# ANALOG DEVICES DC2784B-A Series Evaluation Board Instruction Manual

Contents



**DEMO MANUAL**
**DC2784B-A**

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**LTM4700**
**High Current, PolyPhase® Step-Down Power µModule Supply with Digital Power System Management 2 × LTM4700, 200A**

**DESCRIPTION**

Demonstration circuit 2784B-A is a high efficiency, high density, µModule® regulator with 4.5V to 16V input range. The output voltage is adjustable from 0.5V to 1.8V and it can supply 200A maximum load current. The demo board has two LTM®4700 µModule regulators, which is a dual 50A or single 100A step-down regulator with digital power system management. See LTM4700 data sheet for more detailed information.

The DC2784B-A powers up to default settings and produces power based on configuration resistors without the need for any serial bus communication. This allows easy evaluation of the DC/DC converter. To fully explore the extensive power system management features of the part, download the graphical user interface (GUI) software LTpowerPlay® onto your PC and use Analog Devices I²C/SMBus/PMBus dongle DC1613A to connect to the board. The LTpowerPlay allows the user to reconfigure the part on-the-fly and store the configuration in EEPROM, view telemetry of voltage, current, temperature, and fault status.

GUI Download

The software can be downloaded from **LTpowerPlay**.

For more details and instructions of LTpowerPlay, please refer to LTpowerPlay GUI for LTM4700 Quick Start Guide.

**Design files for this circuit board are available.**

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**BOARD PHOTO**

Part marking is either ink mark or laser mark


**Figure 1. 2 × LTM4700; 200A DC2784B-A Demo Circuit**

**PERFORMANCE SUMMARY**

**Specifications are at $T_A$ = 25°C**

| PARAMETER | CONDITIONS | MIN | TYP | MAX | VALUE |
|---|---|---|---|---|---|
| Input Voltage Range | | 4.5 | | 16 | V |
| Output Voltage, $V_{OUT}$ | $V_{IN}$ = 4.5V to 16V, $I_{OUT}$ = 0A to 200A | 0.5 | 1.0 | 1.8 | V |
| Maximum Output Current, $I_{OUT}$ | $V_{IN}$ = 4.5V to 16V, $V_{OUT}$ = 0.5V to 1.8V | 200 | | | A |
| Typical Efficiency | $V_{IN}$ = 12V, $V_{OUT}$ = 1.0V, $I_{OUT}$ = 200A | 88.7 (See Figure 5) | | | % |
| Default Switching Frequency | | 350 | | | kHz |

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**QUICK START PROCEDURE**

**Table 1. LTM4700 Demo Boards for Up to 400A Point-of-Load Regulation**

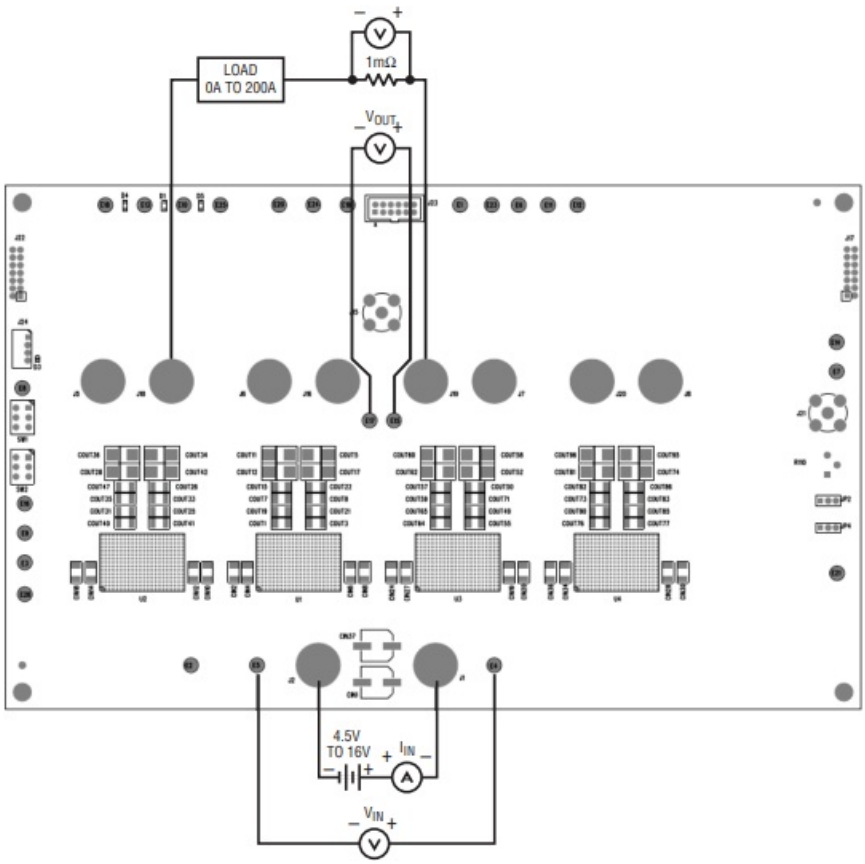
| MAXIMUM OUTPUT CURRENT | NUMBER OF OUTPUTS | NUMBER OF LTM4700 µModule REGULATORS ON THE BOARD | DEMO BOARD NUMBER |
|---|---|---|---|
| 50A | 2 | 1 | DC2702A-A |
| 100A | 1 | 1 | DC2702A-B |
| 200A | 1 | 2 | DC2784B-A |
| 300A | 1 | 3 | DC2784B-B |
| 400A | 1 | 4 | DC2784B-C |

