**10403**
55115	**10404**

Generic Industry No.	Military Device Type M38510/
55325B	**13001**
55326A	**13002**
55327A	**13003**
5532A	13102
5534A	13101
5537	12502
55450	12901
55451B	**12902**
55452B	**12903**
55453B	**12904**
55454B	**12905**
55460	12906
55461	**12907**
55462	**12908**
55463	**12909**
55464	12910

Generic Part Number to Desc Drawing Number

Generic Part Number	Desc Drawing Number
0056	7800801
10516	7800901
14584	8550102
145xxB	See 45xxB
1526	8551501
1536	7800304
1545	8671201
15530-8	7802901
1823	7901801
1842	8670401
1853	7901901
1854	7901701
201A	7705301
2118	8101501
2420	8001601
2516-45	7802201
25LS09	8670801
25LS299	7802402
25LS2518	8671901
25LS2521	8671301
25S241	8672501
2640	7800302
27128 (450 ns)	8202501
27128 (250 ns)	8202502
2716 (350 ns)	7802202
27256 (350 ns)	8411101
27256 (250 ns)	8411102
27256 (200 ns)	8411103
27256 (170 ns)	8411104
2732	8001201
2732A25	8001203
2732A45	8001204
27512-25	8513501
27512-30	8513503
27512-35	8513502
27512-45	8513504
2764 (450 ns)	8200501
2764 (250 ns)	8200502
2764A (350 ns)	8200503
2764A (250 ns)	8200504
2764A (200 ns)	8200505
27C64-20	8510203
27C64-25	8510201
27C64-35	8510202
27LS00	8602001
27LS00A	8602002
27LS01	8602003
27LS01A	8602004
27LS02	8605103
27LS03	8605107
27LS07	7801504
27PS191	8552601
27PS191A	8552602
27PS291	8552603
27PS291A	8552604
27S02	8605101
27S02A	8605102
27S03	8605104
27S03A	8605106
27S07	7801503
27S07A	7801501
27S35	8670601
27S35A	8670602
27S37	8670603
27S37A	8670604
27S45	8552701
27S45A	8552702
27S47	8552703
27S47A	8552704
27S49	8200901
27S49A	8200902
2901A,B	7700701
2901C	8405701
2904	8601701
2909A	8602701
2910	7801701
2910A	7801702
291A	8602901
2911A	8602801
2917A	8671401
2918	8671501
29633	7902401
29705A	8602501
3130	7703301
32010	8405301
4013B	7901101
40174B	8202201
4021B	7901201
4023B	7901301
4029B	8101601
4035B	8101701
4040B	7705801
4042B	8101901
4044B	7702601
4047B	8102001
4049UB	7901401
4052B	7901501
4053B	8101801
4060A	7703101
4069B	7702701
4072B	7706001
4073B	7705101
4078B	7704401
4081B	7702401
4082B	7705901
4093B	7704601
4094B	7702501
4098B	7705501
4164 (120 ns)	8201008
4164 (150 ns)	8201006
4164 (200ns)	8201007
4167 (100 ns)	8200701
4167 (70 ns)	8200702
4167 (55 ns)	8200703
4256-15	8515201
4256-20	8515202
4502B	7702001
4514B	7703501
4515B	7703201
4516	8101502
4520B	7702301
4528B	7704501
4555B	7704701
4556B	7704801
4557B	7901601
4564 (150 ns)	8201001, 02
4564 (200 ns)	8201003
4585	7703702
46106B	8550101
506A	8513101
507A	8513102
508A	7705201
508A (0-Vprot.)	7705202
509A	8513103
5040	8100601,09
5041	8100602,10
5042	8100603,11
5043	8100604,12
5044	8100605,13
5045	8100606,14
5046	8100607,15
5047	8100608,16
5341	7801601
54ALS09	8414201
54ALS21A	8414301
54ALS74A	8401101
54ALS109A	8400001
54ALS112A	8400002
54ALS151	8414101
54ALS153	8413401
54ALS161B	8302201
54ALS162B	8407901
54ALS163B	8302202
54ALS169B	8302501
54ALS174	8301901
54ALS175	8301902
54ALS191	8684001
54ALS242B	8401301
54ALS243A	8401302
54ALS245A	8403001
54ALS251	8413501
54ALS253	8509601
54ALS257	8509701
54ALS273	8413601
54ALS299	8302101
54ALS323	8302102
54ALS373	8302001
54ALS374	8302002
54ALS561A	8302203
54ALS569A	8302502
54ALS573B	8401201
54ALS574A	8400101
54ALS576A	8400102
54ALS580A	8401202
54ALS645A	8403301
54ALS832	8414501
54ALS873B	8403201
54ALS874A	8401001
54ALS876	8401002
54ALS880	8403202
54ALS1000A	8405901
54ALS1004	8406101
54ALS1008A	8409701
54ALS1010A	8406001
54ALS1034	8403101
54C08	7703601
54C85	7703701
54C906	7705601
54F85	8606901
54F245	8551101
54F381	8671001

DESC CROSS-REFERENCE GUIDE

Generic Part Number to Desc Drawing Number

Generic Part Number	Desc Drawing Number
54HC00	8403701
54HC02	8404101
54HC04	8409801
54HC05	8601301
54HC08	8404701
54HC10	8403801
54HC11	8404801
54HC14	8409101
54HC20	8403901
54HC27	8404201
54HC30	8404001
54HC32	8404501
54HC73	8515301
54HC74	8405601
54HC75	8407001
54HC86	8404601
54HC107	8515401
54HC109	8415001
54HC112	8408801
54HC138	8406201
54HC139	8409201
54HC147	8406401
54HC151	8412801
54HC153	8409301
54HC161	8407501
54HC162	8409401
54HC164	8416201
54HC165	8409501
54HC174	8407301
54HC175	8408901
54HC240	8407401
54HC243	8409001
54HC244	8409601
54HC245	8408501
54HC251	8512501
54HC257	8512401
54HC259	8551901
54HC266	8404301
54HC273	8409901
54HC365	8500101
54HC367	8500201
54HC373	8407201
54HC374	8407101
54HC390	8600901
54HC393	8410001
54HC4002	8404401
54HC4017	8601101
54HC4020	8500301
54HC4024	8601201
54HC4040	8500401
54HC573	8512801
54HCT32	8685201
54HCT74	8685301
54HCT138	8550401
54HCT154	8670101
54HCT240	8550501
54HCT244	8513001
54HCT245	8550601
54HCT374	8550701
54HCU04	8601001
54LS09	8001901
54LS26	7602001
54LS33	8512601
54LS42	7603101
54LS47	7604501
54LS75	7601201

Generic Part Number	Desc Drawing Number
54LS76	7601301
54LS83A	7601401
54LS90	7603201
54LS93	7700101
54LS122	7600301
54LS123	7603901
54LS124	7704101
54LS132	7600401
54LS138	7600501
54LS139	7600701
54LS145	8508401
54LS148	7802701
54LS151	7601001
54LS153	7601101
54LS154	83017
54LS157	7600201
54LS158	7603301
54LS160	7700901
54LS161	7600801
54LS163	7603401
54LS165	7700601
54LS166	8001701
54LS168	8001801
54LS169A	8001802
54LS170	8002501
54LS190	7603501
54LS191	7600901
54LS192	7603601
54LS193	7600601
54LS196	7701001
54LS197	7601501
54LS221	7604201
54LS240	7801201
54LS242	8002001
54LS243	8002002
54LS244	7705701
54LS245	8002101
54LS251	7601601
54LS253	7601701
54LS257	7603701
54LS258	7603801
54LS261	8002601
54LS273	7801001
54LS279	7601801
54LS283	7604301
54LS298	7601901
54LS299	7802401
54LS353	8550801
54LS374	7801101
54LS390	7802601
54LS399	8415401
54LS540	8415501
54LS541	8415601
54LS629	8102101
54LS640	8416101
54LS670	7704201
54LS682	8415101
54LS684	8415201
54LS688	8415301
54S138	7604101
54S139	7700401
54S189	7801502
54S194	7604001
54S251	8002201
54S258	8002301
54185A	7703001

Generic Part Number	Desc Drawing Number
5539	8606401
55182	7900801
55183	7900901
55452	7704901
55500	8601801
55501	8601802
574AU	8512701,03
574AT	8512702,04
6N134	8102801
6N140A	8302401
6108	7705201
6164-55	8552505
63105	8604901
6504	8102401
6514	8102402
6516-8	8403601
65162C	8403603
65162-8	8403602
68000 (6MHz)	8202101
68000 (8MHz)	8202102
68000 (10MHz)	8202103
685	8600801
76321	8200801
7641	7801601
76641	8200901
7681	7902401
7820A	7900801
7831	8004101
7832	8004102
79M05	7704001
79M12	7704003
79M15	7704004
79M24	7704005
7905K	7704001
7912K	7704003
7915K	7704004
7924K	7704005
8001	8000301
8001A	8000303
8002	8000302
8080A	7700201
8085A	7901001
80C86	8405201
82288-6	8514901
82288-8	8514902
8282	8417901
8283	8417902
8286	8686801
8287	8686802
82C54	8406501
82C55A	8406601
82C82	8406701
82C84A	8406801
82C88	8406901
82C89	8552801
82S141	7801601
82S16	8602301
8397	8552001
8536	8300101
8X305	8550201
8X320	8550301
9064-15	8201009
9064-20	8201010

Generic Part Number to Desc Drawing Number

Generic Part Number	Desc Drawing Number
9128-12	8103907
9128-20	8103908
9128-90	8103906
93448	7801601
93Z565	8200901
93Z565A	8200902
9513A	8552301
99C88-10	8552503
99C88-12	8552502
99C88-15	8552501
99C88-70	8552504
AD562	8100801
AD563	8100802
AM686	7801801
AM687	7801901
AM26LS31	7802301
AM26LS32	7802001
AM26LS33	7802002
AM2932	8605001
CA3130B	7703301
CT50002	7801801
DAC87 (HYB)	8300201
DAC87 (MONO)	8300301
DG129	7801401
DG201A	7705301
DG508A	7705201
HA-2640-8	7800302
H1508A	7705202
IH5116	8513104
IH5208	8513105
IH5216	8513106
IH6108	7705201
LH0002	7801301
LH0032	8001301
LH0033	8001401
LM103H-1.8	7702801
LM103H-2.0	7702802
LM103H-2.2	7702803
LM103H-2.4	7702804
LM103H-2.7	7702805
LM103H-3.0	7702806
LM103H-3.3	7702807
LM103H-3.6	7702808
LM103H-3.9	7702809
LM103H-4.3	7702810
LM103H-4.7	7702811
LM103H-5.1	7702812
LM103H-5.6	7702813
LM106	8003701
LM117	7703401
LM117HV	7703402
LM119	8601401
LM119A	8601402
LM120H-5.0	7704001
LM120H-12	7704003
LM120H-15	7704004
LM120H-24	7704005
LM120K-5.0	7704001
LM120K-12	7704003
LM120K-15	7704004
LM120K-24	7704005
LM124	7704301
LM137	7703403
LM137HV	7703404
LM139	7700801
LM143	7800303
LM144	7800301
LM4250	7703901
M80286-6	8514802
M80286-8	8514801
MC1536B	7800304
MKB4516	8101502
NSC800(2.5 MHz)	8301301
NSC800(4 MHz)	8301302
OP07	8203602
OP07A	8203601
PAL10H8	8103501
PAL10L8	8103506
PAL12H6	8103502
PAL12L6	8103507
PAL14H4	8103503
PAL14L4	8103508
PAL16A4	8103606
PAL16C1	8103505
PAL16H2	8103504
PAL16L2	8103509
PAL16L8	8103601
PAL16L8A	8103607
PAL16L8A-2	8103611
PAL16L8A-4	8506501
PAL16R4	8103604
PAL16R4A	8103610
PAL16R4A-2	8103614
PAL16R4A-4	8506504
PAL16R6	8103603
6R6A	8103609
PAL16R6A-2	8103613
PAL16R6A-4	8506503
PAL16R8	8103602
PAL16R8A	8103608
PAL16R8A-2	8103612
PAL16R8A-4	8506502
PAL16X4	8103605
PAL20L8A	8412901
PAL20L10A	8412905
PAL20R4A	8412904
PAL20X4A	8412906
PAL20R6A	8412903
PAL20X6A	8412907
PAL20R8A	8412902
PAL20X8A	8412908
PAL22V10A	8605301
REF02A	8551401
RM4194	7705401
SG1524	7802801
TIBPAL16L8-20	8515501
TIBPAL16L8-30	8515505
TIBPAL16R4-20	8515504
TIBPAL16R4-30	8515508
TIBPAL16R6-20	8515504
TIBPAL16R6-30	8515507
TIBPAL16R8-20	8515502
TIBPAL16R8-30	8515506
TL061	8102301
TL062	8102302
TL064	8102303
TL071	8102304
TL072	8102305
TL074	8102306
TL431	8410901
TP0032	8001301
TP0033	8001401
UHC0508	8550001
XR-2211	7705001
Z8001	8000301
Z8001A	8000303
Z8001B	8000304
Z8002	8000302
Z8002B	8000305
Z8030	8551802
Z8030A	8551801
Z8036	8551702
Z8036A	8551701
Z8430	8301602
Z8430A	8301601
Z8442	8301502
Z8442A	8301501
Z8536	8300101
Z8536A	8300102

Desc Drawing Number to Generic Part Number

Desc Drawing Number	Generic Part Number
7600201	54LS157
7600301	54LS122
7600401	54LS132
7600501	54LS138
7600601	54LS193
7600701	54LS139
7600801	54LS161
7600901	54LS191
7601001	54LS151
7601101	54LS153
7601201	54LS75
7601301	54LS76
7601401	54LS83A
7601501	54LS197
7601601	54LS251
7601701	54LS253
7601801	54LS279
7601901	54LS298
7602001	54LS26
7603101	54LS42
7603201	54LS90
7603301	54LS158
7603401	54LS163
7603501	54LS190
7603601	54LS192
7603701	54LS257
7603801	54LS258
7603901	54LS123
7604001	54S194
7604101	54S138
7604201	54LS221
7604301	54LS283
7604501	54LS47
7700101	54LS93
7700201	8080A
7700401	54S139
7700601	54LS165
7700701	2901A, B
7700801	LM139
7700901	54LS160
7701001	54LS196
7702001	4502B
7702301	4520B
7702401	4081B
7702501	4094B
7702601	4044B
7702701	4069B
7702801	LM103H-1.8
7702802	LM103H-2.0
7702803	LM103H-2.2
7702804	LM103H-2.4
7702805	LM103H-2.7
7702806	LM103H-3.0
7702807	LM103H-3.3
7702808	LM103H-3.6
7702809	LM103H-3.9
7702810	LM103H-4.3
7702811	LM103H-4.7
7702812	LM103H-5.1
7702813	LM103H-5.6
7703001	54185A
7703101	4060A
7703201	4515B
7703301	3130
7703301	CA3130B
7703401	LM117
7703402	LM117HV
7703403	LM137
7703404	LM137HV
7703501	4514B
7703601	54C08
7703701	54C85
7703702	4585
7703901	LM4250
7704001	7905K
7704001	79M05
7704001	LM120H-5.0
7704001	LM120K-5.0
7704003	7912K
7704003	79M12
7704003	LM120H-12
7704003	LM120K-12
7704004	7915K
7704004	79M15
7704004	LM120H-15
7704004	LM120K-15
7704005	7924K
7704005	79M24
7704005	LM120H-24
7704005	LM120K-24
7704101	54LS124
7704201	54LS670
7704301	LM124
7704401	4078B
7704501	4528B
7704601	4093B
7704701	4555B
7704801	4556B
7704901	55452
7705001	XR-2211
7705101	4073B
7705201	508A
7705201	DG508A
7705201	IH6108
7705201	6108
7705202	508A (0-Vprot.)
7705202	H1508A
7705301	201A
7705301	DG201A
7705401	RM4194
7705501	4098B
7705601	54C906
7705701	54LS244
7705801	4040B
7705901	4082B
7706001	4072B
7800301	LM144
7800302	HA-2640-8
7800302	2640
7800303	LM143
7800304	MC1536B
7800304	1536
7800801	0056
7800901	10516
7801001	54LS273
7801101	54LS374
7801201	54LS240
7801301	CT50002
7801301	LH0002
7801401	DG129
7801501	27S07A
7801502	54S189
7801503	27S07
7801504	27LS07
7801601	82S141
7801601	5341
7801601	7641
7801601	93448
7801701	2910
7801702	2910A
7801801	AM686
7801901	AM687
7802001	AM26LS32
7802002	AM26LS33
7802201	2516-45
7802202	2716 (350 ns)
7802301	AM26LS31
7802401	54LS299
7802402	25LS299
7802601	54LS390
7802701	54LS148
7802801	SG1524
7802901	15530-8
7900801	55182
7900801	7820A
7900901	55183
7901001	8085A
7901101	4013B
7901201	4021B
7901301	4023B
7901401	4049UB
7901501	4052B
7901601	4557B
7901701	1854
7901801	1823
7901901	1853
7902401	29633
7902401	7681
8000301	Z8001
8000302	Z8002
8000303	Z8001
8000304	Z8001B
8000305	Z8002B
8001201	2732
8001203	2732A25
8001204	2732A45
8001301	LH0032
8001301	TP0032
8001401	LH0033
8001401	TP0033
8001601	2420
8001701	54LS166
8001801	54LS168
8001802	54LS169A
8001901	54LS09
8002001	54LS242
8002002	54LS243
8002101	54LS245
8002201	54S251
8002301	54S258
8002501	54LS170
8002601	54LS261
8003701	LM106
8004101	7831
8004102	7832
8100601	5040
8100602	5041
8100603	5042
8100604	5043
8100605	5044
8100606	5045

Desc Drawing Number to Generic Part Number

Desc Drawing Number	Generic Part Number
8100607	5046
8100608	5047
8100609	5040
8100610	5041
8100611	5042
8100612	5043
8100613	5044
8100614	5045
8100615	5046
8100616	5047
8100801	AD562
8100802	AD563
8101501	2118
8101502	MKB4516
8101601	4029B
8101701	4035B
8101801	4053B
8101901	4042B
8102001	4047B
8102101	54LS629
8102301	TL061
8102302	TL062
8102303	TL064
8102304	TL071
8102305	TL072
8102306	TL074
8102401	6504
8102402	6514
8102801	6N134
8103501	PAL10H8
8103502	PAL12H6
8103503	PAL14H4
8103504	PAL16H2
8103505	PAL16C1
8103506	PAL10L8
8103507	PAL12L6
8103508	PAL14L4
8103509	PAL16L2
8103601	PAL16L8
8103602	PAL16R8
8103603	PAL16R6
8103604	PAL16R4
8103605	PAL16X4
8103606	PAL16A4
8103607	PAL16L8A
8103608	PAL16R8A
8103609	PAL16R6A
8103610	PAL16R4A
8103611	PAL16L8A-2
8103612	PAL16R8A-2
8103613	PAL16R6A-2
8103614	PAL16R4A-2
8103906	9128-90
8103907	9128-12
8103908	9128-20
8200501	2764 (450 ns)
8200502	2764 (250 ns)
8200503	2764A (350 ns)
8200504	2764A (250 ns)
8200505	2764A (200 ns)
8200701	4167 (100 ns)
8200702	4167 (70 ns)
8200703	4167 (55 ns)
8200801	76321
8200901	27S49
8200901	93Z565
8200901	76641
8200902	27S49A
8200902	93Z565A
8201001,02	4564 (150 ns)
8201003	4564 (200 ns)
8201006	4164 (150 ns)
8201007	4164 (200 ns)
8201008	4164 (120 ns)
8201009	9064-15
8201010	9064-20
8202101	68000 (6 MHz)
8202102	68000 (8 MHz)
8202103	68000 (10 MHz)
8202201	40174B
8202501	27128 (450 ns)
8202502	27128 (250 ns)
8202503	27128A-20
8202504	27128A-30
8202505	27128A-25
8202506	27128A-15
8202507	27128A-11
8203601	OP07A
8203602	OP07
8300101	Z8536
8300102	Z8536A
8300201	DAC87 (HYB)
8300301	DAC87 (MONO)
8301301	NSC800 (2.5 MHz)
8301302	NSC800 (4 MHz)
8301501	Z8442A
8301502	Z8442
8301601	Z8430A
8301602	Z8430
8301701	54LS154
8301901	54ALS174
8301902	54ALS175
8302001	54ALS373
8302002	54ALS374
8302101	54ALS299
8302102	54ALS323
8302201	54ALS161B
8302202	54ALS163B
8302203	54ALS561A
8302401	6N140A
8302501	54ALS169B
8302502	54ALS569A
8400001	54ALS109A
8400002	54ALS112A
8400101	54ALS574
8400102	54ALS576
8401001	54ALS874
8401002	54ALS876
8401101	54ALS74A
8401201	54ALS573
8401202	54ALS580
8401301	54ALS242A
8401302	54ALS243A
8403001	54ALS245A
8403101	54ALS1034
8403201	54ALS873
8403202	54ALS880
8403301	54ALS645A
8403601	6516-8
8403602	65162-8
8403603	65162C
8403701	54HC00
8403801	54HC10
8403901	54HC20
8404001	54HC30
8404101	54HC02
8404201	54HC27
8404301	54HC266
8404401	54HC4002
8404501	54HC32
8404601	54HC86
8404701	54HC08
8404801	54HC11
8405201	80C86
8405301	32010
8405601	54HC74
8405701	2901C
8405901	54ALS1000A
8406001	54ALS1010
8406101	54ALS1004
8406201	54HC138
8406401	54HC147
8406501	82C54
8406601	82C55A
8406701	82C82
8406801	82C84A
8406901	82C88
8407001	54HC75
8407101	54HC374
8407201	54HC373
8407301	54HC174
8407401	54HC240
8407501	54HC161
8407901	54ALS162A
8408501	54HC245
8408801	54HC112
8408901	54HC175
8409001	54HC243
8409101	54HC14
8409201	54HC139
8409301	54HC153
8409401	54HC162
8409501	54HC165
8409601	54HC244
8409701	54ALS1008A
8409801	54HC04
8409901	54HC273
8410001	54HC393
8410901	TL431
8411101	27256 (350 ns)
8411102	27256 (250 ns)
8411103	27256 (200 ns)
8411104	27256-17
8412801	54HC151
8412901	PAL20L8A
8412902	PAL20R8A
8412903	PAL20R6A
8412904	PAL20R4A
8412905	PAL20L10A
8412906	PAL20X8A
8412907	PAL20X10A
8412908	PAL20X4A
8413201	65262
8413202	51C67
8413401	54ALS153
8413501	54ALS251
8413601	54ALS273
8414101	54ALS151
8414201	54ALS09
8414301	54ALS21A
8414501	54ALS832

DESC CROSS-REFERENCE GUIDE

Desc Drawing Number to Generic Part Number

Desc Drawing Number	Generic Part Number
8415001	54HC109
8415101	54LS682
8415201	54LS684
8415301	54LS688
8415401	54LS399
8415501	54LS540
8415601	54LS541
8416101	54LS640
8416201	54HC164
8417901	8282
8417902	8283
8418001	LM136A
8418501	733
8418601	Z8420A
8418602	Z8420
8419001	8751H-8
8500101	54HC365
8500201	54HC367
8500301	54HC4020
8500401	54HC4040
8501001	M80186 (8 MHz)
8501002	M80186 (6 MHz)
8501501	82C52
8503001	2700
8503002	2700
8503003	2702
8503004	2702
8506301	8097
8506401	80C31
8506402	80C51
8506501	PAL16L8A-4
8506502	PAL16R8A-4
8506503	PAL16R6A-4
8506504	PAL16R4A-4
8508401	54LS145
8508701	LH0041
8508801	LH0021
8508901	LH0101A
8508902	LH0101
8509601	54ALS253
8509701	54ALS257
8510201	27C64-25
8510202	27C64-35
8510203	27C64-20
8512401	54HC257
8512501	54HC251
8512601	54LS33
8512701	574AU
8512702	574AT
8512703	574AU
8512704	574AT
8512801	54HC573
8513001	54HCT244
8513101	506A
8513102	507A
8513103	509A
8513104	IH5116
8513105	IH5216
8513106	IH5208
8513501	27512-25
8513502	27512-35
8513503	27512-30
8513504	27512-45
8514801	M80286-8
8514802	M80286-6
8514901	82288-6
8514902	82288-8
8515201	4256-15
8515202	4256-20
8515301	54HC73
8515401	54HC107
8515501	TIBPAL16L8-20
8515502	TIBPAL16R8-20
8515503	TIBPAL16R6-20
8515504	TIBPAL16R4-20
8515505	TIBPAL16L8-30
8515506	TIBPAL16R8-30
8515507	TIBPAL16R6-30
8515508	TIBPAL16R4-30
8550001	UHC0508
8550101	46106B
8550102	14584
8550201	8X305
8550301	8X320
8550401	54HCT138
8550501	54HCT240
8550601	54HCT245
8550701	54HCT374
8550801	54LS353
8551101	54F245
8551401	REF02A
8551501	1526
8551701	Z8036A
8551702	Z8036
8551801	Z8030A
8551802	Z8030
8551901	54HC259
8552001	8397
8552301	9513A
8552501	99C88-15
8552502	99C88-12
8552503	99C88-10
8552504	99C88-70
8552505	6164-55
8552601	27PS191
8552602	27PS191A
8552603	27PS291
8552604	27PS291A
8552701	27S45
8552702	27S45A
8552703	27S47
8552704	27S47A
8552801	82C89
8600801	685
8600901	54HC390
8601001	54HCU04
8601101	54HC4017
8601201	54HC4024
8601301	54HC05
8601401	LM119
8601402	LM119A
8601701	2904
8601801	55500
8601802	55501
8602001	27LS00
8602002	27LS00A
8602003	27LS01
8602004	27LS01A
8602301	82S16
8602501	29705A
8602701	2909A
8602801	2911A
8602901	291A
8603001	2940
8604901	63105
8605001	AM2932
8605101	27S02
8605102	27S02A
8605103	27LS02
8605104	27S03
8605106	27S03A
8605107	27LS03
8605201	8X350
8605301	PAL22V10A
8605801	2803
8606101	54HC157
8606201	54HC563
8606401	5539
8606901	54F85
8607601	54HC163
8607701	54HC280
8608101	2168-55
8608102	2168-70
8608103	2169-50
8608104	2169-70
8670101	54HCT154
8670201	2919
8670201	25L52519
8670301	27S19
8670302	27S19A
8670401	1842
8670601	27S35
8670602	27S35A
8670603	27S37
8670604	27S37A
8670701	2965
8670702	2966
8670801	25LS09
8670901	82S105
8671001	54F381
8671101	LM113
8671102	LM113-1
8671103	LM113-2
8671201	1545
8671301	25LS2521
8671401	2917A
8671501	2918
8671901	25LS2518
8672501	25S241
8680101	2942
8681201	54HC368
8681301	54HC533
8681401	54HC534
8681501	54HC564
8681601	54HC595
8681701	54HC597
8681801	54HC688
8681901	54HC4049
8682001	54HC4050
8682101	54HC42
8682201	54HC154
8682301	54HC158
8682401	54HC160
8682501	54HC173
8682601	54HC194
8682701	54HC195
8682801	54HC366
8684001	54ALS191
8685201	54HCT32
8685301	54HCT74
8686801	8286
8686802	8287

INTERFACE CIRCUITS

TI offers a broad line of linear interface products for applications involving an interface between logic circuitry and the real world. This includes microprocessor-compatible circuits that can amplify, convert analog signals, transmit and receive digital signals or drive actuators or displays.

TI's linear interface circuits represent technologies from classic bipolar through BIFET and BIDFET, to LinCMOS™ and Advanced LinCMOS™ processes. LinCMOS and Advanced LinCMOS feature a step-function improvement in impedance, power dissipation and threshold stability.

Also available are surface mount packages including plastic and ceramic chip carriers and small outline (SO) packages. These increase board density with little impact on power handling capability.

Readers should refer to the Catalog Products Alphanumeric Index in Section 1, and to Section 12 of the Master Selection Guide for additional information on technical documentation.

Contents **Page**

Line Circuits 6-2
- Line Drivers 6-2
- Line Receivers 6-3
- Line Transceivers 6-5

Display Drivers 6-6
- Electroluminescent Display Drivers 6-6
- LED Display Drivers 6-7
- Vacuum Fluorescent Display Drivers 6-7
- Plasma and Gas Discharge Display Drivers 6-8
- AC Plasma Display Drivers 6-8

Peripheral Drivers 6-9
- General Purpose Drivers and Actuators 6-9
- Motor Drivers and Power Actuators 6-10

Memory Interface 6-11
- MOS-Memory Sense Amplifiers 6-11

Ordering Instructions 6-12

LINE CIRCUITS

Line Drivers

APPLICATION	OUTPUT	DRIVERS PER PACKAGE	TYPE	PACKAGES	DOCUMENT
EIA Standard RS-422-A	Differential	2	SN75158	D,JG,P	SLYD002
			SN75159	D,J,N	
			μA9638	D,JG,P	
		4	AM26LS31	D,FK,J,N	SLYD002
			MC3487	D,J,N	
			SN75151	DW,J,N	
			SN75153	J,N	
			SN75172	J,N	
			SN75174	J,N	
			SN75ALS192	D,J,N	
			SN75ALS194	D,J,N	
EIA Standard RS-485	Differential	4	SN75172	J,N	SLYD002
			SN75174		
EIA Standard RS-423-A	Single-Ended	2	μ9636A	D,JG,P	SLYD002
EIA Standard RS-232-C	Single-Ended	2	SN75150	D,JG,P	SLYD002
			μ9636A		
		4	SN75188	D,J,N	SLYD002
IBM 360/370	Single-Ended	2	SN75123	D,J,N	SLYD002
		4	SN75ALS126	D,N	SLYD002
			SN75ALS130		
General Purpose	Single-Ended	2	SN75121	D,J,N	SLYD002
			SN75ALS121	D,N	SLLS030
	Differential	2	SN75109A	D,J,N	SLYD002
			SN75110A		
			SN75112		
			SN75113		
			SN75114		
			SN75183		
		4	MC3453	D,J,N	SLYD002
			SN75111		

Line Receivers

APPLICATION	OUTPUT	RECEIVERS PER PACKAGE	TYPE	PACKAGES	DOCUMENT
EIA Standard RS-422-A	Differential	2	SN75146	D,JG,P	SLYD002
			SN75157		
			μ9637A		
			μ9639		
		4	AM26LS32A	D,FK,J,N	SLYD002
			MC3486	D,J,N	
			SN75173	D,J,N	
			SN75175	D,J,N	
			SN75ALS193	J	
			SN75ALS195	J	
EIA Standard RS-485	Differential	4	SN75173	D,J,N	SLYD002
			SN75175		
EIA Standard RS-423-A	Single-Ended	2	SN75146	D,JG,P	SLYD002
			SN75157		
			μ9637A		
			μ9639		
		4	AM26LS32A	D,FK,J,N	SLYD002
			MC3486	D,J,N	
			SN75173	D,J,N	
			SN75175	D,J,N	
			SN75ALS193	J	
			SN75ALS195	J	
EIA Standard RS-232-C	Single-Ended	2	SN75152	D,J,N	SLYD002
		4	SN75154	D,J,N	SLYD002
			SN75189		
			SN75189A		
IBM 360/370	Single-Ended	2	SN75ALS123	D,N	SLLS031
		3	SN75124	D,J,N	SLYD002
		7	SN75125	D,J,N	SLYD002
			SN75127	D,J,N	
			SN75ALS127	D,N	
		8	SN75128	DW,J,N	SLYD002
			SN75129		
General Purpose	Single-Ended	2	SN75122	D,J,N	SLYD002
			SN75140	D,JG,P	
			SN75141	D,JG,P	

Line Receivers (Continued)

APPLICATION	OUTPUT	RECEIVERS PER PACKAGE	TYPE	PACKAGES	DOCUMENT
General Purpose	Differential	2	SN75107A	D,J,N	SLYD002
			SN75107B		
			SN75108A		
			SN75108B		
			SN75115		
			SN75182		
			SN75207		
			SN75207B		
			SN75208		
			SN75208B		
		4	AM26LS33A	D,FK,J,N	SLYD002
			MC3450	D,J,N	
			MC3452	D,J,N	

Line Transceivers

APPLICATION	OUTPUT	DRIVERS PER PACKAGE	TYPE	PACKAGES	DOCUMENT
EIA Standard RS-232-C	Single-Ended	1	SN75155	D,JG,P	SLYD002
EIA Standard RS-422-A and EIA Standard RS-485	Differential	1	SN65176B	D,JG,P	SLYD002
			SN75176B		
			SN75177B		
			SN75178B		
			SN75179B		
EIA Standard 488 GPIB	Single-Ended	4	MC3446	D,J,N	SLYD002
		8	SN75160B	DW,J,N	SLYD002
			SN75ALS160	DW,J,N	
			SN75161B	DW,J,N	
			SN75ALS161	DW,J,N	
			SN75162B	DW,N	
			SN75ALS162	DW,N	
			SN75164B	DW,N	
			SN75ALS164	DW,N	
			SN75ALS165	DW,N	
IEEE 802.3 1BASE5	Differential	1	SN75061	DW,N	SLYD002
			SN75062		
General Purpose	Single-Ended	4	AM26S10C	D,J,N	SLYD002
			AM26S11C		
			SN75136		
			SN75138		
		8	SN75163B	DW,J,N	SLYD002
			SN75ALS163	DW,N	
	Differential	1	SN75116	D,J,N	SLYD002
			SN75117	D,JG,P	
			SN75118	D,J,N	
			SN75119	D,JG,P	
IEEE 896.1	Single-Ended	8	SN75ALS056	DW,N	SLLS028A
		4	SN75ALS057	DW,N	SLLS028A

DISPLAY DRIVERS

Electroluminescent Display Drivers

DESCRIPTION	PRODUCT FEATURES	DRIVERS PER PKG.	INPUT COMPATIBILITY	POWER SUPPLY	TYPE	PACKAGES	DOCUMENT
Row Drivers	• 225-V open-drain DMOS outputs • Serial-in, parallel-out architecture • 50-mA current sink output capability • Extremely low steady state power consumption • Left side (SNXX551) and right side (SNXX552) drivers enhance circuit layout	32	CMOS	V_{CC1} (logic) = 10.8 V to 15 V	SN65551 SN65552 SN75551 SN75552	FN,N	SLYD002
	• Monolithic BIDFET integrated circuits • Very low steady-state power consumption • 300-mA output capability • High-voltage open-collector N-P-N outputs	32	CMOS	V_{CC1} (logic) = 10.8 V to 15 V	SN75557 SN75558	FN	SLYD002
	• 225-V totem-pole BIDFET output structures • 70-mA output source/sink capability • Very low steady-state power consumption • 3-state capabilities • Selectable open-source or open-drain output	34	CMOS	V_{CC1} (logic) = 10.8 V to 15 V	SN65563 SN65564 SN75563 SN75564	FN	SLYD002
Column Drivers	• 60-V totem-pole BIDFET output structures • Serial-in, parallel-out architecture • 15-mA sink or source output capability • Top (SNXX553) and bottom (SNXX554) drivers enhance circuit layout	32	CMOS	V_{CC1} (logic) = 10.8 V to 15 V	SN65553 SN65554 SN75553 SN75554	FN,N	SLYD002
	• 90-V output voltage swing capability • 15-mA output source and sink current capability • High-speed serially-shifted data input • Totem-pole outputs • Latches on all driver outputs	32	CMOS	V_{CC1} (logic) = 10.8 V to 15 V to 15 V	SN65555 SN65556 SN75555 SN75556	FN,N	SLYD002
	• Energy recovery system compatible • 4.5-V to 5.5-V V_{CC1} operation at 5 MHz • Two parallel high-speed 16-bit shift registers • 60-V totem-pole BIDFET output structures • 15-mA sink or source output capability • Top (SNXX567) and bottom (SNXX568) drivers enhance circuit layout	32	CMOS	V_{CC1} (logic) = 4.5 V to 5.5 V	SN65567 SN65568 SN75567 SN75568	FN	SLYD002

LED Display Drivers

DESCRIPTION	PRODUCT FEATURES	DRIVERS PER PKG.	INPUT COMPATIBILITY	POWER SUPPLY	TYPE	PACKAGES	DOCUMENT
Digit Drivers	• 250-mA sink capability • Display blanking provisions	6	MOS	Variable from 3.2 V to 8.8 V	SN75494	N	SLYD002

Vacuum Fluorescent Display Drivers

DESCRIPTION	PRODUCT FEATURES	DRIVERS PER PKG.	INPUT COMPATIBILITY	POWER SUPPLY	TYPE	PACKAGES	DOCUMENT
Anode Grid Drivers Segment or Dot Matrix Formats	• Serial-in, parallel-out architecture • 60-V totem-pole outputs • 25-mA current source output capability • On-board latches	12	TTL	V_{CC1} (logic) = 5 V to 15 V, V_{CC2} (display) = 0 V to 60 V	SN65512B SN75512B	DW,N	SLYD002
	• All features same as SN65512B except Shift register reset replaces latches	12	TTL	V_{CC1} (logic) = 5 V to 15 V, V_{CC2} (display) = 0 V to 60 V	SN65513B SN75513B	DW,N	SLYD002
	• All features same as SN65512B except 125-V totem-pole output	12	CMOS	V_{CC1} (logic) = 5 V to 15 V, V_{CC2}, V_{CC3}, (display) = 0V to 130 V	SN75514	DW,N	SLYD002
	• All features same as SN65512B except 32 bits for large format displays	32	CMOS, TTL	V_{CC1} (logic) = 5 V to 15 V, V_{CC2} (display) = 0V to 60 V	SN65518 SN75518	FN,N	SLYD002
	• Serial-in, parallel-out architecture • 60-V totem-pole outputs • 40-mA current source output capability • Second source to Sprague UCN-4810A	10	CMOS,TTL	V_{CC1} (logic) = 5 V to 15 V, V_{CC2} (display) = 0 V to 60 V	UCN4810A	N	SLYD002
	• Serial-in, parallel-out architecture • 60-V totem-pole outputs • 40-mA current source output capability • Improved direct replacement for UCN4810A and TL4810A	10	CMOS	V_{CC1} (logic) = 5 V to 15 V, V_{CC2} (display) = 0 V to 60 V	TL4810B TL4810BI	DW,N	SLYD002
	• 70-V output voltage swing capability • Drives up to 20 lines	20	CMOS	V_{CC1} (logic) = 5 V to 15 V, V_{CC2} (display) = 0V to 60 V	TL5812	FN,N	SLYD002

Plasma and Gas Discharge Display Drivers

DESCRIPTION	PRODUCT FEATURES	DRIVERS PER PKG.	INPUT COMPATIBILITY	POWER SUPPLY	TYPE	PACKAGES	DOCUMENT
Scan Line Drivers	▪ 180-V open drain parallel outputs ▪ 220-mA parallel output sink current ▪ Left side (SN751506) and right side (SN751516) drivers enhance circuit layout	32	CMOS	V_{CC} (logic) = 4 V to 6 V	SN751506 SN751516	FT	SLYD002
Data Line Drivers	▪ −120-V open collector P-N-P parallel outputs ▪ Two parallel high-speed 16-bit shift registers ▪ Latches on all driver outputs ▪ Top (SN751508) and bottom (SN751518) drivers enhance circuit layout	32	CMOS	V_{CC} (logic) = 4.5 V to 5.5 V	SN751508 SN751518	FT	SLYD002
Anode Drivers	▪ Serial-in, parallel-out architecture ▪ 150-V output capability ▪ Alternative driver for VF	7	TTL	V_{CC+} = 4.5 V to 5.5 V, V_{CC} = −10.8 V to ±13.2 V	SN75581	J,N	SLYD002

AC Plasma Display Drivers

DESCRIPTION	PRODUCT FEATURES	DRIVERS PER PKG.	INPUT COMPATIBILITY	POWER SUPPLY	TYPE	PACKAGES	DOCUMENT
Axis Drivers	▪ High-speed serial-in, parallel-out architecture (8 MHz) ▪ Fast output transitions (150 ns typ) ▪ 15-mA output current capability ▪ X-axis driver (SNXX500) ▪ Y-axis driver (SNXX501)	32 (8 bits with 1 of 4 selectors)	CMOS	V_{CC1} (logic) = 10.8 V to 13.2 V, V_{CC2} (display) = 0 V to 100 V	SN65500E SN75500E SN65501E SN75501E	FN,N	SLYD002
	▪ High-speed serial-in, parallel-out ▪ X-axis driver (SN75509) ▪ Y-axis driver (SN75508)	32 32 × 1	CMOS	V_{CC1} (logic) = 7.65 V to 9.35 V, V_{CC2} (display) = V_{CC1} to 90 V	SN75508	FN	SLYD002
		32 (8 bits plus 2 select bits)	CMOS	V_{CC1} (logic) = 8 V to 11.4 V, V_{CC2} (display) = V_{CC1} to 90 V	SN75509	FN	SLYD002

PERIPHERAL DRIVERS

General Purpose Drivers and Actuators

FUNCTION	INPUT CAPABILITY	SWITCHING VOLTAGE MAX (V)	OFF-STATE VOLTAGE MAX (V)	OUTPUT CURRENT (mA)	DRIVERS PER PACKAGE	OUTPUT CLAMP DIODES	DELAY TIME TYP (ns)	TYPE	PACKAGES	DOCUMENT
AND	TTL	20	30	300	2	No	18	SN75451B	D,P	SLYD002
NAND	TTL	20	30	300	2	No	25	SN75452B	D,P	SLYD002
OR	TTL	20	30	300	2	No	18	SN75453B	D,P	SLYD002
NOR	TTL	20	30	300	2	No	26	SN75454B	D,P	SLYD002
MOS Driver	TTL	24	24	500	2	Yes	35	SN75372	D,P	SLYD002
MOS Driver	TTL	24	24	500	4	Yes	35	SN75374	D,N	SLYD002
AND	TTL	30	35	300	2	No	28	SN75461	D,P	SLYD002
NAND	TTL	30	35	300	2	No	38	SN75462	D,P	SLYD002
OR	TTL	30	35	300	2	No	28	SN75463	D,P	SLYD002
Invert w/Enable	TTL,CMOS	35	70	500	4	Yes	1050	SN75437A	NE	SLYD002
Invert w/Enable	TTL,CMOS	35	70	600	4	Yes	750	SN75435	NE	SLYD002
Buffer w/Enable	CMOS, MOS, TTL	35	70	600	4	Yes	1450	SN75440	NE	SLYD002
Invert w/Enable	TTL,CMOS	35	70	1000	4	Yes	1050	SN75438	NE	SLYD002
Invert	TTL	35	50	1250	4	Yes	500	SN75064	NE	SLYD002
Invert	MOS	35	50	1250	4	Yes	500	SN75066	NE	SLYD002
Invert	TTL,5 V MOS	35	50	1250	4	Yes	500	SN75068	NE	SLYD002
Invert	TTL,5 V MOS	35	50	1500	4	No	500	UDN2841	NE	SLYD002
Invert	TTL,5 V MOS	35	50	1500	4	No	500	UDN2845	NE	SLYD002
Invert	TTL	35	50	1250	4	Yes	500	ULN2064	NE	SLYD002
Invert	MOS	35	50	1250	4	Yes	500	ULN2066	NE	SLYD002
Invert	TTL,CMOS	35	50	1250	4	Yes	500	ULN2068	NE	SLYD002
Invert	TTL,CMOS	35	50	1250	4	No	500	ULN2074	NE	SLYD002
AND	TTL,CMOS	55	70	350	2	Yes	300	SN75446	D,P	SLYD002
NAND	TTL,CMOS	55	70	350	2	Yes	300	SN75447	D,P	SLYD002
OR	TTL,CMOS	55	70	350	2	Yes	300	SN75448	D,P	SLYD002
NOR	TTL,CMOS	55	70	350	2	Yes	300	SN75449	D,P	SLYD002
NAND	TTL,CMOS	50	70	500	2	Yes	500	SN75407	D,P	SLYD002
OR	TTL,CMOS	50	70	500	2	Yes	500	SN75408	D,P	SLYD002
Invert w/Enable	TTL,CMOS	50	70	500	4	Yes	1050	SN75436	NE	SLYD002
Invert	TTL,CMOS, PMOS	50	50	350	7	Yes	250	ULN2001A	D,N	SLYD002
Invert	25 V PMOS	50	50	350	7	Yes	250	ULN2002A	D,N	SLYD002
Invert	TTL,CMOS	50	50	350	7	Yes	250	ULN2003A	D,N	SLYD002
Invert	15 V MOS	50	50	350	7	Yes	250	ULN2004A	D,N	SLYD002
Invert	TTL	50	50	350	7	Yes	250	ULN2005A	D,N	SLYD002
Invert	TTL	50	80	1500	4	Yes	500	SN75065	NE	SLYD002
Invert	MOS	50	80	1500	4	Yes	500	SN75067	NE	SLYD002
Invert	TTL,5 V MOS	50	80	1500	4	Yes	500	SN75069	NE	SLYD002
Invert	TTL	50	80	1500	4	Yes	500	ULN2065	NE	SLYD002
Invert	TTL	50	80	1500	4	Yes	500	ULN2067	NE	SLYD002
Invert	TTL,5 V MOS	50	80	1500	4	Yes	500	ULN2069	NE	SLYD002
Invert	TTL,5 V MOS	50	80	1500	4	No	500	ULN2075	NE	SLYD002

General Purpose Drivers and Actuators (Continued)

FUNCTION	INPUT CAPABILITY	SWITCHING VOLTAGE MAX (V)	OFF-STATE VOLTAGE MAX (V)	OUTPUT CURRENT (mA)	DRIVERS PER PACKAGE	OUTPUT CLAMP DIODES	DELAY TIME TYP (ns)	TYPE	PACKAGES	DOCUMENT
AND	TTL	55	70	300	2	No	28	SN75471	D,P	SLYD002
NAND	TTL	55	70	300	2	No	38	SN75472	D,P	SLYD002
OR	TTL	55	70	300	2	No	28	SN75473	D,P	SLYD002
AND	TTL,CMOS	55	70	300	2	Yes	200	SN75476	D,P	SLYD002
NAND	TTL,CMOS	55	70	300	2	Yes	200	SN75477	D,P	SLYD002
OR	TTL,CMOS	55	70	300	2	Yes	200	SN75478	D,P	SLYD002
NOR	TTL,CMOS	55	70	300	2	Yes	200	SN75479	D,P	SLYD002
Telecom Ry Drv	TTL,CMOS, MOS	60	60	100	4	Yes	1000	DS3680	D,J,N	SLYD002
Invert	TTL	60	100	350	7	Yes	250	SN75465	D,N	SLYD002
Invert	TTL,CMOS, PMOS	60	100	350	7	Yes	250	SN75466	D,N	SLYD002
Invert	25 V PMOS	60	100	350	7	Yes	250	SN75467	D,N	SLYD002
Invert	TTL,CMOS	60	100	350	7	Yes	250	SN75468	D,N	SLYD002
Invert	15 V MOS	60	100	350	7	Yes	250	SN75469	D,N	SLYD002

Motor Drivers and Power Actuators

FUNCTION	INPUT CAPABILITY	SWITCHING VOLTAGE MAX (V)	OFF-STATE VOLTAGE MAX (V)	OUTPUT CURRENT (mA)	DRIVERS PER PACKAGE	OUTPUT CLAMP DIODES	TYPE	PACKAGES	DOCUMENT
Half-H Driver	TTL,MOS, CMOS	18	18	500	3	No	TL376C	NE	SLYD002
Half-H Driver	TTL	36	36	600	4	Yes	L293D	NE	SLYD002
Half-H Driver	TTL	36	36	1000	4	No	L293	NE	SLYD002
Half-H Driver	TTL,CMOS	36	36	1000	4	Yes	SN754410	NE	SLYD002
Half-H Driver	TTL,CMOS	36	36	1000	4	No	SN754411	NE	SLYD002
Half-H Driver	TTL,CMOS	40	40	2000	1	Yes	SN75603	KC,KH,KV	SLYD002
Half-H Driver	TTL,CMOS	40	40	2000	1	Yes	SN75604	KC,KH,KV	SLYD002
Half-H Driver	TTL,CMOS	40	40	2000	1	Yes	SN75605	KC,KH,KV	SLYD002
Stepper Driver	TTL	46	46	1000	1	Yes	PBL3717A	NE	SLYD002
Full-H Driver	TTL	46	46	2000	2	No	L298	KV	SLRS011
Actuator	TTL,CMOS	60	60	2500	2	Yes	SN75608	KV	SLYD002
Actuator	TTL,CMOS	60	60	2500	2	Yes	SN75609	KV	SLYD002

MEMORY INTERFACE

MOS-Memory Sense Amplifiers

OUTPUT TYPE	UNITS PER PACKAGE	THRESHOLD SENSITIVITY (mV)	t_{PD}* TYP (ns)	DEVICE TYPE	PACKAGES	DOCUMENT
Totem Pole	2	±25	17	SN75107A	D,J,N	SLYD002
Totem Pole	2	±25	17	SN75107B	D,J,N	SLYD002
Open Collector	2	±25	19	SN75108A	D,J,N	SLYD002
Open Collector	2	±25	19	SN75108B	D,J,N	SLYD002
Totem Pole	2	±10	25	SN75207	D,J,N	SLYD002
Open Collector	2	±10	25	SN75208	D,J,N	SLYD002

* t_{PD} Propagation Delay Time

Factory orders for circuits described in this guide should include a four-part type number as explained in the following example.

EXAMPLE: TL 062M JG /883B

1. Prefix

MUST CONTAIN TWO OR THREE LETTERS

TL ..... TI Linear Products (excluding Interface)
TLC ..... TI Linear Silicon-Gate CMOS Products
SN ..... TI Special Function or Interface Products
TCM ..... TI Telecommunication Products
TSP ..... Speech Products
TISP ..... Transient Suppressors

STANDARD SECOND-SOURCE PREFIXES

ADC	Analog Devices	OP	PMI
LM	National	RC, RM or RV	Raytheon
MC	Motorola	SG	Silicon General
NE, SA, or SE	Signetics	uA	Fairchild
AM	ADM	UDN	Sprague
DS	National	ULN	Sprague

2. Unique Circuit Designator Including Temperature Range (If not already specified by the prefix)

MUST CONTAIN THREE TO SEVEN CHARACTERS
(From Individual Data Sheets)

Examples: 062M, 5941, 532AI, 28867, 78L05AC

3. Package

MUST CONTAIN ONE OR TWO LETTERS

D, DW, FK, FN, J, JD, JG, KC, KH, KV, LP, LU, N, P, U, W
(From Pin-Connection Diagram on Individual Date Sheet)

4. MIL-STD-883B, Method 5004, Class B

OMIT/883B WHEN NOT APPLICABLE

Circuits are shipped in one of the carriers below. Unless a specific method of shipment is specified by the customer (with possible additional costs), circuits will be shipped on the most practical carrier.

Dual-In-Line (D, DW, J, JD, JG, N, P)
- — Slide Magazines
- — A-Channel Plastic Tubing
- — Barnes Carrier
- — Sectioned Cardboard Box
- — Individual Cardboard Box

Plug-In (LP, LU)
- — Barnes Carrier
- — Sectional Cardboard Box
- — Individual Cardboard Box

Chip Carriers (FK, FN)
- — Anti-Static Plastic Tubing

Flat (U, W)
- — Barnes Carrier
- — Milton Ross Carrier

Power Tab (KC, KH, KV)
- — Sleeves

LINEAR CIRCUITS

The rapid advance in high-tech digital processing creates new demands for microprocessor-compatible circuits that can sense or amplify analog signals or provide regulated power to a system. This section presents information on TI's broad line of integrated circuits designed for applications involving analog signal conditioning.

These circuits span the recent rapid development of integrated circuit technology from classical bipolar through BIFET and BIDFET to TI's LinCMOS™ processing that provides a step function improvement in input impedance, power dissipation and threshold stability. Surface mount packages include plastic and ceramic chip carriers and small-outline packages that increase board density with little impact on power handling capability.

Readers should refer to the Catalog Products Alphanumeric Index in Section 1, and to Section 12 of the Master Selection Guide for additional information on technical documentation.

Contents **Page**

Linear Signal Conditioning Circuits 7-2
Operational Amplifiers 7-2
Noncompensated, Single 7-2
Internally Compensated, Single 7-3
Internally Compensated, Dual 7-5
Internally Compensated, Quad 7-8
Differential Video Amplifiers, Magnetic-Media Read and Write Circuits 7-10
Voltage Comparators 7-11
Internally Compensated, Single 7-11
Data Acquisition and Conversion Circuits 7-13
Single-and Dual-Slope A/D Converters 7-13
Successive-Approximation and Semi-Flash A/D Converters, D/A Converters 7-14
Analog Interface for Digital Signal Processors, Analog Switches and Multiplexers 7-15
Switched-Capacitor Filter ICs 7-15
Power Supply Circuits 7-16
Power Supply Supervisors 7-16
Voltage Regulators 7-16
Shunt Voltage Regulators/References, Adjustable Series Pass Voltage Regulators 7-16
Positive Voltage Regulators 7-17
Negative Voltage Regulators 7-18
Switched-Capacitor Voltage ICs 7-18
PWM Controllers 7-19
Special Functions 7-20
Timers 7-20
Current Mirrors, Hall-Effect Products, Frequency-to-Voltage Converters 7-21
Sonar Ranging Functions, Programmable Tone/Noise Generators 7-22
Ordering Instructions 7-23

Operational Amplifiers

Noncompensated, Single

Industrial Temperature Range (Values specified for T_A = 25°C)

DESCRIPTION	SUPPLY VOLTAGE (V)		V_{IO} (mV) MAX	I_{IB} (nA) MAX	A_{VD} (V/mV) MIN	B_1 (MHz) TYP	SR (V/μs) TYP	DEVICE NUMBER	PACKAGES	DOCUMENT
	MIN	MAX								
High Performance, Bipolar	±5	±22	2	75	50	1	0.5	LM201A	D,JG,P,W	SLYD001
High Performance, Low Bias Current, Bipolar	±5	±20	2	2	50	1	0.3	LM208	D,JG,P	SLYD001
BIFET, Low Power	±1.5	±18	6	0.2	4	1	3.5	TL060I	D,JG,P	SLYD001
BIFET, Low Noise	±3.5	±18	6	200	50	3	13	TL070I	D,JG,P	SLYD001
BIFET, Low Power				400	25	3	13	TL080I		

Noncompensated, Single

Commercial Temperature Range (Values specified for T_A = 25°C)

DESCRIPTION	SUPPLY VOLTAGE (V)		V_{IO} (mV) MAX	I_{IB} (nA) MAX	A_{VD} (V/mV) MIN	B_1 (MHz) TYP	SR (V/μs) TYP	DEVICE NUMBER	PACKAGES	DOCUMENT
	MIN	MAX								
High Performance	±5	±18	7.5	250	15	1	7.5	LM301A	D,JG,P,W	SLYD001
		±20	7.5	7	25	1	0.3	LM308	D,JG,P	
Low Noise, High Speed, Bipolar	±4	±22	0.025	±35	0.007	60	15	LT1037AC	JG,P	SLOS017
			0.060	±55	0.005	60	15	LT1037C		
			0.025	±40	1000	63	17	OP-37E	JG,P	SLOS016
			0.1	±80	700	63	17	OP-37G		
BIFET, Low Power	±1.5	±18	6	0.2	4	1	3.5	TL060AC	D,JG,P	SLYD001
			6	0.2	4	1	3.5	TL060BC		
			15	0.4	3	1	3.5	TL060C		
BIFET, Low Noise	±3.5	±18	6	0.2	50	3	13	TL070AC	D,JG,P	SLYD001
			10	0.2	25	3	13	TL070C		
BIFET, General Purpose	±3.5	±18	6	0.2	50	3	13	TL080AC	D,JG,P	SLYD001
			15	0.4	25	3	13	TL080C		
General Purpose, Bipolar	±9	±18	7.5	1500	15	1	0.3	μA709C	D,JG,P	SLYD001
	±2	±18	6	500	20	1	0.5	μA748C		

Internally Compensated, Single
Automotive Temperature Range

(Values specified for T_A = 25°C)

DESCRIPTION	SUPPLY VOLTAGE (V) MIN	SUPPLY VOLTAGE (V) MAX	V_{IO} (mV) MAX	I_{IB} (nA) MAX	A_{VD} (V/mV) MIN	B_1 (MHz) TYP	SR (V/μs) TYP	DEVICE NUMBER	PACKAGES	DOCUMENT
High Performance	±2	±22	2	75	50	1	0.5	LM207	D,J,JG,N,P,W	SLYD001
	±5	±20	4	250	50	15	70	LM218	D,JG,P	
LinCMOS, Programmable	4	16	5	Typ 0.005	7	2.2	5.3	TLC271AI	D,JG,P	SLYD001
			2	Typ 0.005	7	2.2	5.3	TLC271BI		
			10	Typ 0.005	7	2.2	5.3	TLC271I		

Internally Compensated, Single
Industrial Temperature Range

(Values specified for T_A = 25°C)

DESCRIPTION		SUPPLY VOLTAGE (V) MIN	SUPPLY VOLTAGE (V) MAX	V_{IO} (mV) MAX	I_{IB} (nA) MAX	A_{VD} (V/mV) MIN	B_1 (MHz) TYP	SR (V/μs) TYP	DEVICE NUMBER	PACKAGES	DOCUMENT
Unity-Gain Voltage Follower		±5	±18	4	3		20	30	LM210	JG,P	SLYD001
BIFET, Low Power		±1.5	±18	6	0.2	4	1	3.5	TL061I	D,JG,P	SLYD001
BIFET, Adjustable, Low-Power		±1.2	±18	6	0.2	4	1	3.5	TL066I	D,JG,P	SLYD001
BIFET. Low Noise		±3.5	±18	6	0.2	50	3	13	TL071I	D,JG,P	SLYD001
BIFET, General Purpose		±3.5	±18	6	0.2	50	3	13	TL081I	D,JG,P	SLYD001
BIFET, Low Offset		±3.5	±18	0.5	0.2	50	3	13	TL087I	D,JG,P	SLYD001
BIFET, Low V_{IO}		±3.5	±18	1	0.2	50	3	13	TL088I	D,JG,P	SLYD001
Single LM324, High Performance	S/S	3	30	5	−150	50	0.6	0.3	TL321I	JG,P	SLYD001
	D/S	±1.5	±15								

Internally Compensated, Single
Commercial Temperature Range

(Values specified for T_A = 25°C)

DESCRIPTION	SUPPLY VOLTAGE (V) MIN	SUPPLY VOLTAGE (V) MAX	V_{IO} (mV) MAX	I_{IB} (nA) MAX	A_{VD} (V/mV) MIN	B_1 (MHz) TYP	SR (V/μs) TYP	DEVICE NUMBER	PACKAGES	DOCUMENT
BIFET	±3.5	±18	10	0.2	25	3	13	LF351	D,JG,P	SLOS014
	±3.5	±18	2	0.2	25	3	13	LF411	D,JG,P	SLOS011
High Performance	±2	±18	7.5	250	25	1	0.5	LM307	D,J,JG,N,P,W	SLYD001
Unity-Gain Voltage Follower	±5	±18	7.5	7		20	30	LM310	JG,P	SLYD001
High Performance	±5	±20	10	250	25	15	70	LM318	D,JG,P	SLYD001
Low Noise, High Speed, Precision Input	±2.5	±22	0.025	35	7000	5	2.5	LT1007AC	JG,P	SLOS017
			0.060	55	5000	5	2.5	LT1007C		
Low Noise, High Speed, Noncompensated, $A_{VL} \geq 5$	±2.5	±22	0.025	35	7000	12	15	LT1037AC	JG,P	SLOS017
			0.060	55	5000	12	15	LT1037C		
Low Noise, High Performance	±3	±22	4	1500	25	10	13	NE5534	JG,P	SLYD001
			4	1500	25	10	13	NE5534A		
Ultra-Low Offset Voltage	±3	±22	0.15	7	120	0.6	0.3	OP-07C	D,JG,P	SLYD001
			0.15	12	120	0.6	0.3	OP-07D		
			0.075	4	200	0.6	0.3	OP-07E		
Low Noise, High Speed	±3.5	±22	0.025	40	1000	8	2.8	OP-27E	JG,P	SLOS016
			0.1	80	700	8	2.8	OP-27G		
Low Noise, High Speed, Noncompensated, $A_{VL} \geq 5$	±3.5	±22	0.025	40	1000	12	17	OP-37E	JG,P	SLOS016
			0.1	80	700	12	17	OP-37G		
BIFET, Low Power	±1.5	±18	6	0.2	4	1	3.5	TL061AC	D,JG,P	SLYD001
			3	0.2	4	1	3.5	TL061BC		
			15	0.2	3	1	3.5	TL061C		
BIFET, Adjustable, Low-Power	±1.2	±18	6	0.2	4	1	3.5	TL066AC	D,JG,P	SLYD001
			3	0.2	4	1	3.5	TL066BC		
			15	0.4	3	1	3.5	TL066C		
BIFET, Low Noise	±3.5	±18	6	0.2	50	3	13	TL071AC	D,JG,P	SLYD001
			3	0.2	50	3	13	TL071BC		
			10	0.2	25	3	13	TL071C		
BIFET, General Purpose	±3.5	±18	6	0.2	50	3	13	TL081AC	D,JG,P	SLYD001
			3	0.2	50	3	13	TL081BC		
			15	0.4	25	3	13	TL081C		
BIFET, Low V_{IO}	±3.5	±18	0.5	0.2	50	3	13	TL087C	D,JG,P	SLYD001
			1	0.2	50	3	13	TL088C		
Single LM324, High Performance S/S	3	30	7	−250	25	0.6	0.3	TL321C	JG,P	SLYD001
Single LM324, High Performance D/S	1.5	15								

Internally Compensated, Single (Continued)

Commercial Temperature Range (Values specified for T_A = 25°C)

DESCRIPTION	SUPPLY VOLTAGE (V) MIN	SUPPLY VOLTAGE (V) MAX	V_{IO} (mV) MAX	I_{IB} (nA) MAX	A_{VD} (V/mV) MIN	B_1 (MHz) TYP	SR (V/μs) TYP	DEVICE NUMBER	PACKAGES	DOCUMENT
LinCMOS, Programmable	1	16	5	Typ 0.005	Typ 10	2.2	5.3	TLC251AC	D,JG,P	SLYD001
			2	Typ 0.005	Typ 10	2.2	5.3	TLC251BC		
LinCMOS, Programmable	1	16	10	Typ 0.005	Typ 10	2.2	5.3	TLC251C	D,JG,P	SLYD001
	3	16	5	Typ 0.005	Typ 10	2.2	5.3	TLC271AC		
	3	16	3	Typ 0.005	Typ 10	2.2	5.3	TLC271BC		
	3	16	10	Typ 0.005	10 Typ	2.2	5.3	TLC271C		
General Purpose	±2	±18	6	500	20	1	0.5	μA741C	D,JG,P	SLYD001

Internally Compensated, Dual

Automotive Temperature Range (Values specified for T_A = 25°C)