Demonstration circuit 2784B-A is easy to set up to evaluate the performance of the LTM4700EY. Refer to Figure 2 for the proper measurement equipment setup and follow the procedure below.

1. With power off, connect the input power supply to VIN (4.5V to 16V) and GND (input return).
2. Connect the 1.0V output load between VOUT and GND (initial load: no load).
3. Connect the DVMs to the input and outputs. Set default jumper position: JP1: ON; JP2: ON; JP3: ON.
4. Turn on the input power supply and check for the proper output voltages. VOUT should be 1.0V ±0.5%.
5. Once the proper output voltages are established, adjust the loads within the operating range and observe the output voltage regulation, ripple voltage and other parameters.
6. Connect the dongle and control the output voltages from the GUI. See “LTpowerPlay GUI for the LTM4700 Quick Start Guide” for details.

NOTE: Internal bias circuit is enabled when VIN > 7V and JP3 is ON.

NOTE: When measuring the output or input voltage ripple, do not use the long ground lead on the oscilloscope probe. See Figure 3 for the proper scope probe technique. Short, stiff leads need to be soldered to the (+) and (–) terminals of an output capacitor. The probe’s ground ring needs to touch the (–) lead and the probe tip needs to touch the (+) lead.




DC2784BA F02

**Figure 2. Proper Measurement Equipment Setup**

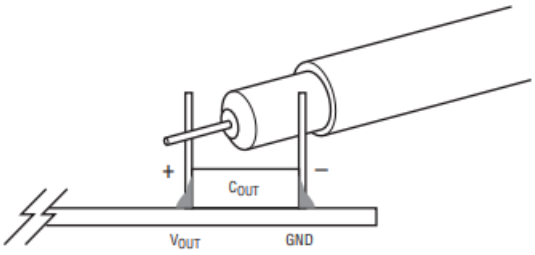
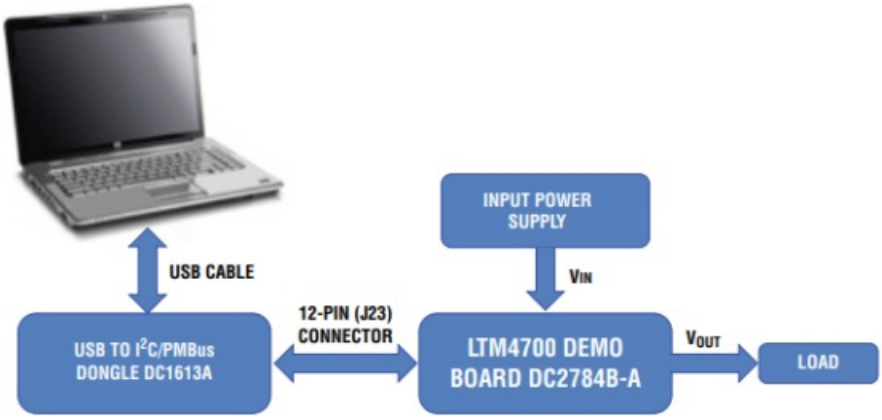