DESCRIPTION		SUPPLY VOLTAGE (V) MIN	SUPPLY VOLTAGE (V) MAX	V_{IO} (mV) MAX	I_{IB} (nA) MAX	A_{VD} (V/mV) MIN	B_1 (MHz) TYP	SR (V/μs) TYP	DEVICE NUMBER	PACKAGES	DOCUMENT
High Gain, Low Power Bipolar	S/S	3	26	7	−250	100 Typ	0.6	0.2	LM2904	D,JG,P,U	SLYD001
	D/S	±1.5	±13								
High Performance		±4	±18	6	−500	20	3	1.7	RV4558	D,JG,P	SLYD001
Low Power		±1.5	±18	8	−500	20	1	0.6	TL322I	D,JG,P	SLYD001
LinCMOS, High Bias		4	16	5	Typ 0.005	10	2.2	5.3	TLC272AI	D,JG,P	SLO3004
				2	Typ 0.005	10	2.2	5.3	TLC272BI		
				10	Typ 0.005	10	2.2	5.3	TLC272I		
				0.5	Typ 0.005	10	2.2	5.3	TLC277I		
LinCMOS, Low Bias		4	16	5	Typ 0.005	30	0.1	0.05	TLC27L2AI	D,JG,P	SLO3006
			6	2	Typ 0.005	30	0.1	0.05	TLC27L2BI		
			16	10	Typ 0.005	30	0.1	0.05	TLC27L2I		
			16	0.5	Typ 0.005	30	0.1	0.05	TLC27L7I		
LinCMOS, Medium Bias		4	16	5	Typ 0.005	20	0.6	0.6	TLC27M2AI	D,JG,P	SLO3005
				2	Typ 0.005	20	0.6	0.6	TLC27M2BI		
				10	Typ 0.005	20	0.6	0.6	TLC27M2I		
				0.5	Typ 0.005	20	0.6	0.6	TLC27M7I		

Internally Compensated, Dual
Industrial Temperature Range

(Values specified for T_A = 25°C)

DESCRIPTION		SUPPLY VOLTAGE (V) MIN	SUPPLY VOLTAGE (V) MAX	V_{IO} (mV) MAX	I_{IB} (nA) MAX	A_{VD} (V/mV) MIN	B_1 (MHz) TYP	SR (V/μs) TYP	DEVICE NUMBER	PACKAGES	DOCUMENT
High Gain, Low Power, Bipolar	S/S	3	30	5	−150	50	0.6	0.2	LM258	D,JG,P,U	SLYD001
	D/S	±1.5	±1.5								
BIFET, Low Power		±1.5	±18	6	0.2	4	1	3.5	TL062I	D,JG,P	SLYD001
BIFET, Low Noise		±3.5	±18	6	0.2	50	3	13	TL072I	D,JG,P	SLYD001
BIFET, General Purpose		±3.5	±18	6	0.2	50	3	13	TL082I	D,JG,P	SLYD001
				6	0.2	50	3	13	TL083I	J,N	
				0.5	0.2	50	3	13	TL287I	D,JG,P	
				1	0.2	50	3	13	TL288I	D,JG,P	

Internally Compensated, Dual
Commercial Temperature Range

(Values specified for T_A = 25°C)

DESCRIPTION		SUPPLY VOLTAGE (V) MIN	SUPPLY VOLTAGE (V) MAX	V_{IO} (mV) MAX	I_{IB} (nA) MAX	A_{VD} (V/mV) MIN	B_1 (MHz) TYP	SR (V/μs) TYP	DEVICE NUMBER	PACKAGES	DOCUMENT
BIFET, General Purpose		±3.5	±18	10	0.2	25	3	13	LF353	D,JG,P	SLOS012
BIFET, Low Offset		±3.5	±18	3	0.2	25	3	13	LF412	D,JG,P	SLOS012
High Gain, Low Power, Bipolar	S/S	3	30	7	−250	25	0.6	0.2	LM358	D,JG,P,U	SLYD001
	D/S	±1.5	±15								
General Purpose		±1.5	±18	6	500	20	1	0.5	MC1458	D,JG,P,U	SLYD001
Low Noise		±3	±20	4	800	25	10	9	NE5532	JG,P	SLYD001
				4	800	25	10	9	NE5532A		
High Performance		±4	±18	6	500	20	3	1.7	RC4558	D,JG,P	SLYD001
				6	250	20	4	2	RC4559	D,P	
Low Power		±2	±18	5	250	1	0.5	0.5	TL022C	D,JG,P	SLYD001
BIFET, Low Power		±1.5	±18	6	0.2	4	1	3.5	TL062AC	D,JG,P	SLYD001
				3	0.2	4	1	3.5	TL062BC		
				15	0.4	3	1	3.5	TL062C		
BIFET, Low Noise		±3.5	±18	6	0.2	50	3	13	TL072AC	D,JG,P	SLYD001
				3	0.2	50	3	13	TL072BC		
				10	0.2	25	3	13	TL072C		
BIFET, General Purpose		±3.5	±18	6	0.2	50	3	13	TL082AC	D,JG,P	SLYD001
				3	0.2	50	3	13	TL082BC		
				15	0.4	25	3	13	TL082C		
				6	0.2	50	3	13	TL083AC		
				15	0.4	25	3	13	TL083C	D,JG,N	SLYD001
				0.5	0.2	50	3	13	TL287C		
				1	0.2	50	3	13	TL288C		

Internally Compensated, Dual (Continued)

Commercial Temperature Range (Values specified for T_A = 25°C)

DESCRIPTION	SUPPLY VOLTAGE (V)		V_{IO} (mV)	I_{IB} (nA)	A_{VD} (V/mV)	B_1 (MHz)	SR (V/μs)	DEVICE NUMBER	PACKAGES	DOCUMENT
	MIN	MAX	MAX	MAX	MIN	TYP	TYP			
Low Power	±1.5	±18	10	−500	20	1	0.6	TL322C	D,JG,P	SLYD001
LinCMOS, High Bias	1	16	5	Typ 0.005	10	2.2	5.3	TLC252AC	D,JG,P	SLYD001
			2	Typ 0.005	10	2.2	5.3	TLC252BC		
			10	Typ 0.005	10	2.2	5.3	TLC252C		
LinCMOS, Low Bias	1	16	5	Typ 0.005	30	0.1	0.05	TLC25L2AC	D,JG,P	SLYD001
			2	Typ 0.005	30	0.1	0.05	TLC25L2BC		
			10	Typ 0.005	30	0.1	0.05	TLC25L2C		
LinCMOS, Medium Bias	1	16	5	Typ 0.005	20	0.6	0.6	TLC25M2AC	D,JG,P	SLYD001
			2	Typ 0.005	20	0.6	0.6	TLC25M2BC		
			10	Typ 0.005	20	0.6	0.6	TLC25M2C		
LinCMOS, High Bias	3	16	5	Typ 0.005	10	2.2	5.3	TLC272AC	D,JG,P	SLO3004
			2	Typ 0.005	10	2.2	5.3	TLC272BC		
			10	Typ 0.005	10	2.2	5.3	TLC272C		
LinCMOS, Low Bias	3	16	5	Typ 0.005	30	0.1	0.05	TLC27L2AC	D,JG,P	SLO3006
			2	Typ 0.005	30	0.1	0.05	TLC27L2BC		
			10	Typ 0.005	30	0.1	0.05	TLC27L2C		
			0.5	Typ 0.005	30	0.1	0.05	TLC27L7C		
LinCMOS, Medium Bias	3	16	5	Typ 0.005	20	0.6	0.6	TLC27M2AC	D,JG,P	SLO3005
			2	Typ 0.005	20	0.6	0.6	TLC27M2BC		
			10	Typ 0.005	20	0.6	0.6	TLC27M2C		
			0.5	Typ 0.005	20	0.6	0.6	TLC27M7C		
LinCMOS, High Bias	3	16	0.5	Typ 0.005	10 Typ	2.2	5.3	TLC277C	D,JG,P	SLO3004
General Purpose	±5	±22	6	500	25	1	0.5	μA747C	D,J,N	SLOS009

Internally Compensated, Quad
Automotive Temperature Range

(Values specified for T_A = 25°C)

DESCRIPTION		SUPPLY VOLTAGE (V) MIN	SUPPLY VOLTAGE (V) MAX	V_{IO} (mV) MAX	I_{IB} (nA) MAX	A_{VD} (V/mV) MIN	B_1 (MHz) TYP	SR (V/μs) TYP	DEVICE NUMBER	PACKAGES	DOCUMENT
Norton Amplifier, Bipolar	S/S	4.5	32		200	1.2	2.5	0.5	LM2900	J,N	SLYD001
	D/S	±2.5	±16								
Extended Temperature Range LM324		3	26	7	−250	100 Typ	0.6	0.3	LM2902	D,J,N,W	SLYD001
Low Power Bipolar	S/S	3	36	8	−500	20	1	0.6	MC3303	D,J,N	SLYD001
	D/S	±1.5	±18								
Quad μA741		±4.5	±18	6	500	20	3	1.7	RV4136	D,J,N,W	SLYD001
LinCMOS, High Bias		4	16	5	0.001 Typ	10	2.2	5.3	TLC274AI	D,J,N S	SLO3001
				2	0.001 Typ	10	2.2	5.3	TLC274BI		
				10	0.001 Typ	10	2.2	5.3	TLC274I		
				0.75	0.005 Typ	10	2.2	5.3	TLC279I	D,J,N	SLO3001
LinCMOS, Low Bias		4	16	5	0.005 Typ	30	0.1	0.05	TLC27L4AI	D,J,N	SLYD001
				2	0.005 Typ	30	0.1	0.05	TLC27L4BI		
				10	0.005 Typ	30	0.1	0.05	TLC27L4I		
				5	0.005 Typ	30	0.1	0.05	TLC27L9I	D,J,N	SLO3002
LinCMOS, Medium Bias		4	16	5	0.005 Typ	20	0.6	0.6	TLC27M4AI	D,J,N	SLYD001
				2	0.005 Typ	20	0.6	0.6	TLC27M4BI		
				10	0.005 Typ	20	0.6	0.6	TLC27M4I		
				2	0.005 Typ	20	0.6	0.6	TLC27M9I	D,J,N	SLO3003

Internally Compensated, Quad
Industrial Temperature Range

(Values specified for T_A = 25°C)

DESCRIPTION		SUPPLY VOLTAGE (V) MIN	SUPPLY VOLTAGE (V) MAX	V_{IO} (mV) MAX	I_{IB} (nA) MAX	A_{VD} (V/mV) MIN	B_1 (MHz) TYP	SR (V/μs) TYP	DEVICE NUMBER	PACKAGES	DOCUMENT
General Purpose, Bipolar		3	30	5	150	50	0.6	0.3	LM224	D,J,N,W	SLYD001
		±4	±18	6	200	25	1	0.5	LM248	D,J,N	
Single Supply, Norton Amplifier, Bipolar	S/S	4	32	200		1.2	2.5	0.5	LM2900	D,J,N	SLYD001
	D/S	±2	±16								
BIFET, Low Power		±1.5	±18	6	0.2	4	1	3.5	TL064I	D,J,N	SLYD001
BIFET, Low Noise				6	0.2	50	3	13	TL074I		
BIFET, General Purpose		±3.5	±18	6	0.2	50	3	13	TL084I	D,J,N	SLYD001

Internally Compensated, Quad

Commercial Temperature Range (Values specified for T_A = 25°C)

DESCRIPTION		SUPPLY VOLTAGE (V) MIN	SUPPLY VOLTAGE (V) MAX	V_{IO} (mV) MAX	I_{IB} (nA) MAX	A_{VD} (V/mV) MIN	B_1 (MHz) TYP	SR (V/μs) TYP	DEVICE NUMBER	PACKAGES	DOCUMENT
BIFET, General Purpose		±3.5	±18	10	0.2	25	3	13	LF347	D,J,N	SLOS013
General Purpose		3	30	7	−250	25	0.6	0.3	LM324	D,J,N,W	SLYD001
		±4	±18	6	200	25	1	0.5	LM348	D,J,N	
Single Supply, Norton Amplifier, Bipolar	S/S	4	32		200	1.2	2.5	0.5	LM3900	D,J,N	SLYD001
	D/S	±2	±16								
Low Power, Bipolar	S/S	3	36	10	−500	20	1	0.6	MC3403	D,J,N	SLYD001
	D/S	±1.5	±18								
Quad uA741, High Performance		±4	±18	6	500	20	3	1.7	RC4136	D,J,N,W	SLYD001
General Purpose		±2	±18	5	250	60	0.5	0.5	TL044C	J,N,W	SLYD001
BIFET, Low Power		±1.5	±18	6	0.2	4	1	3.5	TL064AC	D,J,N	SLYD001
			18	3	0.2	4	1	3.5	TL064BC		
				15	0.4	3	1	3.5	TL064C		
BIFET, Low Noise		±3.5	±18	6	0.2	50	3	13	TL074AC	D,J,N	SLYD001
				3	0.2	50	3	13	TL074BC		
				10	0.2	50	3	13	TL074C		
				10	0.2	25	3	13	TL075C	J,N	
BIFET, General Purpose		±3.5	±18	6	0.2	50	3	13	TL084AC	D,J,N	SLYD001
				3	0.2	50	3	13	TL084BC		
				15	0.4	25	3	13	TL084C		
				15	0.4	25	3	13	TL085C	J,N	
High Performance, Bipolar		±4	±18	6	500	20	3	2	TL136C	D,J,N	SLYD001
LinCMOS, High Bias		1	16	5	0.005 Typ	10	2.2	5.3	TLC254AC	D,J,N	SLYD001
				2	0.005 Typ	10	2.2	5.3	TLC254BC		
				10	0.005 Typ	10	2.2	5.3	TLC254C		
		3	16	5	0.005 Typ	10	2.2	5.3	TLC274AC	D,J,N	SLO3001
				2	0.005 Typ	10	2.2	5.3	TLC274BC		
				10	0.005 Typ	10	2.2	5.3	TLC274C		
				0.75	0.005 Typ	10	2.2	5.3	TLC279C	D,J,N	SLO3001
LinCMOS, Low Bias		1	16	5	0.005 Typ	30	0.1	0.05	TLC25L4AC	D,J,N	SLO3002
				2	0.005 Typ	30	0.1	0.05	TLC25L4BC		
				10	0.005 Typ	30	0.1	0.05	TLC25L4C		
LinCMOS, Medium Bias		1	16	5	0.005 Typ	20	0.6	0.6	TLC25M4AC	D,J,N	SLO3003

Internally Compensated, Quad (Continued)

Commercial Temperature Range (Values specified for T_A = 25°C)

DESCRIPTION	SUPPLY VOLTAGE (V)		V_{IO} (mV)	I_{IB} (nA)	A_{VD} (V/mV)	B_1 (MHz)	SR (V/μs)	DEVICE NUMBER	PACKAGES	DOCUMENT
	MIN	MAX	MAX	MAX	MIN	TYP	TYP			
LinCMOS, Medium Bias	1	16	2	0.005 Typ	20	0.6	0.6	TLC25M4BC	D,J,N	SLO3003
			10	0.005 Typ	20	0.6	0.6	TLC25M4C		
LinCMOS, Low Bias	3	16	5	0.005 Typ	30	0.1	0.05	TLC27L4AC	D,J,N	SLO3002
			2	0.005 Typ	30	0.1	0.05	TLC27L4BC		
			10	0.005 Typ	30	0.1	0.05	TLC27L4C		
			0.75	0.005 Typ	30	0.1	0.05	TLC27L9C	D,J,N	SLO3002
LinCMOS, Medium Bias	3	16	5	0.005 Typ	20	0.6	0.6	TLC27M4AC	D,J,N	SLO3003
			2	0.005 Typ	20	0.6	0.6	TLC27M4BC		
			10	0.005 Typ	20	0.6	0.6	TLC27M4C		
			0.75	0.005 Typ	20	0.7	0.06	TLC27M9C		

Differential Video Amplifiers

Commercial Temperature Range (Values specified for T_A = 25°C)

DESCRIPTION	BANDWITH	GAIN	DEVICE NUMBER	PACKAGES	DOCUMENT
Amplifier with 2 multiplexed inputs and wide AGC range	60 Mhz	100 max	MC1445	J,N	SLYD001
Amplifier with internal frequency compensation and adjustable/selectable gain options	90 Mhz	0 to 600	NE592	D,N	SLYD001
Similar to NE592 but with tighter gain distribution	90 Mhz	0 to 600	NE592A	D,N	SLYD001
Amplifier with a wide AGC range	60 Mhz	100	TL026	D,JG,P	SLYD001
2-channel multiplexed Video Amp	20 Mhz	0 to 600	TL040C	D,N	SLFS012
Similar to NE592 but in an 8-Pin package	90 Mhz	0 to 600	TL592	D,P	SLYD001
Similar to NE592A but in an 8-Pin package	90 Mhz	0 to 600	TL592A	D,P	SLYD001
Low-noise version of NE592 and TL592	90 Mhz	0 to 600	TL592B	D,N,P	SLYD001
Amplifier with internal frequency compensation	200 Mhz	10, 100,400	μA733C	J,N	SLYD001
Amplifier with a wide AGC range	50 Mhz	38, 50, 400	TL027C	D,N,J	SLFS008
Logarithmic Amplifier	40 Mhz	Logarithmic Curve	TL441C	J,N	SLAS010

Magnetic-Media Read and Write Circuits

(Values specified for T_A = 25°C)

DESCRIPTION	DEVICE NUMBER	PACKAGES	DOCUMENT
Read-Amplifier System	MC3470	N	SLYD001
Tape-Read Signal Conditioner	TL041C	DW,NT	SLFS015
Disk-Memory Read-Chain Data	TL712	D,P	SLYD001
Disk-Memory Read-Chain Data Comparator with MECL III and MECL 1000	TL721	D.P	SLYD001

Voltage Comparators

Internally Compensated, Single
Automotive Temperature Range

(Values specified at T_A = 25° C)

CHANNEL TYPE	DESCRIPTION	POWER SUPPLIES		V_{IO} MAX (mV)	I_{IB} MAX (μA)	I_{OL} MIN (mA)	RESPONSE TIME TYPE (ns)	TYPE	PACKAGES	DOCUMENT
		$V_{CC}+$ NOM (V)	$V_{CC}-$ NOM (V)							
Dual	Automotive LM393	5	0	7	0.25	6	300	LM2903	D,JG,P	SLYD001
	Ultra Low Power, Push Pull Output	5	0	5	5 pA Typ	4	1300	TLC3702I	D,JG,P	SLNS015
Quad	Ultra Low Power, Open Drain Output	5	0	5	5 pA Typ	6	1100	TLC393I	D,JG,P	SLNS017
	Automotive LM339 Temp.	5	0	7	0.25	6	300	LM2901	D,J,N	SLYD001
	Low Cost LM2901	5	0	20	0.5	6	300	LM3302	D,J,N	SLYD001
	Ultra Low Power, Automotive LP339, Bipolar	5	0	5	.025	20	9800	LP2901	D,J,N	SLCS004
	Open Drain Output	5	0	5	5 pA Typ	6	1100	TLC339I	D,J,N	SLNS018
	Push Pull Output	5	0	5	5 pA Typ	4	1300	TLC3704I	D,J,N	SLNS016

Internally Compensated, Single
Industrial Temperature Range

(Values specified at T_A = 25° C)

CHANNEL TYPE	DESCRIPTION	POWER SUPPLIES		V_{IO} MAX (mV)	I_{IB} MAX (μA)	I_{OL} MIN (mA)	RESPONSE TIME TYPE (ns)	TYPE	PACKAGES	DOCUMENT
		$V_{CC}+$ NOM (V)	$V_{CC}-$ NOM (V)							
Single	Strobe	12	−6	2	45	100	28	LM206	D,J,JG,N,P	SLYD001
		15	−15	3	0.1	8	115	LM211	D,JG,P	SLCS003
	Ultra Low Power, Strobe	15	−15	7.5	0.1	1.6	1200	LP211	D,JG,P	SLCS003
	Single LM339	5	0	5	−0.1	6	300	TL331I	D,JG,P	SLYD001
Dual	Industrial LM393	5	0	5	0.25	6	300	LM293	D,JG,P	SLYD001
	Industrial LM393, Low Offset	5	0	2	0.25	6	300	LM293A	D,JG,P	SLYD001
	Low Offset	2	0	10	5 pA Typ	6	200	TLC372	D,JG,P	SLNS002A
Quad	Industrial LM339	5	0	9	−0.4	6	300	LM239	D,J,N	SLCS004
	Industrial LM339, Low Offset	5	0	4	−0.4	6	300	LM239A	D,J,N	SLCS004
	Ultra Low Power, Industrial LP339, Bipolar	5	0	5	0.025	20	9800	LP239	D,J,N	SLCS004
	High Speed CMOS Low Offset	5	0	10	2	6	200	TLS374	D,J,N	SLNS003A

Internally Compensated, Single
Commercial Temperature Range

(Values specified at T_A = 25° C)

CHANNEL TYPE	DESCRIPTION	POWER SUPPLIES $V_{CC}+$ NOM (V)	POWER SUPPLIES $V_{CC}-$ NOM (V)	V_{IO} MAX (mV)	I_{IB} MAX (μA)	I_{OL} MIN (mA)	RESPONSE TIME TYPE (ns)	TYPE	PACKAGES	DOCUMENT
Single	Strobe	12	−6	5	40	100	28	LM306	D,J,JG,N,P	SLYD001
		15	−15	7.5	0.25	8	115	LM311	D,JG,P	
	Ultra Low Power, Strobe	15	−15	7.5	.1	1.6	1200	LP311	D,JG,P	SLCS003
	Single LM339	5	0	5	−0.25	6	300	TL331C	D,JG,P	SLYD001
	Strobe	12	−6	3.5	20	1.6	30	TL510C	JG,P	SLYD001
	High Speed	12	−6	7.5	100	1.6	40	TL710C	J,JG,N,P,U	SLYD001
	Output Enable	5	0	±100	—	—	25	TL712	JG,P	SLYD001
	High Speed	0	−5.2	±100	—	—	12 Max	TL721	JG,P	SLYD001
	Improved TL710C	12	−6	3.5	20	1.6	30	TL810C	JG,P	SLYD001
	Strobe	+18	−18	1.5	80		150	LT1011C	JG,P,L	SLVS014
				0.5	50		150	LT1011AC	JG,P,L	
Dual	V_{CC}: 2 V to 36 V	5	0	5	0.25	6	300	LM393	D,JG,P	SLYD001
				2	0.25	6	300	LM393A	D,JG,P	
	Strobes	12	−6	5	25	—	28	TL506C	J,N	SLYD001
	Dual TL510C	12	−6	3.5	20	1.6	30	TL514C	J,N	SLYD001
	Improved μA711C	12	−6	5	30	0.5	33	TL811C	J,N	SLYD001
	Dual TL810C	12	−6	3.5	20	1.6	30	TL820C	J,N	SLYD001
	Ultra Low Power, CMOS Push-Pull Output	5	0	5	5 pA Typ	4	1300	TLC3702C	D,JG,P	SLNS015
	High Speed, LinCMOS	5	0	10	5 pA Typ	6	200	TLC372C	D,JG,P	SLYD001
	Ultra Low Power, CMOS Open Drain Output	5	0	5	5 pA Typ	6	1100	TLC393C	D,JG,P	SLNS017
Quad	V_{CC}: 2V to 36V	5	0	5	−0.15	6	300	LM339	D,J,N	SLYD001
				2	−0.15	6	300	LM339A	D,J,N	
	Ultra Low Power, Bipolar	5	0	5	.25	20	1300	LP339	D,J,N	SLCS004
	Ultra Low Power, CMOS Open Drain Output	5	0	5	5 pA Typ	6	1100	TLC339C	D,J,N	SLNS018
	Ultra Low Power, CMOS Push-Pull Output	5	0	5	5 pA Typ	4	1300	TLC3704C	D,J,N	SLNS016
	High Speed, CMOS	5	0	10	5 pA Typ	6	200	TLC374C	D,J,N	SLYD001
	Ultra Low Offset	5	0	10	5 pA Typ	6	200	TLC354C	D,N	SLOS008
				10	5 pA Typ	6	200	TLC352C	D,N	SLOS007

Data Acquisition and Conversion Circuits

Single-Slope and Dual-Slope A/D Converters

CONVERSION FUNCTION	RESOLUTION	SPEED (ms)	TYPE	PACKAGES	DOCUMENT
Dual-Slope Analog Processors	4 1/2 Digits	80	TL500	J	SLYD002
	3 1/2 Digits	80	TL501		
Digital Processors with Seven-Segment Outputs	4 1/2 Digits	80	TL502	N	SLYD002
Digital Processors with BCD Outputs	4 1/2 Digits	80	TL503	N	SLYD002
Dual-Slope Analog Processor	10 Bits	50	TL505	N	SLYD002
Pulse-Width Modulator for Single-Slope Converter	7 Bits	1	TL507	P	SLYD002

Successive-Approximation and Semi-Flash A/D Converters

ADDRESS AND DATA I/O FORMAT	SIGNAL INPUTS		RESOLUTION (BITS)	CONVERSION SPEED (μs)	POWER DISSIPATION (TYP)	UNADJUSTED ERROR (MAX) ±LSB	TYPE	PACKAGES	DOCUMENT
	ANALOG DEDICATED	ANALOG DIGITAL							
Parallel	1	0	8	100	10 mW	0.5	ADC0803	N	SLYD002
						1.0	ADC0804		
						1.0	ADC0805		
	8	0	8	100	10 mW	0.75	ADCO808	FN,N	SLYD002
						1.25	ADC0809	FN,N	
					0.5 mW	0.75	TL0808		
						1.25	TL0809		
	1	0	8	1	35 mW	1.0	TLC0820A	FN,N	SLYD002
						0.5	TLC0820B		
	5	6	8	15	6 mW	0.5	TLC532A	FN,N	SLYD002
				30	6 mW	0.5	TLC533A		
Serial	1	0	8	84	10 mW	1.0	ADC0831A	P	SLYD002
						0.5	ADC0831B		
	2	0	8	84	10 mW	1.0	ADC0832A		
						0.5	ADC0832B		
	4	0	8	84	10 mW	1.0	ADC0834A	N	SLYD002
						0.5	ADC0834B		
	8	0	8	84	10 mW	1.0	ADC0838A	FN,N	SLYD002
						0.5	ADC0838B		
	11	0	8	13	6 mW	0.5	TLC540	FN,N	SLYD002
		0	8	25	6 mW	0.5	TLC541		
	19	0	8	13	6 mW	0.5	TLC545		
		0	8	25	6 mW	0.5	TLC546		
	1	0	8	22	6 mW	0.5	TLC548	D,P	SLYD002
		0	8	25	6 mW	0.5	TLC549		
	11	0	10	31	6 mW	1.0	TLC1541	FN,N	SLYD002

*Includes access time.
Analog/digital inputs can be used either as digital logic inputs or inputs for analog to digital conversion. For example: The TLC532/3A can have 11 analog inputs, 5 analog inputs, and 6 digital inputs, or any combination in between.
†Differential input.

D/A Converters (5 V to 15 V)

FUNCTION	RESOLUTION	SETTLING TIME (ns)	TYPE	PACKAGES	DOCUMENT
Single Multiplying DAC	8 Bits	100	TLC7524	D,N	SLYD002
Dual Multiplying DAC	8 Bits	100	TLC7528	N	SLYD002

Analog Interface for Digital Signal Processors

FUNCTION	TRANSFER CHARACTERISTIC	DYNAMIC RANGE	RESOLUTION	SAMPLING RATE	ON-BOARD FILTERS	PART NUMBER	DOCUMENT
Discrete Interfaces, A/D And D/A	Linear	8 Bits	8 Bits	1 MHz (A/D)	No	TLC0820 (A/D)	SLYD002
				5 MHz (D/A)	No	TLC7524 (D/A)	
Combo (Coder/ Decoder And Filters)	Companding (μ-Law)	12 Bits	8 Bits	8 kHz	Yes	TCM29C18	SCTS021
						TCM29C19	
High-Performance Combo	Linear	14 Bits	14 Bits	19.2 kHz (Programmable)	Yes (Programmable)	TLC32040	SLAS014A

The TLC32040 has two differential inputs for the 14 bit A/D and a serial port input for the 14 bit D/A.
The A/D conversion accuracy for this device is measured in terms of signal-to-quantization distortion and also in LSB over certain converter ranges. Please refer to the data sheet.

Analog Switches and Multiplexers

FUNCTION	POWER SUPPLIES (V)	VOLTAGE RANGE (V)	TYPICAL IMPEDANCE (OHMS)	TYPE	PACKAGES	DOCUMENT
Twin SPDT	±15	±10	100	TL182	N	SLYD002
			150	TL185		
Dual SPST	±15	±10	100	TL188		
Twin Dual SPST	±15	±10	150	TL191		
SPDT	±25	−17 to +25	100	TL601	P	SLYD002
Dual SPDT	±25	−17 to +25	100	TL604		
SPST with Enable	±25	−17 to ±25	100	TL607		
SPST with Logic Inputs	±25	−17 to 25	80	TL610		
Quad Bilateral	12	2 to 12	50	TLC4016	N,D,J	SLYD002
Analog Switch	12	2 to 12	30	TLC4066		

Switched-Capacitor Filter ICs

FUNCTION	FILTER ORDER	SUPPLY VOLTAGE (V)	TYPE	PACKAGES	DOCUMENT
Dual Filter, General Purpose	2	±4 to ±5	TLC10	FN,N	SLYD002
			TLC20		
Low Pass, Butterworth	4	±2.5 to ±6	TLC04	D,P	SLYD002
			TLC14		

POWER SUPPLY CIRCUITS

Power Supply Supervisors

FUNCTION	SENSE INPUT SUPPLY	SENSE INPUT THRESHOLD	THRESHOLD TOLERANCE %	DEVICE NUMBER	PACKAGES	DOCUMENT
Over Voltage Monitor	*	2.6 V Typ	5	MC3423	D,P	SLVS006
Under Voltage Monitor	*	2.53 V Typ	1	TL7702A	D,P	SLYD001
	5 V	4.55 V Typ	1	TL7705A		
	9 V	7.6 V Typ	1	TL7709A		
	12 V	10.8 V Typ	1	TL7712A		
	15 V	13.2 V Typ	1	TL7715A		

*Programmable

Voltage Regulators

Shunt Voltage Regulators/References

REG VOLTAGE RANGE	MINIMUM SHUNT CURRENT TO MAINTAIN REG	MAX SHUNT CURRENT	TOLERANCE	TEMPERATURE COEFFICIENT	DEVICE	PACKAGES	DOCUMENT
2.5 V (typ)	400 μA	20 mA	0.2%	15 PPM/C (Typ)	LT1009	D,LD,LP	SLVS013
2.5 V To 30 V	500 μA (Typ)	150 mA	4%	120 PPM/C (Typ)	TL430	D,LP	SLYD001
2.5 V To 36 V	270 μA (Typ)	150 mA	2%	30 PPM/C (Typ)	TL431	D,LP	SLVS005

Adjustable Series Pass Voltage Regulators

OUTPUT VOLTAGE	OUTPUT CURRENT	OUTPUT VOLTAGE RANGE	REFERENCE TOLERANCE %	MAX (V_I-V_O) DIFFERENTIAL	DEVICE	PACKAGES	DOCUMENT
Positive Output Voltage	100 mA	1.2 V to 32 V	5	35 V	TL317	D,LP	SLVS004
	750 mA	1.25 V to 125 V	5	125 V	TL783	KC	SLYD001
	1.5 A	1.2 V to 37 V	5	40 V	LM317		
Negative Output	1.5 A	−1.2 V to −37 V	4	−40 V	LM337	KC	SLYD001
Positive or Negative	150 mA	2.0 V to 37 V	5	38 V	μA723	N,D	SLYD001

Positive Voltage Regulators

OUTPUT VOLTAGE V	OUTPUT CURRENT RATING	OUTPUT VOLTAGE TOLERANCE %	(TYPICAL DROPOUT) VOLTAGE	TYPE	PACKAGES	DOCUMENT
2.6	100 mA	±10	2 V	μA78L02	LP,D	SLVS010
		±5	2 V	μA78L02A		
5	100 mA	±5	2 V	μA78L05A	LP,D	SLVS010
		±10	2 V	μA78L05		
	150 mA	±10	0.6 V	LM2930-5	KC	SLYD001
		±4	0.6 V	LM330-5		
	500 mA	±5	2 V	μA78M05		
	1.5 A	±4	2 V	LM340-5		
		±1	2 V	TL780-5		
		±4	2 V	μA7805		
6	1.5 A	±4	2 V	μA7806	KC	SLYD001
	500 mA	±5	2 V	μA78M06		
6.2	100 mA	±10	2 V	μA78L06	LP,D	SLVS010
		±5	2 V	μA78L06A		
8	100 mA	±10	2 V	μA78L08	LP,D	SLVS010
		±5	2 V	μA78L08A		
	150 mA	±10	0.6 V	LM2930-8	LP,D	SLYD001
	500 mA	±5	2 V	μA78M08	LP,D	SLVS010
	1.5 A	±4	2 V	μA7808		
8.5	1.5 A	±4	2 V	μA7885	KC	SLYD001
9	100 mA	±10	2 V	μA78L09	LP,D	SLVS010
		±5	2 V	μA78L09A		
10	100 mA	±5	2 V	μA78L10A	LP,D	SLVS010
		±10	2 V	μA78L10		
	500 mA	±5	2 V	μA78M10	KC	SLYD001
	1.5 A	±4	2 V	μA7810		
12	100 mA	±5	2 V	μA78L12A	LP,D	SLVS010
		±10	2 V	μA78L12		
	500 mA	±5	2 V	μA78M12	KC	SLYD001
	1.5 A	±4	2 V	μA7812		
		±4	2 V	LM340-12		
		±1	2 V	TL780-12		
15	100 mA	±5	2 V	μA78L15A	LP,D	SLVS010
		±10	2 V	μA78L15		
	1.5 A	±4	2 V	LM340-15	KC	SLYD001
		±1	2 V	TL780-15		
		±4	2 V	μA7815		
	500 mA	±5	2 V	μA78M15		

Positive Voltage Regulators (Continued)

OUTPUT VOLTAGE V	OUTPUT CURRENT RATING	OUTPUT VOLTAGE TOLERANCE %	(TYPICAL DROPOUT) VOLTAGE	TYPE	PACKAGES	DOCUMENT
18	1.5 A	±4	2 V	μA7818	KC	SLYD001
20	500 mA	±5	2 V	μA78M20	KC	SLYD001
24	500 mA	±5	2 V	μA78M24	KC	SLYD001
	1.5 A	±4	2 V	μA7824		

Negative-Voltage Regulators

OUTPUT VOLTAGE V	OUTPUT CURRENT RATING	OUTPUT VOLTAGE TOLERANCE %	(TYPICAL DROPOUT) VOLTAGE	TYPE	PACKAGES	DOCUMENT
5	100 mA	±5	1.7 V	MC79L05A	D,LP	SLVS011
		±10	1.7 V	MC79L05		
	1.5 A	±5	2 V	μA7905	D,LP	SLYD001
		±5	2 V	μA79M05		
5.2	1.5 A	±5	2 V	μA7952	KC	SLYD001
6	1.5 A	±5	2 V	μA7906	KC	SLYD001
		±5	2 V	μA79M06		
8	1.5 A	±5	2 V	μA79M08	KC	SLYD001
		±5	2 V	μA7908		
12	100 mA	±10	1.7 V	MC79L12	D,LP	SLVS011
		±5	1.7 V	MC79L12A		
	1.5 A	±5	2 V	μA7912		
		±5	2 V	μA79M12	D,LP	SLYD001
15	100 mA	±5	1.7 V	MC79L15A	D,LP	SLVS011
		±10	1.7 V	MC79L15		
	1.5 A	±5	2 V	μA79M15	KC	SLYD001
		±5	2 V	μA7915		
18	1.5 A	±5	2 V	μA7918	KC	SLYD001
20	1.5 A	±5	2 V	μA79M20	KC	SLYD001
24	1.5 A	±5	2 V	μA7924	KC	SLYD001
		±5	2 V	μA79M24		

Switched Capacitor Voltage Converters

CONTROL TOPOLOGY	OUTPUT SWITCH	SUPPLY VOLTAGE RANGE	QUIESCENT CURRENT NO LOAD	MAXIMUM CONTINUOUS I_{OUT}	MAXIMUM FREQUENCY	MINIMUM CONVERSION EFFICIENCY	DEVICE	PACKAGES	DOCUMENT
Voltage Mode	Single	1.5 V-9 V	200 μA	50 mA	10 KHz	95%	LTC1044	JG,L,P	SLAS013
							LTC7660		

PWM Controllers

CONTROL TOPOLOGY	OUTPUT SWITCH	MAX SW VOLTAGE	PEAK MAX CONT I_O	MAX FREQ	ERROR AMPS	I-LIMIT AMPS	REF	OUT STRG	UVLO	OUT CONT	DEVICE	PACKAGE	DOCUMENT
Voltage Mode, Pulse Width Modulated	Single Uncommitted	40 V	250 mA	200 kHz	2	—	5%	—	—	—	MC34060	D,N	SLVS008
	Dual Uncommitted	40 V	100 mA		2	1	5%	—	•	—	SG2524	D,N	SLYD001
								—	—	—	SG3524		
	Dual Uncommitted	40 V	250 mA	300 kHz	1	1	5%	—	—	•	TL493	D,N	SLFS014
					2	—		—	—	•	TL494	D,N	SLYD001
								•	—	•	TL495	N	
							1%	—	•	•	TL594	D,N	
								•	•	•	TL595	N	
		35 V	100 mA	500 Hz	1	—	1%	—	•	—	SG2525A	J,N	SLYD001
								—	•	—	SG3525A		
								—	•	—	SG2527A		
								—	•	—	SG3527A		
Fixed On-Time Variable Frequency Voltage Mode	Dedicated	20 V	1.2 A	40 kHz	1		10%	—	—	—	TL496	P	SLVS012
	Single Uncommitted	35 V	700 mA	50 kHz	1		5%	—	—	—	TL497A	D,N	SLVS009
Current Mode	Single Uncommitted	75 V	5 A	40 kHz	1	1	2%	—	—	—	LT1070	KJ,KV	SLVS015
	Dual Totem Low Off-state	40 V	250 mA	500 kHz	1	1	1%	—	•	—	UC3846	D,N	SLVS016
	Dual Totem High Off-state	40 V	250 mA	500 kHz	1	1	1%	—	•	—	UC3847	D,N	SLVS016

NOTE: Dedicated — Committed E and C.
Uncommitted — Open E, Open C.
Totem Pole — Active Pull-up/Down.
OUT STRG — Output Steering
OUT CONT — Output Control (single-ended or parallel)

Timers

Commercial Temperature Range

(Values specified for T_A = 25°C)

DESCRIPTION	OUTPUT CURRENT	TIMING		DEVICE NUMBER	PACKAGES	DOCUMENT
		FROM	TO			
Single Timer, Bipolar	±200 mA	10 µs	Hours	NE555	D,JG,P	SLYD001
Dual Timer, Bipolar	±200 mA	10 µs	Hours	NE556	D,J,N	SLYD001
Single High-Speed Timer LinCMOS, 1-Volt Operation	100 mA −10 mA	1 µs	Hours	TCL551C	D,JG,P	SLYD001
Dual High-Speed Timer LinCMOS, 1-Volt Operation	100 mA −10 mA	1 µs	Hours	TLC552C	D,J,N	SLYD001
Single High-Speed Timer LinCMOS	100 mA −10 mA	1 µs	Hours	TLC555C	D,JG,P	SLYD001
Dual High-Speed Timer LinCMOS	100 mA −10 mA	1 µs	Hours	TLC556C	D,J,N	SLYD001
Programmable Timer/Counter	4 mA	10 µs	Days	µA2240C	N	SLYD001

Automotive Temperature Range

(Values specified for T_A = 25°C)

DESCRIPTION	OUTPUT CURRENT	TIMING		DEVICE NUMBER	PACKAGES	DOCUMENT
		FROM	TO			
Single Timer, Bipolar	±200 mA	10 µs	Hours	SA555	D,JG,P	SLYD001
Dual Timer, Bipolar	±200 mA	10 µs	Hours	SA556	D,J,N	SLYD001
Single High-Speed Timer LinCMOS	100 mA −10 mA	1 µs	Hours	TLC555I	D,JG,P	SLYD001
Dual High-Speed Timer LinCMOS	100 mA −10 mA	1 µs	Hours	TLC556I	D,J,N	SLYD001

Current Mirrors

(Values specified for T_A = 25°C)

DESCRIPTION	TEMPERATURE RANGE	CURRENT RATIO INPUT TO OUPUT	INPUT CURRENT RANGE	DEVICE NUMBER	PACKAGES	DOCUMENT
Programmable	0°C to 70°C	3:1 to 1:15	Variable	TL010C	P	SLYD001
	−40°C to 85°C	3:1 to 1:15	Variable	TL010I		
Fixed	0°C to 70°C	1:1	1 µA to 1 mA	TL011C	LP	SLYD001
	−40°C to 85°C	1:1	1 µA to 1 mA	TL011I		
	0°C to 70°C	1:2	1 µA to 1 mA	TL012C		
	−40°C to 85°C	1:2	1 µA to 1 mA	TL012I		
	0°C to 70°C	1:4	1 µA to 1 mA	TL014C		
	−40°C to 85°C	1:4	1 µA to 1 mA	TL014I		
	0°C to 70°C	1:2	2 µA to 2 mA	TL021C		
	−40°C to 85°C	1:2	2 µA to 2 mA	TL021I		

Hall-Effect Products

Hall-Effect Switches

(Values specified for T_A = 25°C)

RELEASE POINT (GAUSS) MIN	OPERATING POINT (GAUSS) MAX	MINIMUM HYSTERESIS (GAUSS)	DEVICE NUMBER	PACKAGES	DOCUMENT
−250	250	50	TL170	LP	SLYD001
100	600	230	TL172	LP	SLYD001
25	450	30	TL3013	LU	SLFS004
125	500	50	TL3019	LU	SLFS005
50	350	20	TL3020	LU	SLFS006
−250	250	50	TL3101	LU	SLFS002

Hall-Effect Linear Circuits

(Values specified for T_A = 25°C)

RELEASE POINT (GAUSS) MIN	OPERATING POINT (GAUSS) MAX	MINIMUM HYSTERESIS (GAUSS)	DEVICE NUMBER	PACKAGES	DOCUMENT
−500	500	1.4	TL173	LP	SLYD001
−500	500	1.4	TL3103	LU	SLFS003

Frequency-to-Voltage Converters

DESCRIPTION	DEVICE	PACKAGES	DOCUMENT
• Output swings to ground for zero-frequency input • Only one RC network provides frequency doubling for low ripple • 8-pin versions interface directly to variable-reluctance magnetic pickups	LM2917 LM2907	D, P, N	SLFS011

Sonar Ranging Functions

(Values specified for T_A = 25°C)

DESCRIPTION		DEVICE NUMBER	PACKAGES	DOCUMENT
Sonar Ranging Module	Sonar ranging module for measuring distances from a range of 6 inches to 35 feet using the TL851 and TL852	SN28827	—	SLYD001
	Sonar ranging module for measuring distances from a range of 6 inches to 35 feet using the TL852 and TL853	SN28828	—	SLSS001
Controller Circuit	Control integrated circuit for use in a sonar ranging module, capable of driving 50-kHz transducers with a simple interface	TL851	N	SLYD001
Receiver Circuit	Receiver integrated circuit for use in a sonar ranging module	TL852	N	SLYD001
Control Circuit	Control integrated circuit for use in a sonar ranging module, capable of driving 40-kHz transducers with a simple interface	TL853	N	SLSS002

Programmable Tone/Noise Generator

DESCRIPTION	DEVICE	PACKAGES	DOCUMENT
• Complex sound generators designed to provide low-cost digital tones or noise. • Programmable white-noise and attenuation functions, and simultaneous sounds under microprocessor control. • TTL compatible.	SN76494	N	SLFS013
	SN76496		

OPTOELECTRONICS AND IMAGE SENSORS

INTRODUCTION

TI offers three major categories of Optoelectronic and Image Sensor devices:

- CCD Image Sensors
- Optocouplers/ Optoisolators
- Intelligent LED Displays.

NMOS image sensors are available for line sensors, small-area sensors and large-area sensors. Solid-state image sensors offer many advantages over tube-type imagers such as Vidicons and Newicons by eliminating image lag, image burn-in, and distortation. TI's patented virtual phase technology minimizes the number of clock electrodes required by the image sensor, resulting in simpler external circuitry requirements and improved device performance.

The optocoupler/optoisolator devices are offered in metal-can and plastic dual-in-line packages. JEDEC-registered metal cans provide transistor output functions. All TI's optocouplers are UL-recognized and provide functions such as logic gates, triac, and transistor or Darlington outputs.

The red LED displays are plastic-encapsulated in dual-in-line packages that contain TTL-compatible on-board electronics to decode input signals and provide constant current to each LED.

Also included in the Selection Guide are infrared emitters and phototransistors in the hermetically sealed standard pill package.

Readers should refer to the Catalog Products Alphanumeric Index in Section 1, and to Section 12 of the Master Selection Guide for additional information on technical documentation.

Contents **Page**

CCD Image sensors and Support Functions 8-2
Linear Arrays 8-2
Area Arrays 8-2
Evaluation Boards 8-2
Evaluation Kits 8-2
Recommended Support Functions for TC240 and TC241 CCD Area Array Sensors 8-3
Optocouplers 8-4
Optocouplers, 6-Pin Plastic DIP and Metal Can 8-4
Optocouplers, 8-Pin Plastic DIP High-Speed, Logic Gate, JEDEC Registered 8-5
Optocouplers, 8-Pin Plastic DIP, High-Speed, JEDEC Registered 8-6
Optocouplers, 8-Pin Plastic DIP, High-Speed, High-Gain, JEDEC Registered 8-6
Couplers, 6-Pin Plastic DIP, Triac Drivers 8-6
Couplers, 6-Pin Plastic DIP, Schmitt Trigger 8-6
Intelligent Single-Digit LED Displays 8-7
Infrared Emitters and Phototransistors 8-7
Ordering Instructions 8-8

CCD IMAGE SENSORS AND SUPPORT FUNCTIONS

Linear Arrays

DEVICE	PIXELS	PIXEL SIZE	SENSITIVITY	PACKAGE	DOCUMENT
TC102†	128 × 1	12.7 μm × 12.7 μm	3.5 V/μJ/cm²	10-pin CDIP (0.300 in)	SOYD002
TC102-1‡	128 × 1	12.7 μm × 12.7 μm	3.5 V/μJ/cm²	10-pin CDIP (0.300 in)	SOYD002
TC103†	2048 × 1	12.7 μm × 12.7 μm	3.5 V/μJ/cm²	24-pin CDIP (0.600 in)	SOYD002
TC103-1‡	2048 × 1	12.7 μm × 12.7 μm	3.5 V/μJ/cm²	24-pin CDIP (0.600 in)	SOYD002
TC104†	3456 × 1	10.7 μm × 10.7 μm	2.0 V/μJ/cm²	24-pin CDIP (0.600 in)	SOYD002
TC104-1‡	3456 × 1	10.7 μm × 10.7 μm	2.0 V/μJ/cm²	24-pin CDIP (0.600 in)	SOYD002
TC106-1‡	2592 × 1	10.7 μm × 10.7 μm	2.0 V/μJ/cm²	24-pin CDIP (0.600 in)	SOYD002

†Minimum and typical values of Write Reference (WR) and End of Scan (EOS) are specified.
‡Typical values of WR and EOS are specified.

Area Arrays

DEVICE	PIXELS	PIXEL SIZE	SENSITIVITY§	PACKAGE	DOCUMENT
TC210	192 (H) × 165 (V)	13.75 μm × 16.0 μm	30.0 mV/lx	6-pin 5mm O.D. Plastic	SOYD002
TC211	192 (H) × 165 (V)	13.75 μm × 16.0 μm	28.0 mV/lx	6-pin CDIP (0.300 in)	SOYD002
TC240	754 (H) × 488 (V)	11.5 μm × 27.0 μm	See Data Sheet	22-pin CDIP (0.300 in)	SOYD002
TC241	754 (H) × 488 (V)	11.5 μm × 27.0 μm	19.0 mV/lx	22-pin CDIP (0.300 in)	SOYD002

§Measured at 16.6 ms exposure time using 550 ± 5 nm filter.

Evaluation Boards

PART NO.	DEVICE EVALUATED	REMARKS	DOCUMENT
PC401	TC103, TC103-1, TC104, TC104-1 and TC106-1	Device socket fits TC103, TC103-1, TC104, TC104-1, and TC106-1 (See TCK Evaluation Kits below)	SOYD002
PC402	TC102 and TC102-1	Device socket fits TC102 and TC102-1 (See TCK102 below)	SOYD002

Evaluation Kits

PART NO.	CONTENTS	REMARKS	DOCUMENT
TCK102	TC102 plus PC402	See Application section "Operating Instructions for Linear CCD Image Sensors"	SOYD002
TCK103	TC103 plus PC401	See Application section "Operating Instructions for Linear CCD Image Sensors"	SOYD002
TCK104	TC104 and PC401	See Application section "Operating Instructions for Linear CCD Image Sensors"	SOYD002
TCK106-1	TC106-1 plus PC401	See Application section "Operating Instructions for Linear CCD Image Sensors"	SOYD002

Recommended Support Functions for TC240 and TC241 CCD Area Array Sensors

DEVICE	DESCRIPTION	SUPPLY VOLTAGE, V_{DD}		SUPPLY VOLTAGE, V_{GG}		SUPPLY VOLTAGE, V_{SS}		FEATURES	DOCUMENT
		MIN(V)	MAX(V)	MIN(V)	MAX(V)	MIN(V)	MAX(V)		
TL1593	Sample and hold	10	13	—	—	—	—	Acquisition time 50 ns typical	SOYD002
TMS3471	Timing generator	4.5	5.5	—	—	—	—	NTSC or RS170 television system compatible	SOYD002
TMS3472	Serial driver	—	—	0	2.5	−9	−10.5	NTSC, TS170, or PAL television system compatible	SOYD002
TMS3473	Parallel driver	—	—	0	3	−9	−10.5	NTSC, RS170, or PAL television system compatible	SOYD002

Caution. These devices have limited built-in gate protection. The leads should be shorted together or the device placed in conductive foam during storage or handling to prevent electrostatic damage to the MOS gates. Avoid shorting either OS or EOS to V_{SS} during operation to prevent damage to the amplifiers.

Optocouplers, 6-Pin Plastic DIP and Metal Can

DEVICE	ISOLATION VOLTAGE (kV) f = 60 Hz		MINIMUM CTR (%)	FEATURES	DOCUMENT
	PEAK	RMS			
3N261	1.0	—	50	JEDEC, Metal Can	SOYD002
3N262	1.0	—	100 (500 max)		
3N263	1.0	—	200 (1000 max)		
4N22A†	1.0	—	25	JEDEC, Metal Can	SOOS013
4N23A†	1.0	—	60		
4N24A†	1.0	—	100		
4N25‡	2.5	—	20	JEDEC, Plastic DIP, UL File E-65085	SOYD002
4N26	1.5	—	20		
4N27	1.5	—	10		
4N28	0.5	—	10		
4N35‡	3.54	2.5	100	JEDEC, Plastic DIP, UL File E-65085	SOYD002
4N36	2.5	1.75	100		
4N37	1.5	1.05	100		
4N47§	1.0	—	50	JEDEC, Metal Can	SOYD002
4N48§	1.0	—	100 (500 max)		
4N49§	1.0	—	200 (1000 max)		
MCT2	1.5	—	20	Plastic DIP, UL File E-65085	SOYD002
MCT2E	3.54	2.5	20		
TIL102	1.0	—	25	Metal Can	SOYD002
TIL103	1.0	—	100		
TIL111	1.5	—	13	Plastic DIP, UL File E-65085	SOYD002
TIL112	1.5	—	2		
TIL113	1.5	—	300		
TIL114	2.5	—	13		
TIL115	2.5	—	2		
TIL116	2.5	—	20		
TIL117	2.5	—	50		
TIL118	1.5	—	10		
TIL119‡	1.5	—	300		
TIL119A	1.5	—	300	The "A" version has no base connection.	
TIL120	1.0	—	25	Metal Can	SOYD002
TIL121	1.0	—	50		
TIL124	5.0	—	10	High Voltage, Plastic DIP, UL File E-65085	SOYD002
TIL125	5.0	—	20		
TIL 126	5.0	—	50		

†JAN, JANTX, JANTXV levels to MIL-S-19500/486A USAF are also available.
‡Available in PEP3 processing also.
§JAN, JANTX, JANTXV levels to MIL-S-19500/548 are also available.

Optocouplers, 6-Pin Plastic DIP and Metal Can (Continued)

DEVICE	ISOLATION VOLTAGE (kV) f = 60 Hz		MINIMUM CTR (%)	FEATURES	DOCUMENT
	PEAK	RMS			
TIL127 TIL128 TIL128A	5.0 5.0 5.0	— — —	300 300 300	High-voltage Darlington, Plastic DIP, UL File E-65085 The "A" version has no base connection.	SOYD002
TIL153 TIL154 TIL155	3.54 3.54 3.54	2.5 2.5 2.5	10 20 50	High voltage, Plastic DIP, UL File E-65085	SOYD002
TIL156 TIL157 TIL157A	3.54 3.54 3.54	2.5 2.5 2.5	300 300 300	High-voltage Darlington, Plastic DIP, UL File E-65085 The "A" version has no base connection.	SOYD002
TIL181	3.54	2.5	50	Plastic DIP, UL File E-65085	SOYD002
TIL186	3.54	2.5	100 (I_f = 10mA)	AC input Darlington, Plastic DIP, UL File E-65085	SOYD002
TIL187	3.54	2.5	500	AC input Darlington, Plastic DIP, UL File E-65085	SOYD002
TIL188	3.54	2.5	500	Same as TIL187 except TIL188 has no base lead connection for high-EMI environment. UL File E-65085.	SOYD002
TIL189	3.54	2.5	500	High Voltage, Plastic DIP, UL File E-65085	SOYD002
TIL190	3.54	2.5	500	Same as TIL189 except TIL190 has no base lead connection for high-EMI environment. UL File E-65085.	SOYD002

Optocouplers, 8-Pin Plastic DIP, High-Speed, Logic Gate, JEDEC Registered

(T_A = 25°C unless otherwise noted)

DEVICE	CTR (MIN) V_O = 0.4 V, I_F = 16 mA	V_{OL} (MAX) I_F = 16 mA, T_A = 0°C to 70°C	V_F (MAX) I_F = 16 mA	SWITCHING TIMES (MAX) I_F = 16 mA	ISOLATION VOLTAGE (MIN)	DOCUMENT
				t_{PLH} OR t_{PHL}		
6N135	7%	0.4 V (I_O = 1.1 mA)	1.7 V	1.5 µs (R_L = 4.1 kΩ)	3 kV dc	SOYD002
6N136	19%	0.4 V (I_O = 2.4 mA)	1.7 V	0.8 µs (R_L = 1.9 kΩ)	3 kV dc	SOYD002
HCPL2502	15%	0.4 V (I_O = 2.4 mA)	1.7 V	0.8 µs (R_L = 1.9 kΩ)	3 kV dc	SOYD002

Optocouplers, 8-Pin Plastic DIP, High-Speed, JEDEC Registered

(T_A = 25°C unless otherwise noted)

DEVICE	V_{OL} (MAX) I_F = 5 mA, I_{OL} = 13 mA T_A = 0°C to 70°C	V_F (MAX) I_F = 10 mA	SWITCHING TIMES (MAX) I_F = 7.5 mA, R_L = 350 Ω, CL = 15 pF		ISOLATION VOLTAGE (MIN)	DOCUMENT
			t_{PLH}	t_{PHL}		
6N137	0.6 V	1.75 V	75 ns	75 ns	3 kV dc	SOYD002
HCPL2601	0.6 V	1.75 V	75 ns	75 ns	3 kV dc	SOYD002
HCPL2630 (Dual-Channel)	0.6 V	1.75 V	75 ns	75 ns	3 kV dc	SOYD002

Optocouplers, 8-Pin Plastic DIP, High-Speed, High-Gain, JEDEC Registered (T_A = 25°C unless otherwise noted)

DEVICE	CTR (MIN) V_O = 0.4 V, I_F = 1.6 mA, T_A = 0°C to 70°C	V_{OL} (MAX) I_F = 1.6 mA, T_A = 0°C to 70°C	V_F (MAX) I_F = 1.6 mA	SWITCHING TIMES (MAX) I_F = 1.6 mA		ISOLATION VOLTAGE (MIN)	DOCUMENT
				t_{PLH}	t_{PHL}		
6N138	300%	0.4 V (I_O = 4.8 mA)	1.7 V	35 µs, R_L = 2.2 kΩ	10 µs, R_L = 2.2 kΩ	3 kV dc	SOYD002
6N139	500%	0.4 V (L_O = 6.4 mA)	1.7 V	60 µs, R_L = 4.7 kΩ	25 µs, R_L = 4.7 kΩ	3 kV dc	SOYD002

Couplers, 6-Pin Plastic DIP, Triac Drivers (T_A = 25°C unless otherwise noted)

DEVICE	I_{FT} (MAX) V_{TM} = 3 V	V_F (MAX) I_F = 10 mA	V_{TM} (MAX) I_{TM} = 100 mA	I_{DRM} (MAX) RATED V_{DRM}	dv/dt (TYP)	ISOLATION VOLTAGE (MIN)	DOCUMENT
MOC3009	30 mA	1.5 V	3 V	100 nA	12 V/µs	7.5 kV dc	SOYD002
MOC3010	15 mA	1.5 V	3 V	100 nA	12 V/µs	7.5 kV dc	
MOC3011	10 mA	1.5 V	3 V	100 nA	12 V/µs	7.5 kV dc	
MOC3012	5 mA	1.5 V	3 V	100 nA	12 V/µs	7.5 kV dc	
MOC3020	30 mA	1.5 V	3 V	100 nA	100 V/µs	7.5 kV dc	SOYD002
MOC3021	15 mA	1.5 V	3 V	100 nA	100 V/µs	7.5 kV dc	
MOC3022	10 mA	1.5 V	3 V	100 nA	100 V/µs	7.5 kV dc	
MOC3023	5 mA	1.5 V	3 V	100 nA	100 V/µs	7.5 kV dc	

Couplers, 6-Pin Plastic DIP, Schmitt Trigger

(T_A = 25°C unless otherwise noted)

DEVICE	LOGIC FUNCTION	OUTPUT CONFIGURATION	I_{FT+} (MAX)	HYSTERESIS RATIO (TYP)	SWITCHING TIMES (MAX)		ISOLATION VOLTAGE (MIN)	DOCUMENT
					t_r OR t_f	t_{PLH} OR t_{PHL}		
OPI8012	Buffer	Totem pole	10 mA	1.4	70 ns	5 µs	3.54 kV dc	SOYD002
OPI8013	Buffer	Open collector	10 mA	1.4	70 ns	5 µs	3.54 kV dc	SOYD002
OPI8014	Inverter	Totem pole	10 mA	1.4	70 ns	5 µs	3.54 kV dc	SOYD002
OPI8015	Inverter	Open collector	10 mA	1.4	70 ns	5 µs	3.54 kV dc	SOYD002

INTELLIGENT SINGLE-DIGIT LED DISPLAYS

DEVICE	TYPE OF CHARACTER(S)	CHARACTER HEIGHT mm (inches)	COLOR OF DISPLAY	PACKAGE	REMARKS	DOCUMENT
TIL302 TIL302A TIL303 TIL303A	7-segment	6,9 (0.270)	Red	14-lead dual-in-line plastic	Left decimal Left decimal Right decimal Right decimal	SOYD002
TIL304 TIL304A	Polarity and overflow unit	6,9 (0.270)	Red	14-lead dual-in-line plastic	Right decimal Right decimal	SOYD002
TIL305	5 × 7 alphanumeric	7,6 (0.300)	Red	14-lead dual-in-line plastic	Left decimal Left decimal	SOYD002
TIL306 TIL306A TIL307 TIL307A TIL308 TIL308A TIL309 TIL309A	7-segment	6,9 (0.270)	Red	16-lead dual-in-line plastic	Left decimal Left decimal Right decimal Right decimal Left decimal Left decimal Right decimal Right decimal	SOYD002
TIL311 TIL311A	Hexadecimal	7,6 (0,300)	Red	14-lead dual-in-line plastic	Logic includes latch, decoder, and driver. TL311 and TL311A — left and right decimals	SOYD002

INFRARED EMITTERS AND PHOTOTRANSISTORS

Infrared-Emitting Diodes

DEVICE	POWER OUTPUT		ϕHI	V_F (MAX) I_F = 50 mA	λp (TYP) (nm)	FEATURES	DOCUMENT
	P_O (MIN) (mW)	I_F (mA)					
TIL23	0.4	50	35°	1.5 V	940	Pill package for mounting on double-sided printed circuit boards. Compatible with TIL601 Series.	SOYD002
TIL24	1.0	50	35°	1.5 V	940		
TIL25	0.75	50	35°	1.5 V	940		
TIL24HR2	1.0	50	35°	1.5 V	940		

Phototransistors

DEVICE	LIGHT CURRENT V_{CE} = 5 V		DARK CURRENT (MAX) V_{CE} = 30 V	POWER DISSIPATION	FEATURES	DOCUMENT
	MIN	MAX				
1N5722	0.5 mA	3 mA	25 nA	50 mW	EIA-registered versions of TIL601 thru TIL604	SOYD002
1N5723	2 mA	5 mA	25 nA	50 mW		
1N5724	4 mA	8 mA	25 nA	50 mW		
1N5725	7 mA		25 nA	50 mW		
LS600	0.8 mA		25 nA	50 mW	Pill package designed for mounting on double-sided printed board. Compatible with TIL23 series.	SOYD002
TIL601	0.5 mA	3 mA	25 nA	50 mW		
TIL602	2 mA	5 mA	25 nA	50 mW		
TIL603	4 mA	8 mA	25 nA	50 mW		
TIL604	7 mA		25 nA	50 mW		
TIL604HR2	7 mA		25 nA	50 mW		

Factory orders for devices described in this guide should include a two-part or three-part number as explained in the following example.

EXAMPLE: **TIL** **604** **HR2**

1. Prefix

MUST CONTAIN TWO OR SIX LETTERS

TIL	TI DISD Opto Products
TC	TI CCD Image Sensor Products
TCK	TI CCD Printed Circuit Board Kits
JAN, JANTX, JANTXV	Military Qualified Products
LS	Light Sensor Products
1N, 3N, 4N, 6N	JEDEC Registered Products

STANDARD SECOND-SOURCE PREFIXES

HCPL	Hewlett Packard
MCT	General Instruments
MOC	Motorola
OPI	TRW Optron

2. Package

MUST CONTAIN TWO OR SIX CHARACTERS

Package Type	Prefix
P-DIP	TIL (100 Series) 4N Series (4N25-28, 4N35-37) HCPL, MCT, MOC, OPI
C-DIP	TC (CCD) TIL (300 Series, excluding TIL305)
PILL PACK	TIL23, TIL24, TIL24HR2 TIL601-604, TIL604HR2 LS600
HERMETIC	3N, 4N Series (4N22-24/22A-24A, 4N47-49) JAN, JANTX, JANTXV TIL102, TIL103
PCB	TIL305 CCD KITS (TCK)

3. Unique Device Designator

MUST CONTAIN ONE TO SIX CHARACTERS

Examples: 103, 106-1, 22A, 119A, 5725

4. Military Qualified

(If not already specified by Prefix)

Type	MIL-STD
JAN JANTX JANTXV	19500/486A or 19500/548
HR2	750

Circuits are shipped in one of the carriers below. Unless a specific method of shipment is specified by the customer (with possible additional costs), circuits will be shipped on the most practical carrier.