**Figure 3. Measuring Output Voltage Ripple**

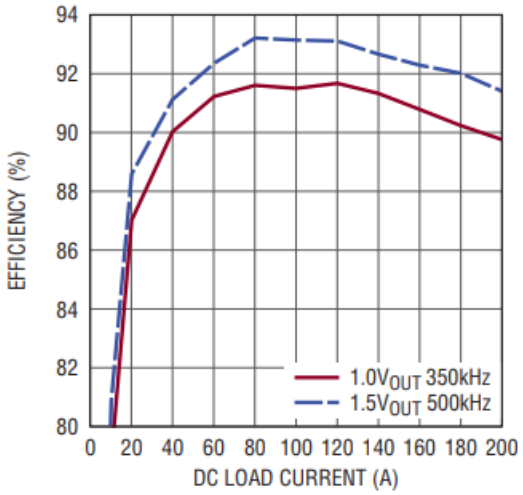
Connecting a PC to DC2784B-A

You can use a PC to reconfigure the power management features of the LTM4700 such as: nominal $V_{OUT}$, margin set points, OV/UV limits, temperature fault limits, sequencing parameters, the fault log, fault responses, GPIOs and other functionalities. The DC1613A dongle may be plugged when $V_{IN}$ is present.



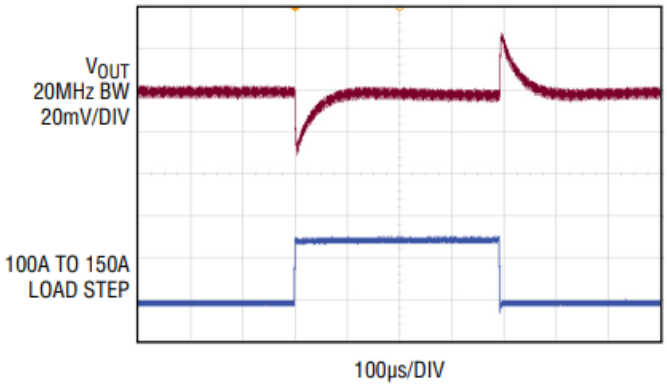

DC2784BA F04

**Figure 4. Demo Setup with PC**



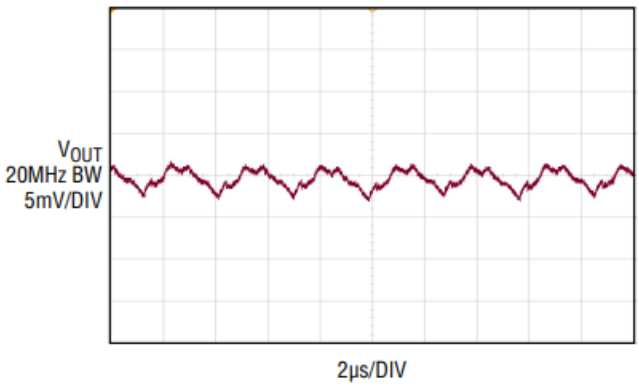

DC2784BA F05

**Figure 5. Efficiency vs Load Current at $V_{IN}$ = 12V (RUNP is ON)**




DC2784BA F06

**Figure 6. Output Voltage vs Load Current at $V_{IN}$ = 12V, $V_{OUT}$ = 1.0V**




DC2784BA F07

**Figure 7. Output Voltage Ripple at $V_{IN}$ = 12V, VOUT = 1.0V, $I_{OUT}$ = 200A**

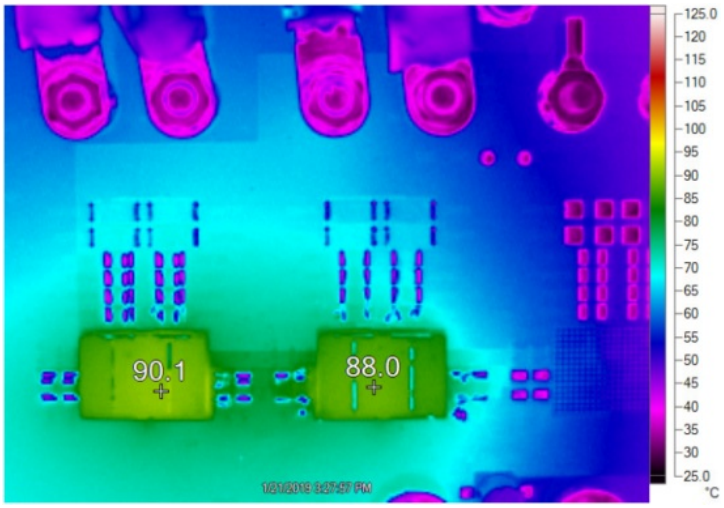



**Figure 8. Thermal at $V_{IN}$ = 12V, $V_{OUT}$ = 1.0V, $I_{OUT}$ = 140A, $T_A$ = 25°C, No Airflow**

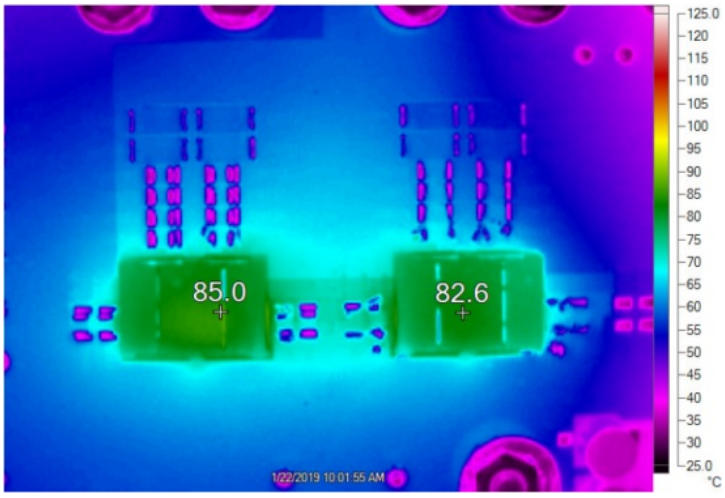



**Figure 9. Thermal at $V_{IN}$ = 12V, $V_{OUT}$ = 1.0V, $I_{OUT}$ = 200A, $T_A$ = 25°C, 400LFM Airflow**

LTpowerPlay SOFTWARE GUI