Plug-In (Hermetic)
— Sectional Cardboard Box

Dual-In-Line (P-Dip, C-Dip, PCB)
— Anti-static Slide Magazines

CCD
— Conductive Boxes

Pill Pak
— Anti-static Bags

TELECOMMUNICATIONS AND SPEECH PRODUCTS

Semiconductor technology provides powerful new capability to telecommunications in the form of large scale integration (LSI) and very large-scale integration (VLSI) integrated circuits. Today it is possible to put an entire u-law or a-law CODEC with a filter on a single chip to replace 50 general-purpose ICs. TI engineers can select from a broad line of technologies, including BIDFET, BIFET, CMOS, NMOS and conventional bipolar and linear to satisfy the requirements of specific applications.

Since 1978, Texas Instruments has produced a wide range of speech-generating devices based on the technique of pitch-excited linear predictive coding (LPC). This technique extracts data from original, recorded speech to define the control parameters for a mathematical model of the vocal tract and glottal excitation. The model is implemented as a customized digital signal processor which produces a series of digital samples representative of the acoustical waveform.

As a result, the speech generated retains all the inflection and voice characteristics of the original spoken phrase and does not possess the robotic quality often associated with synthesis-by-rule systems.

In addition to the LPC synthesis functions, a complete voice output system must contain a storage area for the compressed model data, and a control function to select the words or phrases to be spoken. As with all sampled data systems, a low-pass smoothing filter is required to remove spectral data above the valid bandwidth limit (one-half of the sampling frequency.)

Readers should refer to the Catalog Products Alphanumeric Index in Section 1, and to Section 12 of the Master Selection Guide for additional information on technical documentation.

Contents **Page**

Telecommunications Circuits 9-2
Switching and Transmission Products 9-2
Codecs, Filters, Combos 9-3
FSK Modems 9-4
Subscriber Line Control Circuits (SLCC) 9-5
Subscriber Products 9-5
Speech Products 9-6
Speech Synthesizers 9-6
Ordering Instructions 9-7

Switching and Transmission Products

DESCRIPTION	FUNCTION	TECH-NOLOGY	SUPPLY VOLTAGE	PRODUCT FEATURES	TYPE	PACKAGE	DOCUMENT
AMI/HDB3 Transmission	Encoder/ Decoder	NMOS	5 V	• AMI or HDB3 encoding • Received signal diagnostics • Zero to 3 MHz bit rate • CPU interface	TCM2202	28-Pin J	SCTD001
				• AMI or HDB3 encoding • Received signal diagnostics • Zero to 3 MHz bit rate	TCM2222	16-Pin J	
	Equipment Line-Interface	Bipolar	5 V	• Serial bipolar data rates up to 3 MHz • Low-Q clock extraction • Two Albo taps with 42 dB range • Phase adjust for recovered clock • Direct interface with TCM2202/2222	TCM2203	28-Pin J	SCTD001

Codecs,Filters,Combos

DESCRIPTION	FUNCTION	TECH-NOLOGY	SUPPLY VOLTAGE	PRODUCT FEATURES	TYPE	PACKAGE	DOCUMENT
PCM Interface	CODEC	NMOS	12 V, ±5 V	• Provides μ-Law companding • Compatible with CCITT recommendations G.711 and G.712 • Optional programmable time-slot selection	TCM2909	22-Pin J, N	SCTD001
				• Compatible with CCITT recommendations G.711 and G.712 • μ-255-Law encoding and • 8th-bit signaling • Optional programmable time-slot selection	TCM2910A	24-Pin J, N	
	Line Filter	NMOS	±5 V	• High-pass transmit filter for • rejection of all low-frequency noise • 6th-order low-pass transmit filter • CCITT G.172 compatible • AT&T D3/D4 compatible	TCM2912B	20-Pin J	SCTD001
				• High-pass transmit filter for rejection of all low-frequency noise • 6th-order low-pass transmit filter • CCITT G.172 compatible • AT&T D3/D4 compatible • Three-state PWRO+ and PWRO-outputs	TCM2912C		
	Combo	NMOS	±5 V	• Synchronous, μ-Law, A-Law coding • Variable data rate • Fixed data rate 1.536 MHz, 1.544 MHz, 2.048 MHz	TCM2913	20-Pin J	SCTD001
				• Synchronous/asynchronous • μ-Law, A-Law coding, 8th-bit signaling • Variable data rate • Fixed data rate 1.536 MHz, 1.544 MHz, 2.048 MHz	TCM2914	24-Pin J 28-Pin FN	
				• Synchronous, μ-Law, variable data rate • Fixed data rate 2.048 MHz	TCM2916	16-Pin J	
				• Synchronous, A-Law, variable data rate • Fixed data rate 2.048 MHz	TCM2917		

Codecs,Filters,Combos (Continued)

DESCRIPTION	FUNCTION	TECH-NOLOGY	SUPPLY VOLTAGE	PRODUCT FEATURES	TYPE	PACKAGE	DOCUMENT
PCM Interface	Combo	CMOS	±5 V	• Synchronous, μ-Law, A-Law coding • Variable data rate • Fixed data rate 1.536 MHz, • 1.544 MHz, 2.048 MHz	TCM29C13	20-Pin J,DW	SCTD001
				• Synchronous/asynchronous • μ-Law, A-Law coding, 8th-bit signaling • Variable data rate • Fixed data rate 1.536 MHz, • 1.544 MHz, 2.048 MHz	TCM29C14	24-Pin J,DW 28-Pin FN	
				• Synchronous, μ-Law, variable data rate • Fixed data rate 2.048 MHz	TCM29C16	16-Pin J	
				• Synchronous, A-Law, variable data rate • Fixed data rate 2.048 MHz	TCM29C17		
				• Analog interface for DSP • Variable Data rate • 2.048 MHz • μ-Law coding	TCM29C18	16-Pin N	SCTS021
				• Analog Interface for DSP • Variable data rate • 1.536 MHz • μ-Law Coding	TCM29C19	16-Pin N	SCTS021

FSK Modem/UART

DESCRIPTION	FUNCTION	TECH-NOLOGY	SUPPLY VOLTAGE	PRODUCT FEATURES	TYPE	PACKAGE	DOCUMENT
Modem	Bell 202/CCITT V.23	CMOS	5 V	• Asynchronous • Half-duplex operation up to 1200 baud • Full-duplex operation 1200/150 baud, reversible	TCM3105	16-Pin J	SCTD001
Converter/ Controller	Octal Receiver/ Transmitter	NMOS	5 V	• Programmable baud rates: 50 to 19,200	TCM78808	68-Pin FN, HA, HB	SCTS022

Subscriber Line Control Circuits (SLCC)

DESCRIPTION	FUNCTION	TECH-NOLOGY	SUPPLY VOLTAGE	PRODUCT FEATURES	TYPE	PACKAGE	DOCUMENT
Subscriber Line Control Circuits	TTL-compatible	CMOS	±5 V	• Three selectable balance TCM4204A networks	TCM4204A	24-Pin J	SCTD001
				• Three selectable balance networks • Three auxillary relay outputs • Ground-start operation	TCM4205A	28-Pin J	
				• Flux-canceling option • Two selectable balance networks	TCM4207A	24-Pin J	
	Quad DC-to-DC Converter	CMOS	±5 V	• High switching frequency: 256 kHz typ	TCM4208	20-Pin J	SCTD001
	Quad Telephone Relay Driver	Bipolar	5V, −60V	• 50-mA output current capability	DS3680	14-Pin D, J, N	SCTD001

Subscriber Products

DESCRIPTION	FUNCTION	TECH-NOLOGY	SUPPLY VOLTAGE	PRODUCT FEATURES	TYPE	PACKAGE	DOCUMENT
Ringers	Telephone Tone Ringer Drivers	BIDFET	40-150 Vac	• Output center frequency (Hz): 2000	TCM1531	8-Pin P	SCTD001
					TCM1501B		SCTS020
				• Output Center Frequency (Hz): 1250	TCM1532	8-Pin P	SCTD001
					TCM1512B		
				• Output Center Frequency (Hz): 500	TCM1536		
					TCM1506B		
					TCM1539		
Ring Detector	TTL/MOS Output	BIDFIT	40-150 Vac	• TTL/MOS output, transient protection	TCM1520A		SCTD001
Tone Encoder	DTMF Standard	CMOS	3.5-10 V	• SPST/DPST keyboard or electronic input • Low impedance tone output	TCM5087	16-Pin N	SCTD001
				• Transmitter switch and mute output • DPST keyboard or electronic input • Keyboard active output	TCM5089		
Optocoupler	TTL-Compatible	Bipolar	12 V	• Peak high-voltage isolation: 3.54 kV	TIL181	6-Pin CP-7	SCTD001

Speech Synthesis Circuits

CATEGORY	DESCRIPTION	PROCESS	LPC	MEMORY	SUPPLY VOLTAGE	MASK CHARGE	DEVICE NUMBER	PACKAGE	DOCUMENT
Synthesizer, Microprocessor, and Memory	28-pin speech and control system with 64K-bit ROM and 128-byte RAM memory with 2.5 8-bit interface ports	CMOS	10	64K bytes	4-6 V	Yes	TSP50C40A	N	SPSS007
Synthesizer	LPC-10 voice synthesizer with 4-bit control bus	PMOS	10	NA	9 V	No	TSP5110A	N	SPSS009
	LPC-10 voice synthesizer with 8-bit control bus	PMOS	10	NA	9 V	No	TSP5220C		
	LPC-12 high-quality voice synthesizer with 6-pole low-pass filter	CMOS	12	NA	4-6 V	No	TSP50C50	J,N	SLYD002
Memory Serial Output ROM	128-bit ROM for use with the TSP5110A and TSP5220C	PMOS	NA	128K bytes	9 V	Yes	TSP6100	N	SPSS008
	256-bit ROM for use with the TSP50C4X series and TSP50C50	CMOS	NA	256K bytes	4-6 V	Yes	TSP60C20	N	SLYD002

Factory orders for circuits described in this guide should include a four-part type number as explained in the following example.

EXAMPLE: TL 062M JG /883B

1. Prefix

MUST CONTAIN TWO OR THREE LETTERS

- TL ..... TI Linear Products (excluding Interface)
- TLC ..... TI Linear Silicon-Gate CMOS Products
- SN ..... TI Special Function or Interface Products
- TCM ..... TI Telecommunication Products
- TSP ..... Speech Products
- TISP ..... Transient Suppressors

STANDARD SECOND-SOURCE PREFIXES

ADC	Analog Devices	OP	PMI
LM	National	RC, RM or RV	Raytheon
MC	Motorola	SG	Silicon General
NE, SA, or SE	Signetics	uA	Fairchild
AM	ADM	UDN	Sprague
DS	National	ULN	Sprague

2. Unique Circuit Designator Including Temperature Range (If not already specified by the prefix)

MUST CONTAIN THREE TO SEVEN CHARACTERS
(From Individual Data Sheets)

Examples: 062M, 5941, 532AI, 28867, 78L05AC

3. Package

MUST CONTAIN ONE OR TWO LETTERS

D, DW, FK, FN, J, JD, JG, KC, KH, KV, LP, LU, N, P, U, W
(From Pin-Connection Diagram on Individual Date Sheet)

4. MIL-STD-883B, Method 5004, Class B

OMIT/883B WHEN NOT APPLICABLE

Circuits are shipped in one of the carriers below. Unless a specific method of shipment is specified by the customer (with possible additional costs), circuits will be shipped on the most practical carrier.

Dual-In-Line (D, DW, J, JD, JG, N, P)
- — Slide Magazines
- — A-Channel Plastic Tubing
- — Barnes Carrier
- — Sectioned Cardboard Box
- — Individual Cardboard Box

Plug-In (LP, LU)
- — Barnes Carrier
- — Sectional Cardboard Box
- — Individual Cardboard Box

Chip Carriers (FK, FN)
- — Anti-Static Plastic Tubing

Flat (U, W)
- — Barnes Carrier
- — Milton Ross Carrier

Power Tab (KC, KH, KV)
- — Sleeves

MEMORY PRODUCTS

At the heart of TI semiconductor development are memory products. The technology developed for Dynamic Random Access Memories (DRAMs) has given TI the processing base to create extensive lines ranging from high-performance logic products to sophisticated application processors. Included in TI's MOS Memory product line are DRAMs, Single-in-line Package DRAM memory modules (SIPs), Erasable Programmable Read-Only Memories (EPROMs), high-speed CMOS EPROMs with 35 ns access times, and One-Time-Programmable Read-Only Memories (PROMs).

First-In First-Out memories (FIFOs) are part of TI's bipolar product line. Utilizing TI's proprietary IMPACT™ process – a spin-off from DRAM technology which offers significant performance increases – these high-performance bipolar memories include 16x4, 16x5, 64x4, and 64x5 zero fall-through and toggle fall-through FIFOs with an overall operating speed of up to 30 MHz.

TI's MOS and bipolar memories meet stringent quality and reliability standards, making them suitable for programs such as ship-to-stock and just-in-time delivery. With DRAMs, TI also encourages self/joint qualification and will support customers with a huge data base of pertinent quality and reliability information.

Readers should refer to the Catalog Products Alphanumeric Index in Section 1, and to Section 12 of the Master Selection Guide for additional information on technical documentation.

Contents **Page**

MOS Memory 10-2
MOS EPROMs 10-2
MOS PROMs 10-3
MOS DRAMs 10-4
Dynamic RAM Modules 10-5
EPROM Cross Reference Guide 10-6
MOS Memory Ordering Instructions 10-8
Bipolar Memory 10-9
First-In First-Out Memories (FIFOs) 10-9
Bipolar Memory Ordering Instructions 10-10

MOS EPROM

DENSITY (BITS)	ORGANIZATION (WORDS × BITS)	TYPE	MAX ACCESS TIME (ns)	POWER SUPPLY (V)	MAX POWER DISSIPATION		PACKAGES	COMMENTS	DOCUMENT
					ACTIVE (mW)	STANDBY (mW)			
16K	2K × 8 High Speed	TMS27C292	35 45 45 50	5±5% 5±5% 5±10% 5±10%	394 315 330 303	N/A	J	High Speed CMOS EPROM	SMLS291A
32K	4K × 8	TMS2732A	170 200 250 450	5±5%	657	158	J	NMOS, JEDEC Standard Pinout	SMYD006
64K	8K × 8	TMS2764	170 200 250 450	5±5%	788	184	J	NMOS	SMYD006
		TMS27C64	150 150 200 200 250 250 300 300 450 450	5±5% 5±10% 5±5% 5±10% 5±5% 5±10% 5±5% 5±10% 5±5% 5±10%	158 165 158 165 158 165 158 165 158 165	1.4	J	CMOS	SMLS064
128K	16K × 8	TMS27C128	150 150 200 200 250 250 300 300 450 450	5±5% 5±10% 5±5% 5±10% 5±5% 5±10% 5±5% 5±10% 5±5% 5±10%	158 165 158 165 158 165 158 165 158 165	1.4	J	CMOS	SMLS128A
256K	32K × 8	TMS27C256	150 170 170 200 200 250 250 300 300 450 450	5±5% 5±5% 5±10% 5±5% 5±10% 5±5% 5±10% 5±5% 5±10% 5±5% 5±10%	158 158 165 158 165 158 165 158 165 158 165	1.4	J	CMOS	SMLS256A
512K	64K × 8	TMS27C512	200 200 250 250 300 300 450 450	5±5% 5±10% 5±5% 5±10% 5±5% 5±10% 5±5% 5±10%	158 165 158 165 158 165 158 165	1.4	J	CMOS	SMLS512A

MOS EPROM (Continued)

DENSITY (BITS)	ORGANIZATION (WORDS × BITS)	TYPE	MAX ACCESS TIME (ns)	POWER SUPPLY (V)	MAX POWER DISSIPATION		PACKAGES	COMMENTS	DOCUMENT
					ACTIVE (mW)	STANDBY (mW)			
1024K	64K × 16	TMS27C210	200	5±5%	TBD	TBD	J	CMOS	SMLS210
			200	5±10%					
			250	5±5%					
			250	5±10%					
			300	5±5%					
			300	5±10%					
	128K × 8	TMS27C010	200	5±5%	TBD	TBD	J	CMOS	SMLS010
			200	5±10%					
			250	5±5%					
			250	5±10%					
			300	5±5%					
			300	5±10%					

MOS PROM (One-Time Programmable)

DENSITY (BITS)	ORGANIZATION (WORDS × BITS)	TYPE	MAX ACCESS TIME (ns)	POWER SUPPLY (V)	MAX POWER DISSIPATION		PACKAGES	COMMENTS	DOCUMENT
					ACTIVE (mW)	STANDBY (mW)			
64K	8K × 8	TMS27PC64	150	5±5%	158	1.4	N	CMOS	SMLS064
			150	5±10%	165				
			200	5±5%	158				
			200	5±10%	165				
			250	5±5%	158				
			250	5±10%	165				
			300	5±5%	158				
			300	5±10%	165				
			450	5±5%	158				
			450	5±5%	165				
128K	16K × 8	TMS27PC128	200	5±5%	158	1.4	FM, N	CMOS	SMPS128A
			200	5±10%	165				
			250	5±5%	158				
			250	5±10%	165				
			300	5±5%	158				
			300	5±10%	165				
			450	5±5%	158				
			450	5±10%	165				
256K	32K × 8	TMS27PC256	200	5±5%	158	1.4	FM, N	CMOS	SMPS256A
			200	5±10%	165				
			250	5±5%	158				
			250	5±10%	165				
			300	5±5%	158				
			300	5±10%	165				
			450	5±5%	158				
			450	5±10%	165				
512K	64K × 8	TMS27PC512	200	5±5%	158	1.4	FM, N	CMOS	SMPS512
			200	5±10%	165				
			250	5±5%	158				
			250	5±10%	165				
			300	5±5%	158				
			300	5±10%	165				
			450	5±5%	158				
			450	5±10%	165				

MOS DRAM

DENSITY (BITS)	ORGANIZATION (WORDS × BITS)	TYPE	MAX ACCESS TIME (ns)	POWER SUPPLY (V)	MAX POWER DISSIPATION		PACKAGES	COMMENTS	DOCUMENT
					ACTIVE (mW)	STANDBY (mW)			
256K	256K × 1	TMS4256	100 120 150	5	385 358 330	25 25 25	FM, N	Page Mode	SMQS256B
		TMS4257	100 120 150	5	385 358 330	25 25 25	FM, N	Nibble Mode	
	64K × 4	TMS4464	100 120 150	5	385 358 330	28 28 28	FM, N		SMBS464B
		TMS4461	120 150	5	935 770	110 110	N, SD	Multiport Video RAM	SMVS011A
1M	1M × 1	TMS4C1024	100 120 150	5	413 385 385	28	DJ, N	Enhanced Page Mode	SMGS024A
		TMS4C1025	100 120 150	5	413 385 385	28	DJ, N	Nibble Mode	SMGS025
		TMS4C1027	100 120 150	5	413 385 385	28	DJ, N	Static Column Decode	SMGS027
	256K × 4	TMS44C256	100 120 150	5	413 385 385	28	DJ, N	Enhanced Page Mode	SMGS256
		TMS44C257	100 120 150	5	413 385 385	28	DJ, N	Static Column Decode	SMGS257

Dynamic RAM Modules

DENSITY (BITS)	ORGANIZATION (WORDS × BITS)	TYPE	MAX ACCESS TIME (ns)	POWER SUPPLY (V)	MAX POWER DISSIPATION		PACKAGES	COMMENTS	DOCUMENT
					ACTIVE (mW)	STANDBY (mW)			
1024K	1M × 1	TM4256FC1	100 120 150	5	385 358 330	99 99 99	Leaded	22-Pin	SMMS561A
	256K × 4	TM4256EC4	100 120 150	5	1540 1432 1320	99 99 99	Leaded	22-Pin	SMMS564B
2048K	256K × 8	TM4256FL8	100 120 150	5	3080 2864 2640	198 198 198	Leaded	30-Pin	SMMS568A
		TM4256GU8	100 120 150	5	3080 2864 2640	198 198 198	Socketable	30-Lead	
2304K	256K × 9	TM4256EL9	100 120 150	5	3465 3218 2970	226 226 226	Leaded	30-Pin	SMMS569A
		TM4256GU9	100 120 150	5	3465 3218 2970	226 226 226	Socketable, Presence Detect	30-Lead	
4096K	1 MEG × 4	TM024HAC4	100 120 150	5	1652 1540 1540	110 110 110	Leaded	CMOS, 24-Pin	SMMS104
8192K	1 MEG × 8	TM024GAD8	100 120 150	5	3304 3080 3080	220 220 220	Socketable, Presence Detect	CMOS, 30-Lead	SMMS102B
9216K	1 MEG × 9	TM024EAD9	100 120 150	5	3717 3465 3465	248 248 248	Socketable	CMOS 30-Lead	SMMS102B

EPROM CROSS REFERENCE GUIDE

COMPETITOR PART NUMBER	TEXAS INSTRUMENTS PART NUMBER
AMD	
AM27128A-1DC	TMS27C128-1JL
AM27128A-25DC	TMS27C128-25JL
AM27128A-2DC	TMS27C128-2JL
AM27128A-30DC	TMS27C128-30JL
AM27128A-3DC	TMS27C128-3JL
AM27128A-45DC	TMS27C128-45JL
AM27128A-4DC	TMS27C128-4JL
AM27128ADC	TMS27C128JL
AM27256-1DC	TMS27C256-1JL
AM27256-20DC	TMS27C256-20JL
AM27256-25DC	TMS27C256-25JL
AM27256-2DC	TMS27C256-2JL
AM27256-30DC	TMS27C256-30JL
AM27256-3DC	TMS27C256-3JL
AM27256-45DC	TMS27C256-45JL
AM27256-4DC	TMS27C256-4JL
AM27256DC	TMS27C256JL
AM2732B-305DC	TMS2732A-30JL*
AM2732B-455DC	TMS2732A-45JL*
AM2732BDC	TMS2732A-25JL*
AM27512-3DC	TMS27C512-3JL
AM27512DC	TMS27C512JL
AM2764A-2DC	TMS2764-20JL*
AM2764A-3DC	TMS2764-25JL*
AM2764A-4DC	TMS2764-45JL*
AM2764ADC	TMS2764-25JL*
CYPRESS	
CY7C292-35DC	TMS27C292-3JL
CY7C292-50DC	TMS27C292-50JL
FUJITSU	
MBM27128-20Z	TMS27C128-2JL
MBM27128-25Z	TMS27C128JL
MBM27128-30Z	TMS27C128-3JL
MBM27256-20Z	TMS27C256-2JL
MBM27256-25Z	TMS27C256JL
MBM27256-30Z	TMS27C256-3JL
MBM2764-20Z	TMS2764-20JL
MBM2764-25Z	TMS2764-25JL
MBM2764-30Z	TMS2764-25JL
MBM27C256-20Z	TMS27C256-2J
MBM27C256-25Z	TMS27C256JL
MBM27C256-30Z	TMS27C256-3J
MBM27C512-25Z	TMS27C512JL
MBM27C512-30Z	TMS27C512-3JL
GI	
27256-20	TMS27C256-20JL**
27256-25	TMS27C256-25JL**
27C128-20	TMS27C128-20JL**
27C128-25	TMS27C128-25JL**
27C256-20	TMS27C256-20JL**
27C256-25	TMS27C256-25JL**
HITACHI	
HG27128AG-17	TMS27C128-1JL
HG27128AG-20	TMS27C128-2JL
HG27128AG-25	TMS27C128JL
HN27256G-25	TMS27C256JL
HN27256G-30	TMS27C256-3JL
HN27512G-25	TMS27C512JL
HN27512G-30	TMS27C512-3JL
HN27C256G-17	TMS27C256-1JL
HN27C256G-20	TMS27C256-2JL
HITACHI (Continued)	
HN27C256G-25	TMS27C256JL
HN27C256G-30	TMS27C256-3JL
INTEL	
D27128	TMS27C128JL
D27128-25	TMS27C128-25JL
D27128-3	TMS27C128-3JL
D27128-30	TMS27C128-30JL
D27128-4	TMS27C128-4JL
D27128-45	TMS27C128-45JL
D27128A	TMS27C128JL
D27128A-1	TMS27C128-1JL
D27128A-2	TMS27C128-2JL
D27128A-20	TMS27C128-20J
D27128A-25	TMS27C128-25J
D27128A-3	TMS27C128-3JL
D27128A-30	TMS27C128-30J
D27256	TMS27C256JL
D27256-1	TMS27C256-1JL
D27256-2	TMS27C256-2JL
D27256-20	TMS27C256-20J
D27256-25	TMS27C256-25J
D27256-3	TMS27C256-3JL
D27256-30	TMS27C256-30J
D2732A	TMS2732A-25JL
D2732A-2	TMS2732A-20JL
D2732A-3	TMS2732A-30JL
D2732A-4	TMS2732A-45JL
D27512	TMS27C512JL
D27512-2	TMS27C512-2JL
D27512-3	TMS27C512-3JL
D2764A	TMS2764-25JL
D2764A-2	TMS2764-20JL
D2764A-3	TMS2764-25JL
D2764A-4	TMS2764-45JL
D27C256	TMS27C256JL
D27C256-1	TMS27C256-1JL
D27C256-2	TMS27C256-2JL
D27C256-20	TMS27C256-20JL
D27C256-25	TMS27C256-25JL
D27C256-3	TMS27C256-3JL
D27C256-30	TMS27C256-30JL
MITSUBISHI	
M5L27128	TMS27C128JL
M5L27128-2	TMS27C128-2JL
M5L27128-3	TMS27C128-3JL
M5L27256K	TMS27C256JL
M5L27256K-2	TMS27C256-2JL
M5L27256K-3	TMS27C256-3JL
M5L2764K	TMS2764-25JL
M5L2764K-2	TMS2764-20JL
M5M27C128K-2	TMS27C128-2JL
M5M27C128K	TMS27C128JL
M5M27C128K-3	TMS27C128-3JL
M5M27C256K	TMS27C256JL
M5M27C256K-2	TMS27C256-2JL
M5M27C256K-3	TMS27C256-3JL
NATIONAL	
NMC27C256Q20	TMS27C256-2JL
NMC27C256Q25	TMS27C256JL
NMC27C256Q250	TMS27C256-25JL
NMC27C256Q45	TMS27C256-4JL

* AMD 32K, 64K devices use a 12.5 volt programming voltage, versus TI devices, which use 21 volts.

** Note on VTI and GI cross reference: Many end-users may use TI's 5% V_{CC} 128K or 256K EPROM, designated by a single digit dash number, as an alternative.

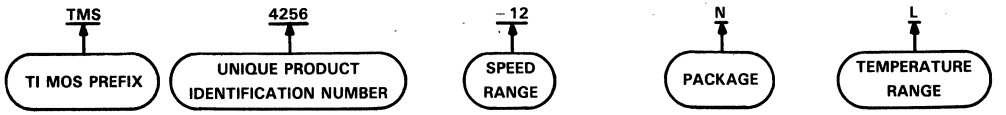
COMPETITOR PART NUMBER	TEXAS INSTRUMENTS PART NUMBER
NEC	
μPD27128D	TMS27C128JL
μPD27128D2	TMS27C128-2JL
μPD2764D	TMS2764-25JL
μPD2764D2	TMS2764-20JL
μPD27256D	TMS27C256JL
μPD27C256AD15	TMS27C256-1JL
μPD27C256AD20	TMS27C256-2JL
μPD27C256D15	TMS27C256-1JL
μPD27C256D20	TMS27C256-2JL
μPD27C256D25	TMS27C256JL
μPD27C512D20	TMS27C512-2JL
OKI	
MSM27128A	TMS27C128JL
MSM27256	TMS27C256JL
MSM2764-20RS	TMS2764-20JL
MSM2764-25RS	TMS2764-25JL
MSM2764-30RS	TMS2764-25JL
MSM27C128	TMS27C128JL
MSM27C256	TMS27C256JL
SEEQ	
DQ27128-2	TMS27C128-2JL
DQ27128-20	TMS27C128-20JL
DQ27128-25	TMS27C128-25JL
DQ27128-3	TMS27C128-3JL
DQ27128-30	TMS27C128-30JL
DQ27128-4	TMS27C128-4JL
DQ27128-45	TMS27C128-45JL
DQ27256	TMS27C256JL
DQ27256-25	TMS27C256-25JL
DQ27256-3	TMS27C256-3JL
DQ27256-30	TMS27C256-30JL
DQ2764-2	TMS2764-20JL
DQ2764-3	TMS2764-25JL
DQ2764-4	TMS2764-45JL
DQ27C256	TMS27C256JL
DQ27C256-25	TMS27C256-25JL
DQ27C256-3	TMS27C256-3JL
DQ27C256-30	TMS27C256-30JL
DQ27C256-4	TMS27C256-4JL
DQ27C256-45	TMS27C256-45JL
SGS	
M2732A-2F1	TMS2732A-20JL
M2732A-3F1	TMS2732A-30JL
M2732A-4F1	TMS2732A-45JL
M2732AF1	TMS2732A-25JL
M2764A-2F1	TMS2764-20JL
M2764A-4F1	TMS2764-45JL
M2764A-25F1	TMS2764-25JL
M27256F1	TMS27C256JL
M27256-3F1	TMS27C256-3JL
SIGNETICS	
27C256-20F	TMS27C256-2JL
27C256-25F	TMS27C256JL
TOSHIBA	
TC57256AD20	TMS27C256-2JL
TC57256AD25	TMS27C256JL
TC57256D20	TMS27C256-2JL
TC57256D25	TMS27C256JL
TMM27128-20AD	TMS27C128-2JL
TMM27128-25AD	TMS27C128JL

COMPETITOR PART NUMBER	TEXAS INSTRUMENTS PART NUMBER
TOSHIBA (Continued)	
TMM27256AD	TMS27C256JL
TMM27512-20	TMS27C512-2JL
TMM27512-25	TMS27C512JL
TMM27512-30	TMS27C512-3JL
TMM2764AD20	TMS2764-20JL
VTI	
VT27C128-20DC	TMS27C128-20JL**
VT27C128-25DC	TMS27C128-25JL**
VT27C128-30DC	TMS27C128-30JL**
VT27C256-20DC	TMS27C256-20JL**
VT27C256-25DC	TMS27C256-25JL**
VT27C256-30DC	TMS27C256-30JL**
WAFERSCALE	
WS57C191-45D	TMS27C292-45JL
WS57C191-50D	TMS27C292-50JL

* AMD 32K, 64K devices use a 12.5 volt programming voltage, versus TI devices, which use 21 volts.

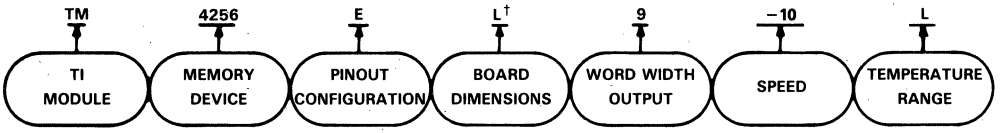
** Note on VTI and GI cross reference: Many end-users may use TI's 5% V_{CC} 128K or 256K EPROM, designated by a single digit dash number, as an alternative.

MOS memory device numbering system



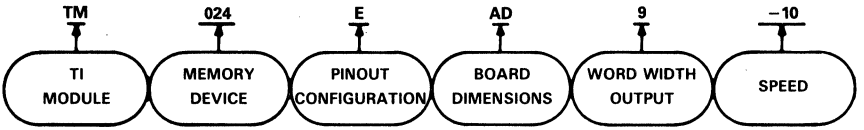
	Max Access			
TMS Commercial MOS	– 3 35 ns			
TMX Pre-production MOS	– 4 45 ns	– 20 200 ns	DJ Plastic SOJ Package	
	– 5 55 ns	– 25 250 ns	FM Plastic Chip Carrier	L 0°C to 70°C
	– 7 70 ns	– 30 300 ns	FP Plastic Chip Carrier	
	– 10 100 ns	– 35 350 ns	J Cerpak/Cerdip	
	– 12 120 ns	– 45 450 ns	JD Side Braze	
	– 15 150 ns		N Plastic DIP	
	– 17 170 ns		SD Zig-Zag-in-line	

TI 256K single-in-line package nomenclature



Max Access	
– 10 100 ns	L 0°C to 70°C
– 12 120 ns	
– 15 150 ns	

TI 1Meg single-in-line package nomenclature



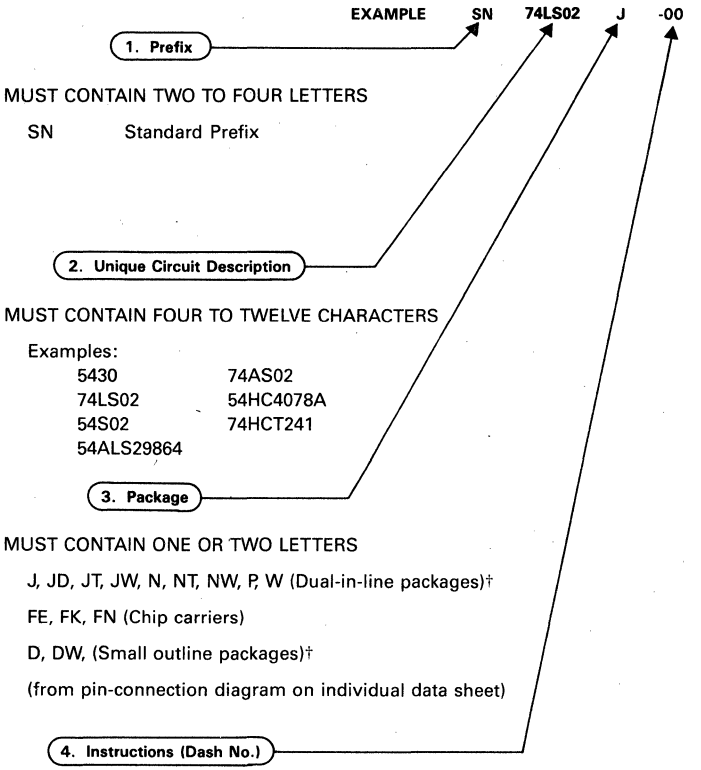
Max Access
– 10 100 ns
– 12 120 ns
– 15 150 ns

† The board dimensions for the various single-in-line package designators are given on pages 11-16 thru 11-23 of the 1986 MOS Memory Data Book (SMYD006).

First-In First-Out Memories (FIFOs)

DESCRIPTION	TYPE OF OUTPUT	TYPE	TECHNOLOGY							PACKAGES	DOCUMENT
			STD TTL	ALS	AS	LS	S	HC	HCT		
16 Words × 4 Bits	3-State	'222				•				J,N	SDVD001
		'224				•					
		'232		A						D,N,FK,FN	
	OC	'227				•				J,N	
		'228				•					
16 Words × 5 Bits	3-State	'225					•			J,N	SDV001
		'229		A						DW,FK,FN	
		'234		•						DW,J,FK,FN	SDAS106
		'233		A						DW,FK,FN,J,N	SDVD001
64 Words × 4 Bits	3-State	'236		•						DW,J,FK,FN	SDAS107
64 Words × 5 Bits	3-STATE	'235		•						DW,FN,FK,N	SDAS108

Factory orders for circuits described in this guide should include a four-part type number as explained in the following example.



MUST CONTAIN TWO NUMBERS

— 00 No Special instructions
— 10 Solder-dipped leads (N and NT packages only)
— T Tape and Reel (D and DW packages only)

† These circuits in dual-in-line and small outline packages are shipped in one of the carriers shown below. Unless a specific method of shipment is specified by the customer (with possible additional costs), circuits will be shipped in the most practical carrier. Please contact your TI sales representative for the method that will best suit your particular needs.

Dual-in-line (J, JD, JT, JW, N, NT, NW, P, W)
Small outline (D, DW)
Chip Carrier (FK, FN)

— Slide Magazines
— A-Channel Plastic Tubing
— Barnes Carrier (N only)
— Sectioned Cardboard Box
— Individual Plastic Box
— Tape and Reel (D and DW packages only)

GENERAL INFORMATION

Packages offered by Texas Instruments are designed to meet the most efficient and cost effective method of meeting customer requirements and today's high-density packaging needs.

During the last decade, TI has produced one of the largest IC socket families. TI's sockets include every type and size socket in common use today and are available in a wide choice of contact materials and designs.

As a major manufacturer of surface mount components, TI is committed to help customers make the transition to surface mount as easy and economical as possible.

Contents **Page**

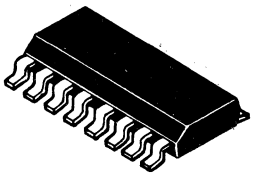
Mechanical Data 11-2
Package Descriptions 11-2
IC Sockets 11-13
Surface Mount Technology 11-25

MECHANICAL DATA

Package Descriptions

D Plastic 'Small Outline' Package

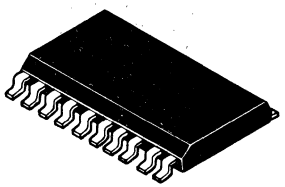
This 'small outline' package consists of a circuit mounted on a lead frame and encapsulated within a plastic compound. The compound will withstand soldering temperature with no deformation, and circuit performance characteristics will remain stable when operated in high-humidity conditions. Leads require no additional cleaning or processing when used in soldered assembly. The D package comes in 8, 14, and 16-pin configurations.



16-pin D package shown

DW Plastic 'Small Outline' Package

This 'small outline' package consists of a circuit mounted on a lead frame and encapsulated within a plastic compound. The compound will withstand soldering temperature with no deformation, and circuit performance characteristics will remain stable when operated in high-humidity conditions. Leads require no additional cleaning or processing when used in soldered assembly. The DW package comes in 16, 20, 24 and 28-pin configurations.

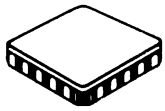


20-pin DW package shown

FD and FK Leadless Ceramic Chip Carrier Packages

Each of these hermetically sealed chip carrier packages has a three-layer ceramic base with a metal lid and braze seal. The packages are intended for surface mounting on solder lands on 1,27 (0.050-inch) centers. Terminals require no additional cleaning or processing when used in soldered assembly.

FK package terminal assignments conform to JEDEC standards 1, 2, and 11. The FD designation denotes non-JEDEC defined terminal assignments. Both FD and FK packages come in 20, 28, 44, 52, 68, and 84-terminal configurations.

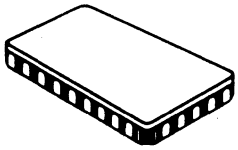


20-pin FD/FK package shown

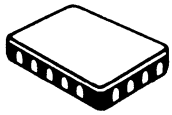
FE, FG, and FV Leadless Ceramic Chip Carrier Packages

These rectangular leadless ceramic chip carriers are used for memory products. The FG and FV packages conform to JEDEC standards. The FE designation denotes non-JEDEC defined terminal assignments.

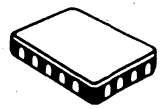
The FE package comes in 28 and 32-terminal configurations. The FG and FV packages comes in 18-terminal configurations.



28-pin FE package shown



18-pin FG package shown

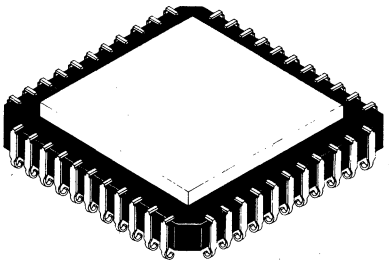


18-pin FV package shown

FJ Leaded Ceramic Chip Carrier Package

This square 'J' formed ceramic leaded chip carrier is used for microprocessor, display driver, and ASIC product families. The package consist of a 3-layer alumina ceramic case, a metal lid (gold-plated kovar), and gold-tin-braze-attached lead frame. Hermetic sealing is accomplished with a gold-tin-solder braze. The lead material is Alloy 42 base with nickel followed by gold plating. The final lead finish is gold plate or tin-lead solder dip. The package is designed for direct PC board mounting by reflow soldering or socket mounting.

The FJ package is available in 44 and 68-pin configurations.

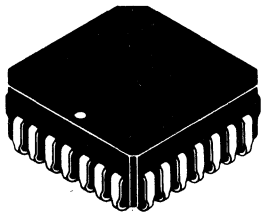


44-pin FJ package shown

FN Plastic Chip Carrier Package

Each of these chip carrier packages consists of a circuit mounted on a lead frame and encapsulated within an electrically nonconductive plastic compound. The compound withstands soldering temperature with no deformation, and circuit performance characteristics remain stable when the devices are operated in high-humidity conditions. The packages are intended for surface mounting. Leads require no additional cleaning or processing when used in soldered assembly.

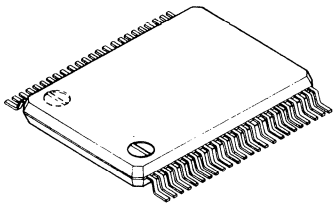
The FN package is available in 20, 28, 44, 68, and 84-terminal configurations.



28-pin FN package shown

FT Plastic Flatpack

This plastic flat package consists of a circuit mounted on a lead frame and encapsulated within a plastic compound. The compound will withstand soldering temperature with no deformation, and circuit performance characteristics will remain stable when operated in high-humidity conditions. Leads require no additional cleaning or processing when used in soldered assembly.

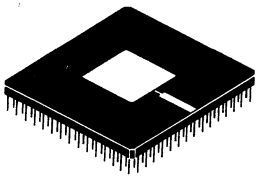


48-lead FT package shown

GB Pin-Grid-Array Ceramic Package

This is a hermetically sealed ceramic multilayer plug-in package, with metal cap and gold-plated pins, and selected leads especially designed for low resistance and low inductance. The package is used for microprocessor and memory product families, and for military logic array designs that require a high I/O count.

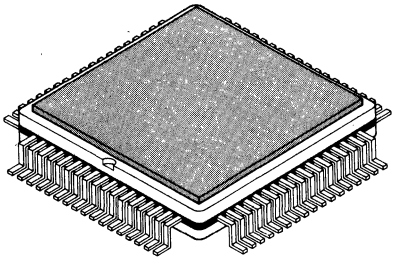
The GB package is available in 68, 84, 100, 108, 132, 144, 180, and 208-pin configurations.



68-pin GB package shown

HA Package

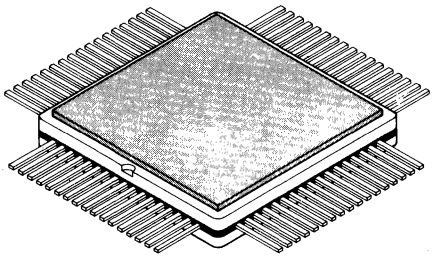
The 68-pin HA package is housed in a quadriform ceramic chip carrier (CERQUAD) and has gull-wing bent leads for surface-mount technology.



68-pin HA package shown

HB Package

The 68-pin HB package is housed in a quadriform ceramic chip carrier (CERQUAD) and has straight leads for surface-mount technology. The straight leads are for use with low-profile sockets.



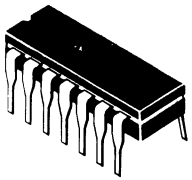
68-pin HB package shown

J, JT, and JW Packages

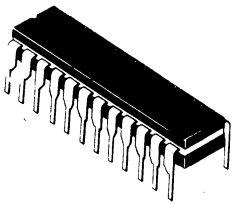
These hermetically sealed dual-in-line packages consist of a ceramic base, ceramic cap, and a lead frame. Hermetic sealing is accomplished with glass. Once the leads are compressed and inserted, sufficient tension is provided to secure the package in the board during soldering. Tin-plated (bright-dipped) leads require no additional cleaning or processing when used in soldered assembly.

For all except 24-pin packages, the letter J is used by itself since only the 24-pin package is available in more than one row-spacing. For the 24-pin package, the 7,62 (0.300) version is designated JT; the 15,24 (0.600) version is designated JW. If no second letter or row spacing is specified, the package is assumed to have 15,24 (0.600) row-spacing.

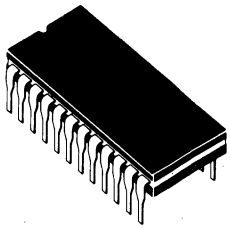
The J package comes in 14, 16, 18, 20, 24, and 28-pin configurations.



14-pin J package shown



24-pin JT package shown

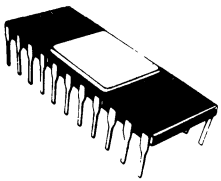


24-pin JW package shown

JD Package

This hermetically sealed ceramic dual-in-line package consists of a metal cap and gold plated side-brazed leads.

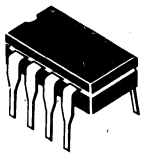
The JD package is available in 16, 18, 20, 22, 24, 28, 40, 48, 52, and 64-pin configurations.



22-pin JD package shown

JG Dual-In-Line Package

This hermetically sealed dual-in-line package consists of a ceramic base, ceramic cap, and 8-pin lead frame. Once the leads are compressed and inserted, sufficient tension is provided to secure the package in the board during soldering. Tin-plated or tin-lead-solder-dipped leads require no additional cleaning or processing when used in soldered assembly.

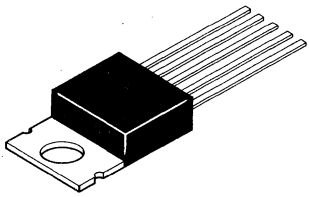


8-pin JG package shown

KC Package

This single-in-line package consists of a circuit mounted on a lead frame and encapsulated within a plastic compound. The compound will withstand soldering temperature with no deformation, and circuit performance characteristics will remain stable when operated under high humidity conditions.

The KC package is available in a 5-lead configuration only.

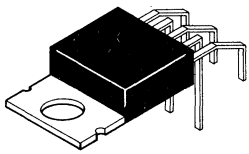


5-pin KC package shown

KH Package

This single-in-line package consists of a circuit mounted on a lead frame and encapsulated within a plastic compound. The compound will withstand soldering temperature with no deformation, and circuit performance characteristics will remain stable when operated under high humidity conditions.

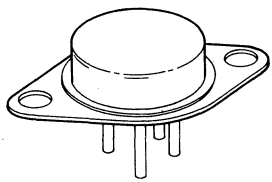
The KH package is available in a 5-lead configuration only.



5-pin KH package shown

KJ Metal Can Package

This hermetically sealed package consists of a base and can nickel-plated steel. The leads are nickel-plated Alloy 52 with solder-dip finish.

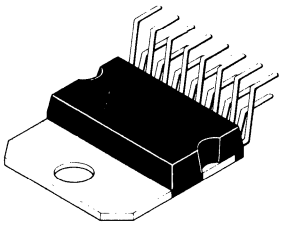


KJ package shown

KV Package

This single-in-line package consists of a circuit mounted on a lead frame and encapsulated within a plastic compound. The compound will withstand soldering temperature with no deformation, and circuit performance characteristics will remain stable when operated under high humidity conditions.

The KV package is available in 5 and 15-lead configurations.



15-pin KV package shown

L and LD Plug-In Packages

These hermetically sealed plug-in packages consist of a welded metal base and cap with individual leads secured by an insulating glass sealant. The gold-plated leads require no additional cleaning or processing when used in soldered assembly.

The L package is available in 8- and 15-pin configurations.

8-pin L package shown

3-pin LD package shown

LP and LU Plastic Packages

These packages consist of a circuit mounted on a lead frame and encapsulated with a plastic compound. The compound will withstand soldering temperature with no deformation, and circuit performance characteristics remain stable when operated in high-humidity conditions. Leads require no additional cleaning or processing when used in soldered assembly.

3-pin LP package shown

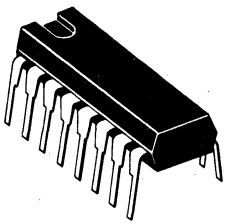
3-pin LU package shown

N, NT, and NW Packages

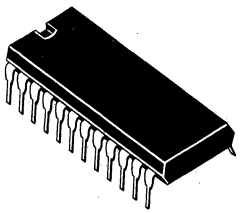
Each of these plastic dual-in-line packages consists of a circuit mounted on a lead frame and encapsulated within an electrically nonconductive plastic compound. The compound will withstand soldering temperature with no deformation, and circuit performance characteristics will remain stable when operated under high-humidity conditions. Once the leads are compressed and inserted, sufficient tension is provided to secure the package in the board during soldering. Leads require no additional cleaning or processing when used in soldered assemblies.

For all except 24-pin packages, the letter N is used by itself since only the 24-pin package in available in more than one row-spacing. For the 24-pin package, the 7,62 (0.300) version is designated NT; the 15,24 (0.600) version is designated NW. If no second letter or row spacing is specified, the package is assumed to have 15,24 (0.600) row-spacing.

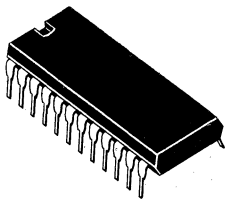
The N package comes in 14, 16, 18, 20, 22, 24, 28, 40, 48, 52, and 64-pin configurations.



16-pin N package shown



24-pin NT package shown

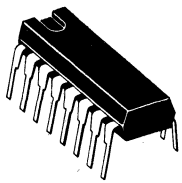


24-pin NW package shown

NE Package

This dual-in-line package consists of a circuit mounted on a lead frame and encapsulated within an electrically nonconductive plastic compound. The compound will withstand soldering temperature with no deformation, and circuit performance characteristics will remain stable when operated in high-humidity conditions. For better heat dissipation there are internal tabs connecting the two central leads on each side of the package. Once the leads are compressed and inserted, sufficient tension is provided to secure the package in the board during soldering. Leads require no additional cleaning or processing when used in soldered assembly.

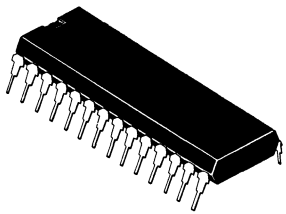
The NE package is available in 14 and 16-pin configurations.



16-pin NE package shown

NF Package

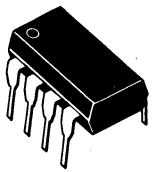
This dual-in-line package consists of a circuit mounted on a 28-pin lead frame and encapsulated within a plastic compound. The compound will withstand soldering temperature with no deformation, and circuit performance characteristics will remain stable when operated in high-humidity conditions. Once the leads are compressed and inserted, sufficient tension is provided to secure the package in the board during soldering. Solder-plated leads require no additional cleaning or processing when used in soldered assembly.



28-pin NF package shown

P Package

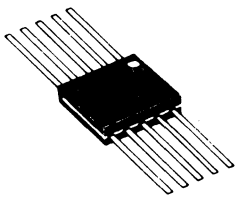
This dual-in-line package consists of a circuit mounted on an 8-pin lead frame and encapsulated within a plastic compound. The compound will withstand soldering temperature with no deformation, and circuit performance characteristics will remain stable when operated in high-humidity conditions. Once the leads are compressed and inserted, sufficient tension is provided to secure the package in the board during soldering. Solder-plated leads require no additional cleaning or processing when used in soldered assembly.



8-pin P package shown

U Package

This flat package consists of a ceramic base, ceramic cap, and an 10-pin lead frame. Circuit bars are alloy mounted. Hermetic sealing is accomplished with glass. Leads require no additional cleaning or processing when used in soldered assembly.

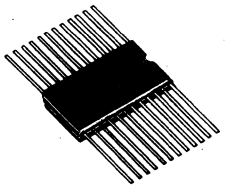


10-lead U package shown

W Package

This hermetically sealed flat package consists of an electrically nonconductive ceramic base and cap and a lead frame. Hermetic sealing is accomplished with glass. Tin-plated or tin-lead-solder-dipped leads require no additional cleaning or processing when used in soldered assembly.

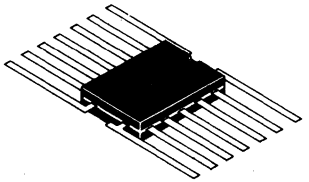
The W package is available in 14-,16-,20-, and 24-pin configurations.



24-pin W package shown

WA Package

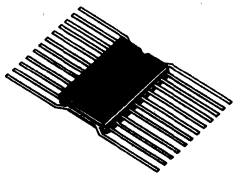
This hermetically sealed 14-pin flat package consists of an electrically nonconductive ceramic base and cap. It is a smaller version of the 14-pin W flatpack. Hermetic sealing is accomplished with glass. Tin-plated or tin-lead-solder-dipped leads require no additional cleaning or processing when used in soldered assembly.



14-pin WA package shown

WC Package

This hermetically sealed 24-pin flat package consists of an electrically nonconductive ceramic base and cap. It is a smaller version of the 24-pin W flatpack. Hermetic sealing is accomplished with glass. Tin-plated or tin-lead -solder-dipped leads require no additional cleaning or processing when used in soldered assembly.



24-pin WC package shown

IC SOCKETS

INTRODUCTION

Texas Instruments has developed solutions for today's high density packaging needs. The TI facility at Attleboro, Massachusetts (one of the world's largest suppliers of multimetal systems) provides leading-edge technology which, combined with reliable, high-volume, off-the-shelf interconnection products, allows TI to quickly meet volume commercial applications.

During the last decade, TI has produced one of the largest IC socket families. TI's sockets include every type and size socket in common use today and are available in a wide choice of contact materials and designs.

Our sockets are designed for:

- easy and efficient hand assembly
- compatibility with automatic assembly equipment
- maximum performance and board density

This section provides information on the following types of IC socket products.

PRODUCTION SOCKETS	TYPE
Plastic Leaded Chip Carrier	PLCC
Single-in-Line Packages	SIP
Pin-Grid Arrays	PGA
Dual In-Line	DIP
Dual In-Line 0.070-inch spacing	Shrink Pack
Quad In-Line	QUIP

BURN-IN/TEST SOCKETS	TYPE
Plastic Leaded Chip Carrier	PLCC
Pin Grid Array	PGA
Small Outlilne	J Lead
Dual In-Line	DIP
Dual In-Line 0.070-inch spacing	Shrink Pack
Small Outline	Flat Pack
Quad	Flat Pack

Specially formulated alloys give the TI contact springs:

- Low Contact Resistance
- High Contact Strength (to stand up to repetitive insertions and withdrawals)
- High normal forces assure gas-tight reliability

A full line of reliable, readily available, low-cost interconnection systems means premium performance at an economical price.

Additional information on these and other TI products, including pricing and delivery quotations, may be obtained from your nearest authorized TI Distributor, TI Sales Representative or:

Texas Instruments Incorporated
Connector Systems Department, MS 14-3
Attleboro, Massachusetts 02703
Telephone: (617) 699-5242/5375
TELEX: 92-7708

PERFORMANCE SPECIFICATIONS

Mechanical

Recommended PCB thickness range: 0.062 in to 0.092 in
Recommended PCB hole size range: 0.032 in to 0.042 in
Vibration: 15 G max
Shock: 100 G max
Insertion force: 0.59 lbs per position typ
Withdrawal force: 0.25 lbs per position typ
Normal force: 200 g min, 450 g typ
Wipe: 0.075 in min
Durability: 5 cycles min
Contact retention: 1.5 lbs min

Electrical

Current carrying capacity: 1 A per contact
Insulation resistance: 5000 MΩ min
Dielectric withstanding voltage: 1000 V ac rms min
Capacitance: 1 pF max

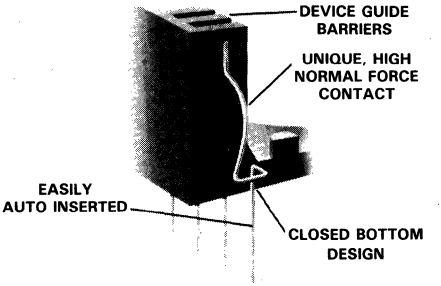
Environmental

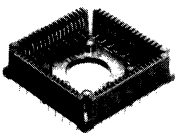
Operating temperature:
Operating: – 40°C to 85°C
Storage: –40°C to 95°C
Temperature cycling with humidity: will conform to final EIA specifications

MATERIALS

Body — Ryton R-4 (40% glass) UL 94 V-0 rating
Contacts — CDA 510 spring temper
Contact finish — 90/10 tin/lead (200 μin –400 μin) over 40 μin copper

Extraction tool available, consult factory
Contact factory for detailed information



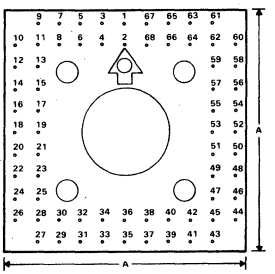


PART NUMBER SYSTEM

CPR PH XXX – X – X – O

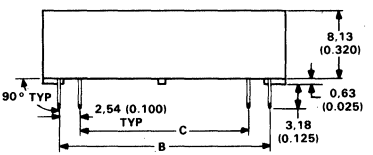
- O — Contact surface 1 – tin/lead plating
- X — Contact spacing 1 - 0.050 in
- XXX — Number of pos (044, 052, 068, 084)
- PH — Plated thru hole, solder tail
- CPR — TI socket Series
  Plastic leaded chip carrier

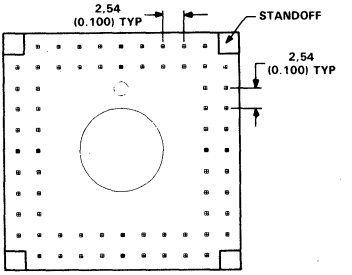
PLASTIC LEADED CHIP CARRIER CPR SERIES



68-Pin shown

NOTE: Socket electrical pin-out pattern represents component side of P.C.B. layout. (TYP. counter clockwise numbering pin-out system.)





Pos	A	B	C
44	21,43 (0.844)	17,78 (0.700)	12,70 (0.500)
52	23,98 (0.944)	20,32 (0.800)	15,24 (0.600)
68	29,06 (1.144)	25,40 (1.000)	20,32 (0.800)
84	34,14 (1.344)	30,48 (1.200)	25,40 (1.000)

Dimensions in parentheses are in inches

PRODUCTION DATA documents contain information current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.

TEXAS INSTRUMENTS
34 Forest Street • Attleboro, Massachusetts 02703

PRODUCT FEATURES

Can be loaded by top actuated insertion or press-in insertion, either manually or automatically
High reliability due to high pressure contact point
Open body and high stand-off design provide high efficiency in heat dissipation
High durability up to 10,000 cycles
Compact design

PERFORMANCE SPECIFICATIONS

Mechanical

Accommodates IC leads per specific IC device
Recommended PCB thickness range: 0.062 in to 0.092 in
Recommended PCB hole size range: 0.032 in to 0.042 in
Durability: 10,000 cycles 10 mΩ max contact resistance change
Insertion force: Zero g
Withdrawal force: Zero g†

Electrical

Contact rating: 1 A per contact
Contact resistance: 20 mΩ max initial
Insulation resistance: 1000 MΩ per MIL-STD 202, Method 302, Condition B
Dielectric withstanding voltage: 500 V ac rms per MIL-STD 202, Method 301

Environmental

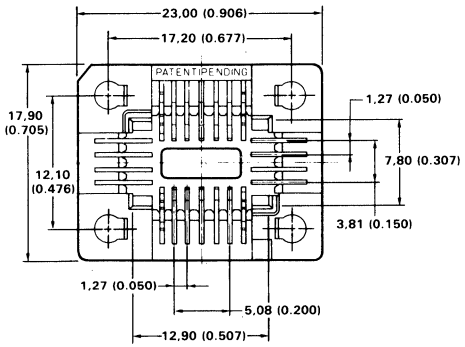
Thermal shock: 100 cycles, −25°C to +150°C
Temperature soak: 150°C for 48 hours
Operating temperature: −40°C to +150°C

MATERIALS

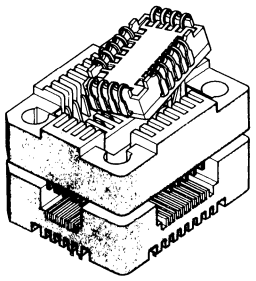
Body — ULTEM glass filled (UL 94 V-0)
Contact — copper alloy
Plating‡ — overall gold plate 4 μin over min 70 μin nickel plating

†After IC is unlocked from the socket
‡For additional plating options contact factory
For complete test report contact the factory

PLCC BURN-IN/TEST SOCKETS CPJ SERIES



Dimensions in parentheses are inches
Contact factory for detailed information

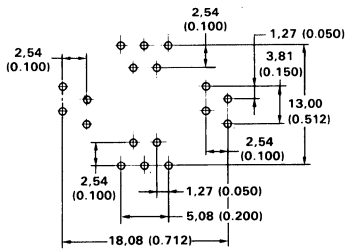


PART NUMBER SYSTEM

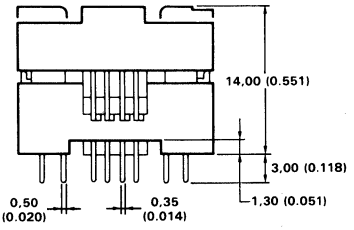
CPJ XX XX X – XXX – B

- CPJ — TI Burn-in PLCC series
- XX — Material: AA = copper alloy
- XX — Contact finish: 33 = overall gold plate
- X — Pitch: A = 0.050
- XXX — Number of contacts
- B

18 PIN FOOTPRINT SHOWN



SIZES: 18 PIN
22 PIN



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TEXAS INSTRUMENTS
34 Forest Street • Attleboro, Massachusetts 02703

PERFORMANCE SPECIFICATIONS†

Mechanical
Vibration: MIL-STD-202
Durability: 30 cycles
Insertion force: Zero g
Withdrawal force: Zero g‡
Contact (normal) force: 200 g min
Contact retention force: 2 lbs per circuit min

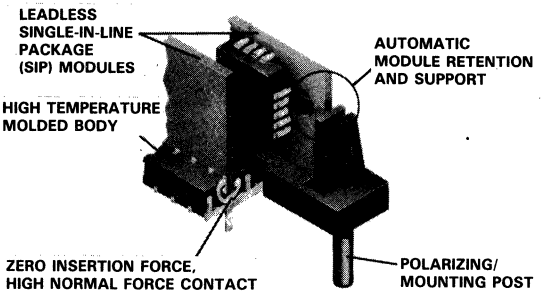
Electrical
Contact rating: 1 A
Contact resistance: 30 mΩ max initial
Insulation resistance: 1000 MΩ at 500 dc
Dielectric strength: 1500 V ac rms
Capacitance: 2 pF max

†Values may vary due to test sequence and SIP module configuration
‡After module is unlocked from the receptacle
For a complete test report, please contact factory

Environmental
(20 mΩ max contact resistance change after all tests)
Operating and storage temperature: −40°C to 100°C
Humidity: MIL-STD 202, Method 106D, 10 days
Temperature soak: 85°C for 160 hours
Thermal Shock: 5 cycles, −40°C to 85°C per MIL-STD 202, Method 107E

MATERIALS
Body — PES polyether sulfone, glass filled, UL 94 V-0
Contact — Beryllium copper C17000; phosphor bronze alloy CA510
Contact finishes — Post plate min 200 μin tin/lead over min 50μin nickel overall
Post plate min 30 μin hard gold over min 75 μin nickel overall

For additional plating options contact the factory.



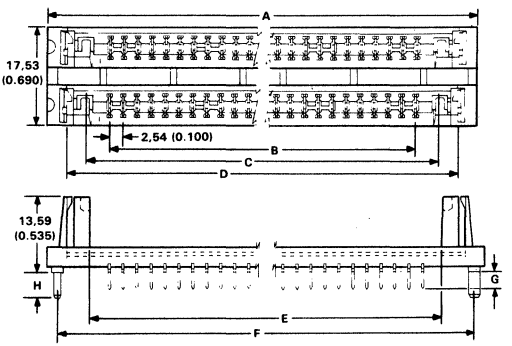
PART NUMBER SYSTEM

TS8X XX XX X −XX − XX

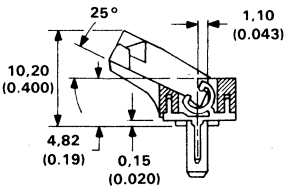
- XX (last): Variations — 00 — standard product
- XX: Size (number of contacts per row)
- X: Housing material — A — PES
- XX: Contact base material/plating
  - 01—C17000/30 μin gold
  - 02—CA510/30 μin gold
  - 03—C17000/200 μin tin/lead
  - 04—CA510/200 μin tin/lead
- XX: Configuration/row-to-row spacing
  - 01—single row/N/A
  - 03—dual row/0.300 in
  - 04—dual row/0.400 in
  - 05—dual row/0.500 in
- TS8X: Series number denotes
  - 0—0.100 in pitch, vertical mount
  - 1—0.100 in pitch, low-profile (25°) mount

Consult factory for availability of configurations, materials, and sizes.

DUAL ROW VERTICAL



SINGLE ROW LOW PROFILE



Ckt. Size	A	B	C	D	E	F	G	H
30	96,52 (3.800)	73,66 (2.900)	82,14 (3.234)	89,28 (3.515)	80,52 (3.170)	92,71 (3.650)	2,79 (0.110)	3,86 (0.152)

Contact factory for detailed information

Dimensions in parentheses are in inches

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TEXAS INSTRUMENTS
34 Forest Street • Attleboro, Massachusetts 02703

PERFORMANCE SPECIFICATIONS

Mechanical

Accommodates IC leads 0.015 in to 0.021 in diameter
Recommended PCB thickness range: 0.062 in to 0.092 in
Recommended PCB hole size range: 0.032 in to 0.042 in
Recommended hole grid pattern: 0.100 in ± 0.002 in each direction
Vibration: 15 G, 10-2000 Hz per MIL-STD 1344A, Method 2005.1 Test Condition III
Shock: 100 G, sawtooth waveform, 2 shocks each direction per MIL-STD 202, Method 213, Test Condition I
Durability: 5 cycles, 10 mΩ max contact resistance change per MIL-STD 1344, Method 2016
Insertion force: 3.6 oz (102 g) per pin typ using 0.018 in diameter test pin
Withdrawal force: 0.5 oz (14 g) per pin min using 0.018 in diameter test pin

Electrical

Contact rating: 1 A per contact
Contact resistance: 20 mΩ max initial
Insulation resistance: 1000 MΩ at 500 V dc per MIL-STD 1344, Method 3003.1
Dielectric withstanding voltage: 1000 V ac rms per MIL-STD 1344, Method 3001.1
Capacitance: 1 pF max per MIL-STD 202, Method 305

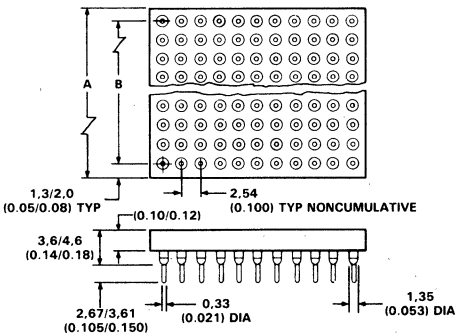
Environmental

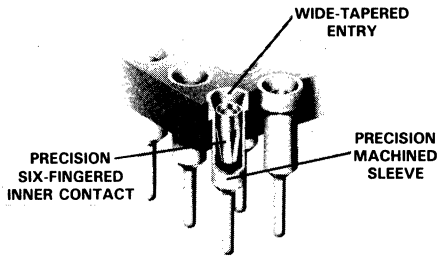
Operating temperature: −65°C to 125°C, gold; −40°C to 100°C, tin/lead
Corrosive atmosphere: 10 mΩ max contact resistance change when exposed to 22% ammonium sulfide for 4 hours
Gas tight: 10 mΩ max contact resistance change when exposed to nitric acid vapor for 1 hour
Temperature soak: 10 mΩ max contact resistance change when exposed to 105°C temperature for 48 hours

MATERIALS

Body — PBT polyester UL 94 V-0
On request, G10/FR4 or Mylar film
Outer sleeve — Machined Brass (QQ-B-626)
Inner contact — Beryllium copper (QQ-C-530) heat treated
Plating: (specified by part number)

PIN GRID ARRAY





Inner contact — 30 μin gold over 50 μin nickel or 100 μin tin/lead over 50 μin nickel
Outer sleeve — 10 μin gold over 50 μin nickel or 50 μin tin/lead over 50 μin nickel

PART NUMBER SYSTEM

C X G XX − XXX X X − X X

Pin Length

WIRE WRAP	SOLDER TAIL
3-0.510 long	9-0.105/0.150

Plating

P/N	Sleeve	Clip
0	Gold	Gold
5	Tin	Gold

Body Style and Orientation
Contact Loading Pattern
Number of Pins 024 to 324
Overall Grid Size 5 × 5 = 05 to 18 × 18 = 18
Pin Grid Array
BODY MATERIAL
G — Glass Filled Epoxy
P — PBT Polyester
TI Socket

Insulator Size	A ±0.010	B ±0.005†
9×9	(0.950) 24,13	(0.800) 20,32
10×10	(1.050) 26,67	(0.900) 22,86
11×11	(1.150) 29,21	(1.000) 25,40
12×12	(1.250) 31,75	(1.100) 27,94
13×13	(1.350) 34,29	(1.200) 30,48
14×14	(1.450) 36,83	(1.300) 33,02
15×15	(1.550) 39,37	(1.400) 35,56
16×16	(1.650) 41,91	(1.500) 38,10
17×17	(1.750) 44,45	(1.600) 40,64
18×18	(1.850) 46,99	(1.700) 43,18

†Noncumulative
Dimensions in parentheses are inches
Consult factory for detailed information

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TEXAS INSTRUMENTS
34 Forest Street • Attleboro, Massachusetts 02703

PERFORMANCE SPECIFICATIONS

Mechanical

Accommodates IC leads per specific IC device
Recommended PCB thickness range: 0.062 in to 0.092 in
Recommended PCB hole size range: 0.032 in to 0.042 in
Durability: 10,000 cycles, 20 mΩ max contact resistance change
Insertion force: 1.3 oz per position max
Withdrawal force: 8.8 grams per position min

Electrical

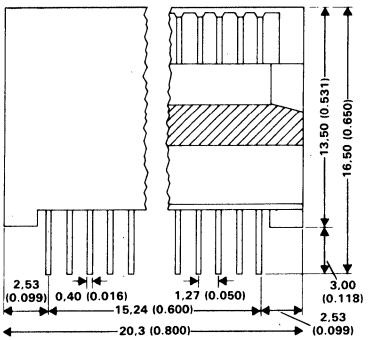
Contact rating: 1.0 A per contact
Contact resistance: 20 mΩ max initial
Insulation resistance: 1000 MΩ per MIL-STD 202, Method 302, Condition B
Dielectric withstanding voltage: 700 V ac rms per MIL-STD 202, Method 301

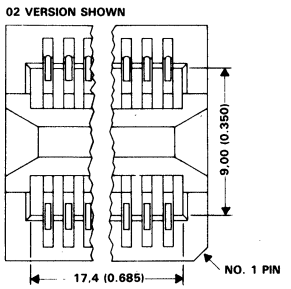
Environmental

Thermal shock: 100 cycles, −25°C to +180°C, 1 hour
Temperature soak: 180°C for 1000 hours, 80 mΩ max change
Operating temperature: −65°C to +180°C

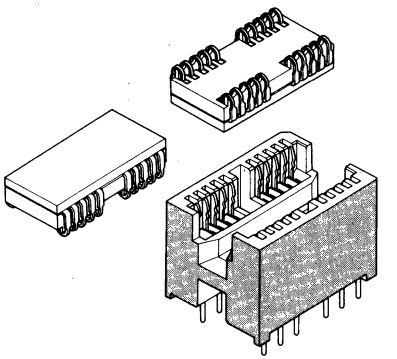
MATERIALS

Body — PES glass filled UL 94 V-0
Contact — copper alloy
Plating — overall gold plate min 4 μin over min 70 μin nickel plating





Dimensions in parentheses are inches
Contact factory for detailed information



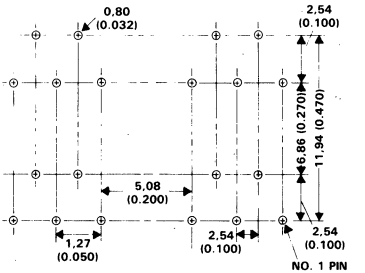
PART NUMBER SYSTEM

CSJT XXX – XX – XX X

- CSJT: TI SOJ series
- XXX: Number of Contacts
- XX: Contact Finish
  - 37 = Overall gold plate 4 μin
  - 38 = Overall gold plate 30 μin
  - 57 = Selective gold plate 4 μin
  - 58 = Selective gold plate 30 μin
- XX: Body Variation
  - 02 = Standard 1 forward/backward insertion
  - 03 = Special/orientation pin
  - 04 = Special/high standoff
  - 05 = Special/24-pin
  - 06 = Standard 2 forward insertion, BECU
- X: Body Material
  - Blank = G.F. PES
  - A = PPS R4-03
  - B = G.F. PEI

SIZES: 20 pin
26 pin

20-PIN (02 VERSION) FOOTPRINT SHOWN



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TEXAS INSTRUMENTS
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PERFORMANCE SPECIFICATIONS

Mechanical

Accommodates IC leads 0.011 ± 0.003 in by 0.018 ± 0.003
Recommended PCB thickness range: 0.062 in to 0.092 in
Recommended PCB hole size range: 0.032 in to 0.042 in
Recommended hole grid pattern: 0.100 in ± 0.003 in each direction
Vibration: 15 G, 10-2000 Hz per MIL-STD 1344A, Method 2005.1 Test Condition III.
Shock: 100 G, sawtooth waveform, 2 shocks each direction per MIL-STD 202, Method 213, Test Condition I
Durability: 5 cycles, 10 mΩ max contact resistance change per MIL-STD 1344, Method 2016
Insertion force (C7X and C86): 16 oz (454 g) per pin max
Withdrawal force: (40 g) per pin min

Electrical

Contact rating: 1 A per contact
Contact resistance: 20 mΩ max initial
Insulation resistance: 1000 MΩ at 500 V dc per MIL-STD 1344, Method 3003
Dielectric withstanding voltage: 1000 V ac rms per MIL-STD 1344, Method 3001.1
Capacitance: 1 pF max per MIL-STD 202, Method 305

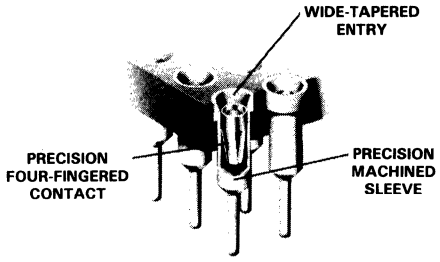
Environmental

Operating temperature: −55°C to 125°C, gold; −40°C to 100°C, tin
Corrosive atmosphere: 10 mΩ max contact resistance change when exposed to 22% ammonium sulfide for 4 hours
Gas tight: 10 mΩ max contact resistance change when exposed to nitric acid vapor for 1 hour
Temperature soak: 10 mΩ max contact resistance change when exposed to 105°C temperature for 48 hours

Materials (C7X and C86)

Body — PBT polyester UL 94 V-0
C7X Contacts — Outer sleeve: brass
Clip: BECU
Contact finish — clip 30 μin gold over 50 μin nickel or 50 μin tin/lead over 50 μin nickel
Specified by Part Number — sleeve 10 μin gold over 50 μin nickel or 50 μin tin/lead over 50 μin nickel
C86 Contacts — Phosphor bronze base metal
C86 Contact-finish — Tin plate 200 μin over copper flash

C7X SERIES — SCREW MACHINE

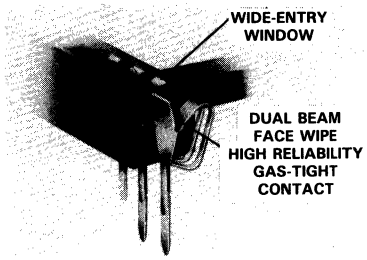


C7X SERIES — SCREW MACHINE PART NUMBER SYSTEM

C7X (X) XX – X X

- C7X: Screw Machine Socket
  - 1 — wire wrap
  - 2 — solder tail
- (X): S — Single-in-line package (where applicable)
- XX: Number of Positions
- X: Plating (Sleeve/Clip)
  - 0 — Gold/Gold
  - 5 — Tin/Gold
- X: Variations
  - Solder Tail : 9 Pin length 0.125 Typ
  - Wire Wrap : 3 Pin length 0.510

C86 SERIES — STAMPED AND FORMED



C86 SERIES PART NUMBER SYSTEM

C 86 XX – 01

- C: TI Socket Series
- 86: Tin Dual Beam Face Wipe
- XX: Number of positions
- 01: Variation
  - 01 — Standard product

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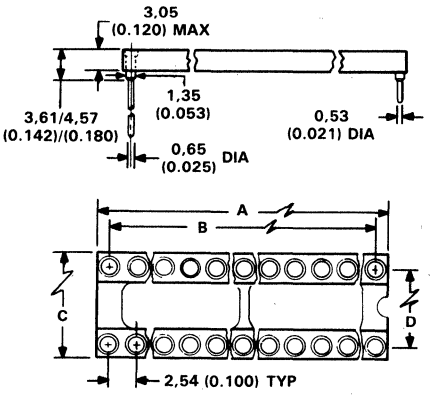
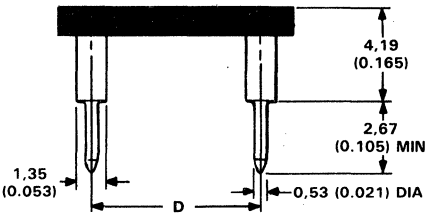
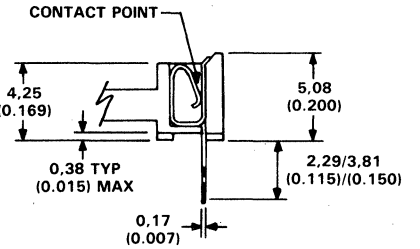
DUAL-IN-LINE C7X AND C86 SERIES



C7X SERIES



C86 SERIES



DIPS

Positions	Dim A Max	Dim B ±0.005	Dim C Max	Dim D ±0.005	Positions	Dim A Max	Dim B ±0.005	Dim C Max	Dim D ±0.005
6	7,62 (0.300)	5,08 (0.200)	10,16 (0.400)	7,62 (0.300)	†24	30,48 (1.200)	27,94 (1.100)	12,76 (0.500)	10,16 (0.400)
8	10,16 (0.400)	7,62 (0.300)	10,16 (0.400)	7,62 (0.300)	28	35,56 (1.400)	33,02 (1.300)	17,78 (0.700)	15,24 (0.600)
14	17,78 (0.700)	15,24 (0.600)	10,16 (0.400)	7,62 (0.300)	32	40,64 (1.600)	38,10 (1.500)	17,78 (0.700)	15,24 (0.600)
16	20,32 (0.800)	17,78 (0.700)	10,16 (0.400)	7,62 (0.300)	34	45,72 (1.800)	43,18 (1.700)	17,78 (0.700)	15,24 (0.600)
18	22,86 (0.900)	20,32 (0.800)	10,16 (0.400)	7,62 (0.300)	40	50,80 (2.000)	48,26 (1.900)	17,78 (0.700)	15,24 (0.600)
20	25,40 (1.000)	22,86 (0.900)	10,16 (0.400)	7,62 (0.300)	48	60,96 (2.400)	58,42 (2.300)	17,78 (0.700)	15,24 (0.600)
22	27,94 (1.100)	25,40 (1.000)	12,76 (0.500)	10,16 (0.400)	50	63,50 (2.500)	60,96 (2.400)	25,40 (1.000)	7,62 (0.900)
24	30,48 (1.200)	27,94 (1.100)	17,78 (0.700)	15,24 (0.600)	64	81,28 (3.200)	78,74 (3.100)	25,40 (1.000)	22,86 (0.900)
†24	30,48 (1.200)	27,94 (1.100)	10,16 (0.400)	7,62 (0.300)					

†Nonstandard sizes
Not all sizes available in each series
Dimensions apply to all series

Dimensions in parentheses are inches
Contact factory for detailed information

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TEXAS INSTRUMENTS
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PERFORMANCE SPECIFICATIONS

Mechanical

Accommodates IC leads 0.011 in by 0.018 in
Recommended PCB thickness range: 0.062 in to 0.092 in
Recommended PCB hold size range: 0.032 in to 0.042 in
Durability: 10K cycles — CM Series, 5K cycles — CP/CQ

Electrical

Contact rating: 1 A per contact
Contact resistance: 20 mΩ max initial
Insulation resistance: 1000 MΩ at 500 V dc
Dielectric withstanding voltage: 1000 V ac rms
Capacitance: 1 pF max per MIL-STD 202, Method 305

Environmental

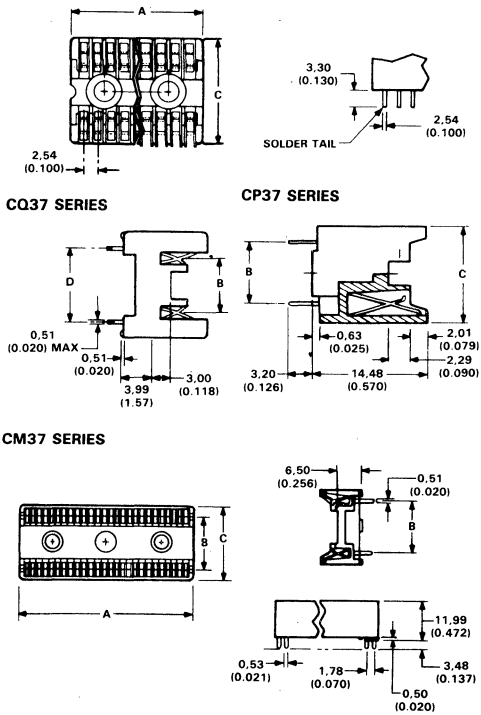
Operating temperature: −65°C to 170°C — CP/CM Series,
−65°C to 150°C — CQ Series
Humidity: 10 mΩ max contact resistance
Temperature Soak: 10 mΩ max contact resistance change

MATERIALS

Body — PPS (polyphenylen sulfide) UL 94 V-0
Contacts — Higher performance copper nickel alloy
Plating:† 4 μin of gold min over 100 μin of nickel min

†For additional plating options consult the factory

BURN-IN/TEST DIP SOCKETS



PART NUMBER SYSTEM

C X 37 XX – 22 S X

- C — TI Socket Series
- X — Series Features: Q — Auto unloadable; P — High density mounting; M — Shrink 0.070 centers
- 37 — Overall gold plate
- XX — Number of positions
- 22 — Copper nickel alloy Soldertail
- S — PPS high temperature body material
- X — Pin to pin: A — 0.100 centers; B — 0.070 centers

CQ37 SERIES

Number of Positions	A ±0.01 Length	D ±0.02	C ±0.01 Width	B ±0.01 Contact
14	20,32 (0.800)			
16	22,35 (0.880)	12,70	15,24	7,62
18	24,89 (0.980)	(0.500)	(0.600)	(0.300)
20	27,43 (1.080)			
24	32,51 (1,280)			
28	37,59 (1.480)	19,05	22,86	15,24
40	52,83 (2.080)	(0.750)	(0.900)	(0.600)
42	55,37 (2.180)			

CP37 SERIES

Number of Positions	A max Length	B ±0.02	C max Width
8	11,68 (0.460)		
14	17,78 (0.700)		
16	20,32 (0.800)	7,62	12,70
18	22,86 (0.900)	(0.300)	(0.500)
20	25,40 (1.000)		
24	30,48 (1.200)		
28	35,56 (1.400)	15,24	20,32
40	50,80 (2.000)	(0.600)	(0.800)

CM37 SERIES

Number of Positions	A ±0.016 Length	B ±0.02	C ±0.016 Width
28	27,18 (1.070)	10,67 (0.420)	17,20 (0.677)
40	37,85 (1.490)		
42	39,62 (1.560)	16,51 (0.650)	23,11 (0.910)
54	50,29 (1.980)		
64	59,18 (2.330)	20,32 (0.800)	26,92 (1.060)

Dimensions in parentheses are inches
Contact factory for detailed information

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TEXAS INSTRUMENTS
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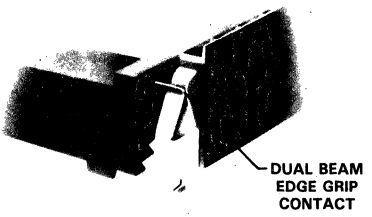
PERFORMANCE SPECIFICATIONS

Insertion force: 16 oz (454 g) per pin max
Withdrawal force: 1.5 oz (42 g) per pin min
Operating temperature: −40°C to 100°C, tin/lead
Accommodates IC leads 0.011 ± 0.0003 in by 0.018 ± 0.003 in
Contact rating: 1 A per contact

MATERIALS

Body — PBT polyester UL 94 V-0
C4S & CxW Contacts — Copper alloy
Contact finish — Reflow tin plating, 40 μin min



PART NUMBER SYSTEM FOR CxW SERIES

C X W XX − 11

- XX: Number of contacts (42, 52, 64)
- W: Staggered leads
- X: 5 — 64 contacts; 6 — 42, 52 contacts
- C: TI Socket Series

QUAD-IN-LINE (CxW SERIES)

Product Number	A Max Length	B Row to Row	C Max Row to Row
C5W64-11	41,90 (1.65)	22,90 (0.950)	19,05 (0.750)
C6W42-11	27,90 (1.10)	22,90 (0.900)	17,80 (0.700)
C6W52-11	34,30 (1.35)	22,90 (0.900)	17,80 (0.700)

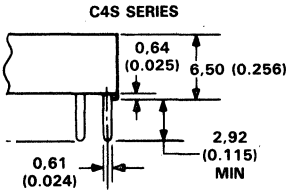
Dimensions in parentheses are inches
Contact factory for detailed information

PART NUMBER SYSTEM† FOR C4S SERIES

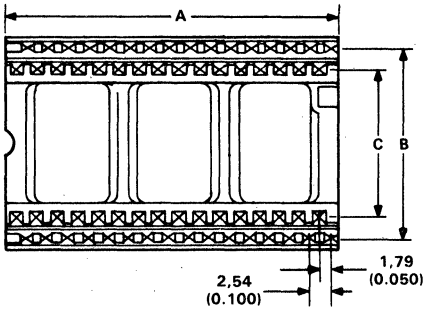
C 4 S XX − 02

- XX: Number of contacts 28, 40, 42, 52, 54, 64
- S: Shrink Pack (0.070 in pin-to-pin contact spacing)
- 4: Reflow tin plating
- C: TI Socket Series

†Also available in screw machine contacts



QUAD-IN-LINE (CxW SERIES)

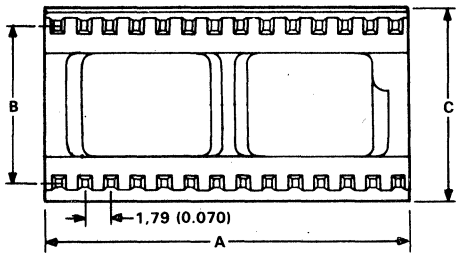


C4S SERIES

Positions	A Max Length	B Row to Row	C Max Width
28	25,02 (0.985)	10,16 (0.400)	13,00 (0.512)
40	35,69 (1.405)	15,24 (0.600)	17,98 (0.708)
64	57,07 (2.247)	19,05 (0.750)	21,62 (0.851)

Dimensions in parentheses are inches

SHRINK PACK DIP (C4S SERIES)



PRODUCTION DATA documents contain information current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.

TEXAS INSTRUMENTS
34 Forest Street • Attleboro, Massachusetts 02703

PERFORMANCE SPECIFICATIONS

Mechanical

Accommodates IC leads per specific IC device
Recommended PCB thickness range: 0.062 in to 0.092 in
Recommended PCB hole size range: 0.032 in to 0.042 in
Durability: 5000 cycles, 10 mΩ max contact resistance change per MIL-STD 1344, Method 2016

Electrical

Contact rating: 1 A per contact
Contact resistance: 20 mΩ max initial
Insulation resistance: 1 MΩ at 500 V dc per MIL-STD 1344, Method 3003.1
Dielectric withstanding voltage: 700 V ac rms per MIL-STD 1344, Method 3001.1
Capacitance: 1 pF max per MIL-STD 202, Method 305

Environmental

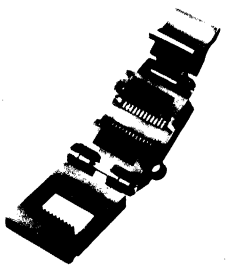
Operating temperature: −65°C to 170°C
Humidity: 10 mΩ max contact resistance change when tested per MIL-STD 202, Method 103B
Temperature soak: 10 mΩ max contact resistance change when exposed to 105°C temperature for 48 hours

MATERIALS

Body — CFP Series — PES (polyether sulfone) glass filled UL 94 V-0
Temperature: −65°C to 170°C
Contact — Beryllium copper
Plating:† Overall gold plate min 4 μin over min 70 μin nickel plating

†For additional plating option consult the factory.
Dimensional drawings available from factory.

SMALL OUTLINE FLAT PACK (CFPH/K SERIES)

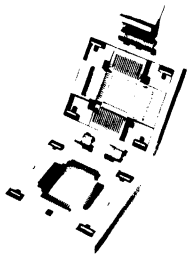


PART NUMBER SYSTEM

C XX X – XXX – XX – 01

- C — TI Series socket
- XX — Style FP — Flat pack
- X — Configuration: H — 14, 16, 18, 20 Positions; K — 24, 28 Positions
- XXX — Number of positions
- XX — Plating: 37 — overall gold plate
- 01 — Plating: 37 — overall gold plate

QUAD FLAT PACK (CFPM SERIES)

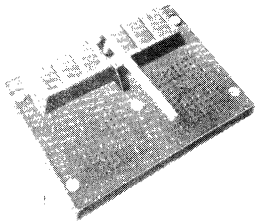


PART NUMBER SYSTEM

CXX X – XXX – XX – 01X

- CXX — TI socket; Style PF — Flat pack
- X — Configuration: M — Quad pack
- XXX — Number of positions
- XX — Plating: 37 — overall gold plate
- 01X — Variations: A — 1.0 mm ℄; B — 0.8 mm ℄ contact spacing

PIN GRID ARRAY (CZFW SERIES)



PART NUMBER SYSTEM

C XX X – XXX – XX – 01

- C — TI Series socket
- XX — Style ZF — Zero force
- X — Configuration: W — 11 × 11 × 2
- XXX — Number of positions
- XX — Plating: 37 — overall gold plate
- 01 — Plating: 37 — overall gold plate

AVAILABLE SIZES

CFPH Series 14, 16, 18, 20 CFPK Series 24, 28	Small Outline Flat Pack
CFPM Series 64, 80	Quad Flat Pack
CZFW Series 11 × 11 × 2	Pin Grid Array

Contact factory for detailed information

PRODUCTION DATA documents contain information current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.

TEXAS INSTRUMENTS
34 Forest Street • Attleboro, Massachusetts 02703

B

For more information contact your local distributor or contact TI directly:

Texas Instruments Incorporated
CSD Marketing, MS 14-1
Attleboro, MA 02703

(617) 699-5242/5269

TI Distributors

TI AUTHORIZED DISTRIBUTORS IN USA

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Aved Electronics
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Graham Electronics
Hall-Mark Electronics
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Marshall Electronics
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Powell Electronics
Summit Distributors
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(617) 893-7780

Field Sales Offices

UNITED STATES

California
Irvine 91714
17891 Cartwright Road
Phone: (714) 660-8111

San Diego 92123
4333 View Ridge Ave., Suite B
Phone (619) 278-9600/9603

Torrence 90502
9505 Hamilton St.
Bldg. A, Suite One
Phone: (213) 217-7000

Georgia
Norcross 30092
5515 Spaulding Drive
Phone: (404) 662-7861/7931

Massachusetts
Attleboro 02703
34 Forest Street, MS 10-6/MS 14-3
Phone: (617) 699-5206/1278/5213

North Carolina
Charlotte 28210
8 Woodlawn Green
Suite 100
Phone: (704) 527-0930

Texas
Dallas 75265
7800 Banner Drive, MS 3936
Phone: (214) 995-7550/7547/7548

Texas Instruments provides customer assistance in varied technical areas. Since TI does not possess full access to data concerning all of the uses and applications of customers' products, responsibility is assumed by TI neither for customer product design nor for any infringement of patents or rights of others, which may result from TI assistance.

INTERNATIONAL

Australia
Texas Instruments Australia, Ltd.
P.O. Box 63
Elizabeth, South Australia 5112
Phone: 61-8-255-2066

England
Texas Instruments, Ltd.
Beffordia House
Prebend Stsreet
Bedford MK41 7PA
Phone: (0234) 63211, Ext. 1

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Texas Instruments, Ltd.
Metallurgical Materials Division
8-10 Avenue Morane Saulnier
78140 Velizy-Villacoublay, Paris
Phone: 333. 946. 9712

Hong Kong
Texas Instruments Asia, Ltd.
Asia Pacific Division
8th Floor, World Shipping Centre
Harbor City 7, Canton Road
Kowloon, Hong Kong
Phone: 852-3-722-1223

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Texas Instruments Italia SPA
Viale Europa, 40
I-20093 Cologno Monzese
Milano
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Japan
Texas Instruments Japan, Ltd.
305 Tanagasnira
Oyama-Cho
Suntoh-Gun, Shizuoka-Ken
Japan 410-13
Phone: (81) 550-81211

Mexico
Texas Instruments de Mexico, SA
Av. Reforma No. 450-10 Piso
Col. Juarez
Delegacion: Cuauhtemoc
Mexico City, D.F.
Mexico 06600
Phone: 52-5-514-3583

Singapore
Texas Instruments Asia
#02-08, 12 Lorong Bakar Batu
Kolam Ayer Industrial Estate
Singapore 1334
Republic of Singapore
Phone: 65-747-2255

Taiwan
Texas Instruments Supply Co.
Taiwan Branch
Bank Tower
Room 903, 205 Tun Hwa N. Road
Taipei, Taiwan
Phone: 886-2-713-9311

West Germany
Texas Instruments Deutschland GMBH
Metallurgical Materials Div.
Rosenkavalierplatz 15
D-8000 Muenchen 81
Phone: 011-49-89-915081

SURFACE MOUNT TECHNOLOGY

One of the primary goals of today's solid-state equipment manufacturers is increased density – to pack more functions into a given size enclosure, or to maintain the same functional capability, but reduce the size. Another goal is to reduce cost. Surface Mount Technology (SMT) for solid-state assemblies helps meet both of these goals and is applicable to consumer, commercial, industrial and military equipment.

As the next step in the advance of high-density integrated circuit assemblies for equipment manufacture, SMT opens new avenues of freedom to the electronic design engineer frustrated by size, weight, and density limitations of conventional packaging. It can dramatically increase board density, while affording significant performance advantages. It can reduce the volume, weight, and cost of many printed-circuit boards (PCBs).

Surface mount components (SMCs) lend themselves readily to automated assembly, using high-speed pick-and-place machines. Thus, shipping, inventory, and handling costs are reduced. Additional benefits offered by SMCs include:

1. Increased reliability.
2. Lower noise and improved frequency response resulting from shorter circuit paths.
3. Simpler electromagnetic interference (EMI) shielding and filtering needed to meet Federal Communications Commission standards for EMI generation.

As a major manufacturer of SMCs, TI is committed to helping the customer make the transition to surface mount as easy and economical as possible. Getting started in SMT – switching from older and less efficient methods of PCB fabrication – means learning some new manufacturing techniques, and may entail some capital overlay. In volume production, however, it can actually reduce capital and space costs.

BROAD SURFACE MOUNT CHOICE

TI's commitment to the program is evidenced by the steadily expanding list of IC products in surface mount packages. There are currently over 2550 different packages which include:

- More than 1550 digital bipolar logic devices
- More than 250 linear circuits – op amps, comparators and timers, line circuits, peripheral drivers, and voltage regulators
- More than 600 CMOS digital devices
- MOS DRAMs, TI's video RAM, FPLA, IMPACT™, PAL® circuits and PROMs
- Microcontrollers, standard cells and gate arrays.

SURFACE MOUNT COMPONENT PACKAGING OPTIONS

TI manufactures five types of surface mounted IC packages to support the design, development and production of surface mount assemblies (Table 1). Plastic leaded chip carriers (PLCC), small outline integrated circuits (SOIC), and small outline integrated circuits with "J" leads (SOJ) support the commercial market. Leadless ceramic chip carriers (LCCC) and leaded ceramic chip carriers (LDCC) support the military market. TI participates in the establishment of JEDEC standards, and most of the surface mount products manufactured by TI have JEDEC standard pin-outs.

Table 1. Surface Mount Component Packaging Options

PACKAGE TYPE	PIN COUNT	LINEAR	LOGIC	PAL's, FPLA's PROM's, EPROM's	SEMI CUSTOM	DRAM's	MICROPROCESSOR & PERIPHERALS
D (SOIC)	8	•					
	14	•	•				
	16	•	•				
DJ (SOJ)	20					•	
DW (SOIC)	16		•				
	20	•	•				
	24	•	•				
	28		•		•		
FD (LCCC)	44	•	•		•		•
	68		•		•		•
FG (LCCC)	18					•	
FK (LCCC)	20	•	•	•	•		
	28	•	•	•	•		•
FJ (LDCC)	44	•					
	68				•		•
FM (PLCC)	18					•	
	22					•	
	32			•			
FN (PLCC)	20	•	•	•	•		
	28	•	•	•	•		•
	44	•	•		•		•
	68		•		•		•
	84				•		
FP (PLCC)	18					•	
FV (LCCC)	18					•	

Products in Chip Carrier (PLCC, LCCC & LDCC) and Small Outline Packages (SOIC & SOJ)

It is anticipated that most new users of surface-mounted components will require the PLCC, SOIC, or SOJ packages since they were developed primarily for commercial, industrial and consumer-oriented products. The LCCC & LDCC packages were developed primarily for military equipment that requires the extended environmental characteristics and high reliability specifications provided by hermetically sealed packages.

MEMORY MODULES

The memory module provides a somewhat different approach for satisfying increased memory density requirements. The complete assembly – consisting of several memory devices in chip-carriers or SOJ packages mounted with decoupling capacitors on a common substrate with connections to the module pins or "nodules" along one edge of the substrate – is called a Single-In-Line Package (SIP) memory module. Since they can be mounted perpendicularly on a mother board of standard through-hole design, SIPs require smaller footprints than designs utilizing standard DIPs. Socketable SIPs can also be mounted on the mother board using standard connectors from such manufacturers as Texas Instruments. Sockets are available in perpendicular and angular (for height sensitive applications) versions.

TEXAS INSTRUMENTS SURFACE MOUNT CUSTOMER CENTER

The Surface Mount Customer Center provides all customers with hands-on experience and assistance in surface mount assembly. The center is equipped to do surface mount assembly of integrated circuits, resistors, and capacitors on the customer's PWB or a TI-provided demonstration board. The adjacent SIP manufacturing line may be viewed as an example of a volume production facility. To obtain more detailed information on the Surface Mount Customer Center, call the nearest Field Sales Office or TI Distributor.

Refer to the Products Support Section and to the back of this Guide for addresses and telephone numbers.

PRODUCT LISTING

The demand for SMCs is increasing and the product line is steadily expanding. Contact your local TI field sales office or local authorized distributor for the latest Texas Instruments Surface Mount availability.

CUSTOMER SUPPORT

Texas Instruments offers a wide array of circuit design tools and support services ranging from design kits, Regional Technology Centers, technical seminars and workshops, to technical documentation.

TI's library of design kits assists design engineers in evaluating some of its most sophisticated components. Regional Technology Centers (RTCs) offer an unmatched array of up-to-date technical seminars and workshops for the benefit of customers requiring engineering details on TI products for design or evaluation purposes.

New product information is available via VIDEOLOG. An electronic search-by-part-number feature of VIDEOLOG's catalog section allows the user to locate information on any TI semiconductor product.

Technical documentation is fully described — forms are provided to simplify the ordering process.

Contents **Page**

Design Kits 12-2
Videolog 12-3
Technical Seminars and Workshops 12-4
Semiconductor Literature 12-6
Data Sheet/Other Literature Order Form 12-7
Semiconductor Book Descriptions 12-9
Semiconductor Book Order Form 12-15

DESIGN KITS

TI's library of design kits assists design engineers in evaluating some of its most sophisticated components. TI offers the "TMS380 Design-In Accelerator Kit" as a LAN aid in the design of an IBM-compatible Token-Ring Network Adapter. The "TMS320 DSP Design Kit" is intended for use in TMS320 Digital Signal Processor applications, and the "TMS340 Graphics Design Kit" provides a bit-mapped text and graphics approach. The "Memory Management Design Kit" is a tool aimed at assisting the designer in optimizing memory interface (access time).

The kits reduce design cycle time by providing everything in one convenient package.

- The "TMS380 Design-In Accelerator Kit" (TMS380LDK-1) is useful to designers of token ring adapter hardware. It comes with three complete TMS380 LAN adapter chipsets. Documents include a TMS380 Bring-Up Guide for testing hook ups, a TMS380 Product Description and a TMS380 Adapter Chipset User's Guide. Also provided are EPROMs containing software for verifying and testing an IBM-compatible prototype adapter card design.
- The "TMS380 ASIC-LAN Toolkit" (TMDP380ASIC) provides assistance to those LAN customers* who have layout area constraints. The kit helps to shorten design cycle time – in some cases by as much as two or three months – and also reduces development costs, since it contains captured schematics with test vectors. Soft macro building blocks, allowing the designer to customize the design or to start from the ground up, are included.
- The "TMS380 Bridge Design Kit" (TMDX380BMP) assists in making design easier for implementing bridging – for the purpose of hooking one token ring to another token ring to expand the local area network in reach or in number of stations – using the IBM method of Source Routing or the IEEE 802.1 method of Adaptive Bridging. The kit contains: one TMS38021; one set of TMS380 Bridge Options Software in two 8K × 8 EPROMs (this software is executed by the TMS38010 and includes features desired in bridge applications); and a TMS38021 Bridge Applications Report, including the TMS38021 device data sheet.
- The "TMS380 802.2 LLC Evaluation Kit" (TMDS380LLC) provides the means to evaluate IBM-compatible IEEE 802.2 software Logical Link Control on token ring TMS380-based hardware. The kit includes: three samples of IEEE 802.2 software on floppy media for download into DRAM, or in non-volatile 16K × 8 EPROMs; an IBM compatible Adapter Handler Emulator on floppy media; and a TMS380 User's Guide Supplement including the LLC Extended System Software Interface.
- The "TMS320 DSP Design Kit" (TMS320DDK) provides the key building blocks for prototyping a DSP system. It includes two DSP chips, TI's first generation TMS32010 and second generation TMS32020, along with support peripherals. Two design examples (TMS32010 ADPCM and TMS32020 FFT) are also provided, along with a 735-page manual, "Digital Signal Processing Applications with the TMS320 Family." Also included is the Digital Signal Processing Software Library, containing source code for most of the DSP applications discussed in the Applications Book as well as other valuable routines.
- For immediate evaluation of the DSP2400 Modem Chipset, TI offers a "DSP2400 Prototype Kit" (TMDSP2400PK). The kit contains an assembled modem prototype on a PC half-card as well as the DSP2400 User's Guide. The user's guide contains all the information required to operate, evaluate and manufacture a DSP2400-based modem, including operating instructions, schematics, lists of materials and assembly drawings.

- The "TMS340 Graphics Design Kit" (TMS340GDK) contains one full set of components likely to be used in a unified text/graphics system. These include a TMS34061 video system controller, TMS34070 color palette, two TMS4161EV4-15 64K × 4 video RAM SIPs, two SN74AS194N 4-bit bidirectional universal shift registers and a 68-pin PLCC socket for the TMS34061 VSC. Documents include user's guides for the TMS34061 and TMS34070, along with data sheets for the TMS4161 SIPs and SN74AS194N shift register.
- The "TMS34010 Graphics Design Kit" (TMS34010GDK) contains the essential components needed to begin designs with the TMS34010 Graphics System Processor. Included is a TMS34010, a TMS34070 Color Palette, four TMS4461 256K Video RAMs, and a 68-pin socket. Also part of the kit are an Assembler, Linker, Simulator, and Function Library Sampler software packages. A complete set of applicable user's guides, data sheets, and application notes are included as well.
- The "Memory Management Design Kit" (SN74MMDK01) consists of devices, documentation, and graphics model software to allow a designer to optimize a memory interface system. Included are a 32-bit EDAC, 1 megabit DRAM Controller, Cache Tag device, BiCMOS memory driver, a 10 ns PAL and logic sequencer for timing control, a 256K DRAM, data sheets and an Application Handbook describing possible combinations of products. The kit also contains graphics model software from third-party suppliers to support workstation design efforts.

The TI design kits may also be used as follow-up support for corresponding TI RTC courses.

Contact a TI field sales representative for more information.

A complete listing of field sales offices, authorized TI distributors, TI Regional Technology Centers (RTCs) and the TI customer response center is on the back page of the Guide.

VIDEOLOG

New product information on components, specifications, pricing, and sales locations is available from TI via VIDEOLOG. Using VIDEOLOG's convenient one-stop shopping service helps the design engineer to do the job right the first time and gives him or her a clear leadership edge.

All TI products are maintained in the catalog section of VIDEOLOG. An electronic search-by-part-number feature allows the user to locate information on any TI product.

A product preview section offers the design engineer an advance look at new TI products prior to their release. There is also an FYI (For Your Information) section containing headline items of interest.

Call 1-800-VIDPEEK (1-800-843-7335) with any ASCII (80 column) terminal and modem (even parity, 7 data bits, 1 stop bit) for a free on-line demonstration of the VIDEOLOG service. Or call 1-800-VIDEOLOG (1-800-843-3656) for more information. In Conneticut call 203-838-5100.

*Unless the designer has previous ASIC experience, it is highly recommended that the Advanced Standard Cell Workshop (#RTC220) be taken first.

TECHNICAL SEMINARS AND WORKSHOPS

Texas Instruments Regional Technology Centers (RTCs) offer an unmatched array of up-to-date technical seminars and workshops at seven convenient locations across North America for the benefit of customers requiring engineering details on Texas Instruments products for design or evaluation purposes.

½ DAY TECHNICAL SEMINARS

RTC technical product seminars can help the individual keep abreast of the growing array of TI system products. These seminars -- aimed at system architects and decision makers who will find facts and answers needed to make more informed, timely decisions -- are available upon request on similar topics as the "Hands-On Workshops" listed below.

HANDS-ON WORKSHOPS

RTC workshops give design engineers and implementors experience using the latest advanced technology TI products, development tools, and design techniques. Participants can accelerate their learning curves dramatically by attending these up-to-date, hands-on workshops.

TI goes beyond the standard format. Students get started right away by using the latest development tools possible and by interacting with expert instructors who teach them design techniques that only come through experience. The exercises and lab experiments start with the basics and move quickly into real-world examples. In TI workshops, students learn by DOING, not just by listening and watching. Courses currently being offered include:

- TMS320C1X Digital Signal Processor (DSP) Design Workshop (RTCWS-320DSP1)
- TMS320C2X Digital Signal Processor (DSP) Design Workshop (RTCWS-320DSP2)
- Application Specific IC (ASIC) Design Workshop (RCTWS-ASIC1)
- TMS34061 Graphics System Design Workshop (RTCWS-34061)
- TMS34010 Graphics System Processor Design Workshop (RTCWS-34010)
- TMS380 IBM® Token-Ring Network Design Workshop (RTCWS-380LAN1)
- 'AS888/890 Bit-Slice Design Workshop (RTCWS-AS888)
- Field Programmable Logic (FPL) Design Workshop (RTCWS-FPL)

TMS320 Digital Signal Processor Design Workshops (RTCWS-320DSP1,RTCWS-320DSP2)

The established leader in digital signal processing, TI offers a complete family of compatible DSPs. The four-day TMS320C1X workshop (RTCWS-320DSP1) is an excellent introductory course for first-time TMS320 users. The intensive three and one-half day TMS320C2X workshop (RTCWS-320DSP2) is for advanced applications using the TMS320C2X "second generation" digital signal processor. Both workshops are practical design courses which allow the student to practice what he or she learns.

Application Specific IC (ASIC) Design Workshop (RTCWS-ASIC1)

Digital logic design engineers can easily make the transition to gate array and/or standard cell IC design at TI's three-day ASIC workshop. They will be taught by experienced ASIC design engineers from RTC design sites, and will gain a detailed understanding of the overall ASIC design flow. The course is valuable whether the customer intends to use RTC design services or else his or her own in-house design team.

TMS34061 Graphics System Design Workshop (RTCWS-34061)

During this three-day workshop, the design engineer will be using the new TMS340 Color Graphics Controller (CGC) Board, which works with IBM-compatible PCs. The student will come away from the course with the ability to design his or her own bit-mapped graphics system utilizing these new members of a growing family of graphics products from TI, the pioneer in video-graphics ICs.

TMS34010 Graphics System Processor Design (RTCWS-34010)

This four-day workshop will enable the design engineer to get the most out of the powerful new TMS34010 Graphics System Processor (GSP), by accelerating the learning curve and speeding the design and delivery of a TMS34010-based product. The student will learn how to use the TMS34010, either alone or as a system building block, by the use of numerous design techniques commonly used in the application of bit-mapped graphics.

IBM Token-Ring Network Design Workshop (RTCWS-380LAN1)

In this three-day workshop, the student learns how to design the IBM Token-Ring Network into his or her end equipment using the TI TMS380 Token-Ring LAN chipset, the only complete LAN connection solution compatible with the IBM Token-Ring Network and the IEEE 802.5 specification. During the workshop, the design engineer will learn how to use the TMS380 chipset with popular 16- and 32-bit microprocessors, backplane buses, and operating systems.

'AS888/890 Bit-Slice Design Workshop (RTCWS-AS888)

In this two-day workshop, the student learns how to tap the power and performance of the 'AS888 bit-slice processor and the 'AS890 microcontroller, and also gains an understanding of other high-speed components including the 'AS897 barrel shifter and THCT1010 multiplier/accumulator.

Field Programmable Logic (FPL) Design Workshop (RTCWS-FPL)

This one-day workshop introduces the design engineer to the TI IMPACT (IMPlanted Advanced Composed Technology) FPL devices. These parts establish a new performance standard with propagation delays cut 40% to 15 ns, at 180 mA. During this workshop, the student will design the logic for a simple dice game and program a single FPL device to implement the game.

ENROLLMENT AND ADDITIONAL INFORMATION

Call the appropriate Regional Technology Center (RTC) to enroll or for additional information. Workshops enrollment is limited to 10. It is recommended that individuals sign up at least three weeks in advance to reserve space in a course. Refer to the back of this Guide for addresses and telephone numbers.

SEMICONDUCTOR LITERATURE

As explained in Page 2, Section 1 of this Guide, TI's semiconductor literature is identified by a seven- or eight-character product source code consisting of four (4) alpha characters, three (3) numeric characters, and a revision letter if applicable. The fourth alpha character designates a particular document as follows:

CODES	DESCRIPTION
A	Application Notes, Briefs, Reports
B	Brochures
C	Catalogs, Master Selection Guides
D	Data Books
S	Data Sheets, Data Manuals on Single Products
T	Direct Mail Materials
U	Owner's Manuals, Software Manuals, User's Guides
Z	Other

As an example, literature code SDLD001 identifies a data book, code SLNA001 an application report, and code SPVB061 a brochure.

Data sheets and data books are available for most of the products listed in the Master Selection Guide. Application notes are also available. Other literature includes the following:

OTHER LITERATURE:

DESCRIPTION	DOCUMENT
74AS EVM-1 Bit-Slice Evaluation Module User's Guide	SDBU004
Military Products Designer's Reference Guide	SGYZ001B
TMS700 Family Product Bulletin	SPNT020
TMS320 DSP Reference Guide	SPRU011
TMS34010 Graphics Design Kit Flyer	SPVB061
TMS340 Graphics 3rd Party Guide	SPVB066
TMS340 Graphics Design Kit Reference Guide	SPVZ001
TMS380 Lan Product Bulletin	SPWT018A
Regional Technology Center Course Catalog	SSRC007
Texas Instruments Lowers Semiconductor Cost-of-Ownership	SSYB057

DATA SHEET/OTHER LITERATURE ORDER FORM

Name _____

Title _____

Company _____

Address & M/S _____

_____

City _____ State ____ Zip _____-_____

Phone ____ ____-_____ Extension ____

SSY18FMS700C

Please select any combination up to 10 free pieces from the data sheets and other literature listed below. You will only receive the first 10 selections if you exceed the 10 piece limit.

Data Sheets:

☐ SCCS005B	☐ SDAS114	☐ SLAS010	☐ SLLS027	☐ SLOS015
☐ SCLS044	☐ SDAS116	☐ SLAS013	☐ SLLS028A	☐ SLOS016
☐ SCLS051	☐ SDAS117	☐ SLCS001	☐ SLLS029	☐ SLOS017
☐ SCLS052	☐ SDAS118	☐ SLCS002	☐ SLLS030	☐ SLO3001
☐ SCLS055	☐ SDAS119	☐ SLCS003	☐ SLLS031	☐ SLO3002
☐ SCLS056	☐ SDAS120A	☐ SLCS004	☐ SLNS001A	☐ SLO3003
☐ SCSS001	☐ SDAS121A	☐ SLFS001	☐ SLNS002A	☐ SLO3004
☐ SCSS002	☐ SDAS126	☐ SLFS002	☐ SLNS003A	☐ SLO3005
☐ SCSS003B	☐ SDAS127	☐ SLFS003	☐ SLNS008	☐ SLO3006
☐ SCTS003A	☐ SDAS130	☐ SLFS004	☐ SLNS015	☐ SLO3007
☐ SCTS020	☐ SDAS131	☐ SLFS005	☐ SLNS016	☐ SLRS011
☐ SCTS021	☐ SDPS018	☐ SLFS006	☐ SLNS017	☐ SLRS012
☐ SCTS022	☐ SDPS020	☐ SLFS007	☐ SLNS018	☐ SLSS001
☐ SDAS100	☐ SGLS014	☐ SLFS008	☐ SLOS007	☐ SLSS002
☐ SDAS103	☐ SGLS015	☐ SLFS011	☐ SLOS008	☐ SLVS004
☐ SDAS104	☐ SGMS005A	☐ SLFS012	☐ SLOS010	☐ SLVS005
☐ SDAS105	☐ SGMS006A	☐ SLFS013	☐ SLOS011	☐ SLVS007
☐ SDAS106	☐ SGMS007	☐ SLFS014	☐ SLOS012	☐ SLVS009
☐ SDAS107	☐ SGMS020	☐ SLFS015	☐ SLOS013	☐ SLVS010
☐ SDAS108	☐ SGMS256A	☐ SLLS007A	☐ SLOS014	☐ SLVS012

(over)

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A reference guide that spells out the technical issues confronting advanced logic design engineers and describes the methods for handling the issues. Provides an overview of TI's EPIC™ Advanced CMOS Logic (ACL) family, its characterization and specifications, and the very important issue of simultaneous switching, which, if not treated correctly, can result in unreliable systems operation. PC board and system-level design consideration are included.

Advanced CMOS Logic Data Book - 1987 **300 Pages** **SCAD001**

Detailed specifications and applications information on the TI family of 1-μm EPIC Advanced CMOS Logic devices. ACL offers less than 3 ns propagation delays at CMOS power dissipation, yet has 24 mA drive capability. Product selection guide and alphanumeric index are included.

TMS4500A Dynamic RAM Controller User's Guide - 1985 **39 Pages** **SCG690A**

Describes functional operation of the TMS4500A and how it can be used in a microprocessor system. Includes introduction, basic operation, typical implementation, design criteria and application examples.

High-Speed CMOS Logic Data Book - 1984 **800 Pages** **SCLD001A**

Detailed specifications and application information on the TI family of High-Speed CMOS (HCMOS) Logic devices. Includes product selection guide, glossary and alphanumeric index.

Telecommunications Circuits Data Book - 1986 **380 Pages** **SCTD001**

Detailed specifications and application information on the TI family of telecommunications products. This includes switching and transmission, codecs, filters, combos, FSK modems, subscriber line control, and subscriber products. Contains product selection guide, glossary and alphanumeric index.

ALS/AS Logic Data Book (TTL Vol 3) - 1986 **1100 Pages** **SDAD001B**

Detailed specifications and applications information on the TI family of Advanced Low-Power Schottky (ALS) and Advanced Schottky (AS) logic devices. Includes a functional index of all TI bipolar digital devices.

SN74AS888/890 Bit-Slice User's Guide (8-BIT) - 1985 **222 Pages** **SDBU001A**

Introduces the 74AS888 and 74AS890 8-bit bit-slice ALU and sequencer, provides detailed specifications on their operation and outlines support tools available for system development.

SN74AS897 16-Bit Barrel Shifter User's Guide - 1985 **60 Pages** **SDBU003**

Detailed specifications and application information on the SN74AS897 16-bit barrel shifter. Includes architecture description, 16-bit/32-bit shift operation examples, instruction set, multiple cycle operation and electrical characteristics.

F Logic Data Book - 1987 **281 Pages** **SDFD001**

Detailed specifications and application information on the TI family of SN54F/SN74F TTL logic devices.

TTL Data Book Vol 2 - 1985 **1400 Pages** **SDLD001**

Detailed specifications and application information on the TI family of Low-power Schottky (LS), Schottky (S) and standard TTL logic devices. The logic symbols are in accordance with IEEE and IEC standards.

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LSI Logic Data Book - 1986 **872 Pages** **SDVD001**

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Overview of IEEE Standard 91 - 1984 **32 Pages** **SDYZ001**

A brief, condensed overview of the symbolic language for digital logic circuits by the IEEE and the IEC Technical Committee TC-3 incorporated in IEEE STD. 91-1984.

TTL Data Book Vol 4 - 1986 **486 Pages** **SDZD001B**

Detailed specifications and application information on the TI family of bipolar Field-Programmable Logic Arrays (FPLA & PAL®), Programmable Read-Only Memories (PROM), Random-Access Memories (RAM), microprocessors and support circuits.

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The U.S. edition of a popular design manual first published in Europe. It discusses key issues in using LinCMOS™ circuits to design amplifiers, oscillators, filters, sample-and-hold, and many other types of common circuits. The generalized schematics, design equations, and performance curves will be useful even for those working with traditional technologies.

Linear and Interface Circuits Applications Vol 1 - 1985 **160 Pages** **SLYA001**

Containing basic theory, key characteristics and applications, the prime objective of the book is to assist the user of the broad range of linear and interface integrated circuits to understand the operating principles. Such circuits are normally used to sense or activate circuits, subsystems, or systems that interface to complex digital systems. Covers amplifiers, comparators, timers and voltage regulators.

Linear and Interface Circuits Applications Vol 2 - 1985 **136 Pages** **SLYA002**

Continues with the same content as Volume 1. Emphasis is on circuits used for data transmission and for the display of information at the human-machine interface. LED, plasma (both dc and ac), gas discharge, vacuum fluorescent and thin-film electroluminescent display drivers are included. For data transmission, all the various RS-232C, 423A, 422A, 485 and IEEE-488 line drivers, receivers and transceivers are included.

Linear and Interface Circuits Applications Vol 3 - 1987 **280 Pages** **SLYA003**

Volume III of a three-volume set that emphasizes peripheral circuits used to interface between TTL, MOS, and CMOS logic levels and higher voltage and current components. It also covers data acquisition systems (A/D and D/A) as they interface to various microprocessor chips. Hall effect theory and applications also are included.

Linear Circuits Data Book - 1984 **792 Pages** **SLYD001**

Detailed specifications on operational amplifiers, voltage comparators, voltage regulators, data-acquisition devices, A/D converters, timers, switches, amplifiers, and special functions. Includes LinCMOS™ functions. Contains product guide, interchangeability guide, glossary and alphanumeric index.

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MOS Memory Data Book - 1986 — 804 Pages — SMYD006

Detailed specifications and application information on Dynamic RAMs (DRAMs). Single-In-Line Package (SIP) DRAM Modules, EPROMS and One-Time Programmable ROMs. Contains military specifications for the DRAM product line. Includes reference and selection guides, interchangeability guide, glossary and alphanumeric index. Also, a chapter containing ESD guidelines.

TMS7000 Family Data Manual - 1986 — 560 Pages — SND001B

Describes the architecture, the on-chip peripheral functions and the instruction set of the TMS7000 Family of NMOS and CMOS 8-bit microcomputers. Contains the assembly language user's guide, data sheets and application notes.

Optoelectronics Data Book - 1987 — 480 Pages — SOYD002

Detailed specifications on CCD image sensors, optocouplers/optoisolators, intelligent displays, and infrared-emitting diodes and phototransistors. Includes quality/reliability and applications notes, mechanical information on each device, alphanumeric index, reference guides, interchangeability guide, and glossary.

TMS7500/75C00 User's Guide - 1984 — 55 Pages — SPNU004

Describes the operation, interface and applications of the TMS7500/TMS75C00 Data Encryption devices, which operate as peripherals and perform the National Bureau of Standards (NBS) Data Encryption Standard algorithm.

TMS9914A GPIB Controller User's Guide - 1985 — 76 Pages — SPPU013

Tutorial guide bridging the gap between the microprocessor design engineer/programmer and other IEEE-488 and TMS9914A documentation. Includes a review of IEEE-488 GPIB functions and examples of the bus functions.

TMS34061 User's Guide - 1986 — 218 Pages — SPPU014A

A detailed description of the TMS34061 Video System Controller's architecture and specifications. Includes application solutions.

TMS34070 User's Guide - 1986 — 98 Pages — SPPU016A

Detailed description of the TMS34070 Color Palette's architecture and specifications. Includes application solutions.

Color Graphics Controller Board User's Guide - 1986 — 50 Pages — SPPU019A

Detailed description of the installation and operation of the PC-compatible TMS34061/34070 Color Graphics Controller Board. Includes theory of operation, how to program, PAL equations and schematics.

Digital Signal Processing with the TMS320 Family - 1986 — 724 Pages — SPRA012A

Twenty-four detailed application reports containing the theory, implementation and TMS320 source code for the application. Common DSP routines such as FIRs, IIRs AND FFTs are covered as well as telecom and computer specific applications such as echo cancellation, encryption, ADPCM, speed coding, DTMF, graphics, digital control and others.

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An application report that discusses the digital implementation of a modem using the TMS32010 Digital Signal Processor. Attention is focused on splitband modems — a class of modems that splits the bandwidth of the communications channel (telephone network) so that full-duplex operation can occur. This report describes the theory and implementation of the Bell 212A/V.22 recommendation, a 1200-BPS splitband modem.

TMS32010 Assembly Language Programmer's Guide - 1984 **184 Pages** **SPRU002B**

Includes general programming information, assembly instructions, assembler directives and assembler output.

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TMS320 2nd Generation User's Guide - 1987 **500 Pages** **SPRU014**

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TMS34010 Application Guide - 1987 **170 Pages** **SPVA007**

Describes five graphics system applications using the TMS34010. Subjects included are 512 × 512 and 1.024 × 768 pixel minimum chip solution, DRAM interfacing techniques, implementation of CGA, and approaches to EGA compatibility.

TMS34010 User's Guide - 1987 **600 Pages** **SPVU001**

Provides a detailed description of the TMS34010 Graphics System Processor. Topics include the TMS34010 architecture, memory organization, instruction set and specifications. This manual is indispensable for evaluating or designing with the TMS34010.

TMS34010 Software Development Board User's Guide - 1987 **224 Pages** **SPVU002**

Describes the installation and operation of the TMS34010 Software Development Board. The commands and syntax for the user interface debugger are discussed in detail.

TMS34010 Software Development Board Schematics - 1987 **10 Pages** **SPVU003**

A complete set of size A drawing schematics for the TMS34010 Software Development Board.

TMS34010 Assembly Language Tools User's Guide - 1987 **358 Pages** **SPVU004**

Describes the operation of the TMS34010 Assembler Package. Included are details of the macro-assembler, archiver, linker, ROM utility, and software simulator.

TMS34010 C Compiler User's Guide - 1987 **208 Pages** **SPVU005**

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2-μm CMOS Standard Cell Data Book - 1986 **800 Pages** **SRSD001**

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How to Use Surface Mount Technology - 1984 **112 Pages** **SSYZ001**

A technical summary that explains the new semiconductor assembly technology using surface-mounted components — what it is and how it is used. Covers Plastic Leaded Chip Carriers (PLCC), Leadless Ceramic Chip Carriers (LCCC) and Small-Outline Integrated Circuit (SOIC) packages; even discusses mixing surface-mounted components with DIP packages in the same assembly.

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Houston: Arrow (713) 530-4700;
Hall-Mark (713) 781-6100; Kierulff (713) 530-7030;
Marshall (713) 895-9200; Schweber (713) 784-3600;
Wyle (713) 879-9953.

UTAH: Arrow (801) 972-0404;
Hall-Mark (801) 972-1008; Kierulff (801) 973-6913;
Marshall (801) 485-1551; Wyle (801) 974-9953.

WASHINGTON: Arrow (206) 643-4800;
Kierulff (206) 575-4420; Wyle (206) 453-8300;
Marshall (206) 747-9100.

WISCONSIN: Arrow (414) 792-0150;
Hall-Mark (414) 797-7844; Kierulff (414) 784-8160;
Marshall (414) 797-8400; Schweber (414) 784-9020.

CANADA: Calgary: Future (403) 235-5325;
Edmonton: Future (403) 438-2858;
Montreal: Arrow Canada (514) 735-5511;
Future (514) 694-7710;
Ottawa: Arrow Canada (613) 226-6903;
Future (613) 820-8313;
Quebec City: Arrow Canada (418) 687-4231;
Toronto: Arrow Canada (416) 672-7769;
Future (416) 638-4771;
Vancouver: Future (604) 294-1166;
Winnipeg: Future (204) 339-0554.

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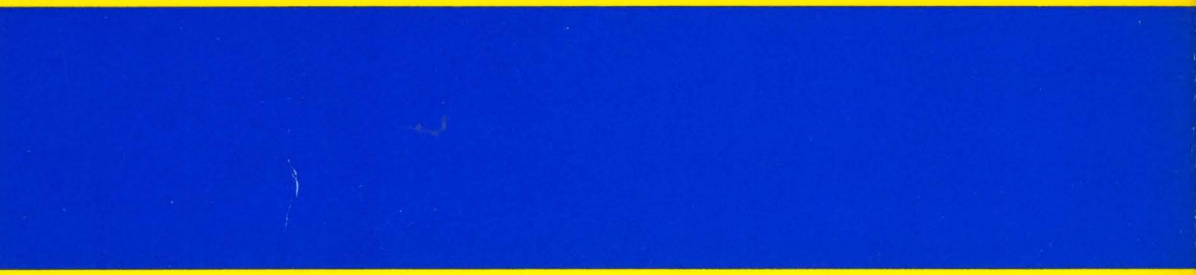

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