The LTpowerPlay is a powerful Windows-based development environment that supports Analog Devices power system management ICs and µModules, including the LTM4675, LTM4676, LTM4677, LTM4678, LTC3880, LTC3882 and LTC3883. The software supports a variety of different tasks. You can use LTpowerPlay to evaluate Analog Devices ICs by connecting to a demo board system. LTpowerPlay can also be used in an offline mode

(with no hardware present) in order to build a multichip configuration file that can be saved and reloaded at a later time. LTpowerPlay provides unprecedented diagnostic and debug features. It becomes a valuable diagnostic tool during board bring-up to program or tweak the power management scheme in a system, or to diagnose power issues when bringing up rails. LTpowerPlay utilizes the DC1613A USB-to-SMBus controller to communicate with one of many potential targets, including the LTM4675, LTM4676, LTM4677, LTM4678, LTC3880, LTC3882, LTC3883's demo system, or a customer board. The software also provides an automatic update feature to keep the software current with the latest set of device drivers and documentation. The LTpowerPlay software can be downloaded from **LTpowerPlay**.

To access technical support documents for Analog Devices Digital Power Products visit the LTpowerPlay Help menu. Online help also available through the LTpowerPlay.

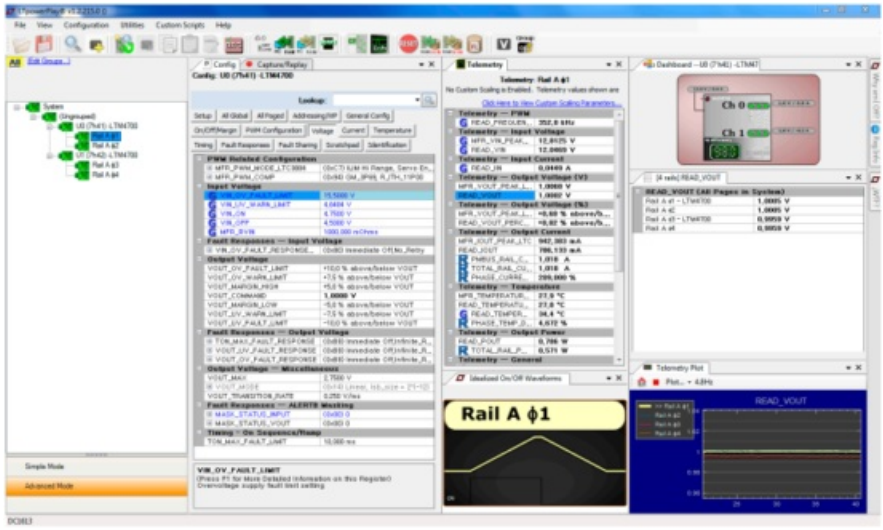


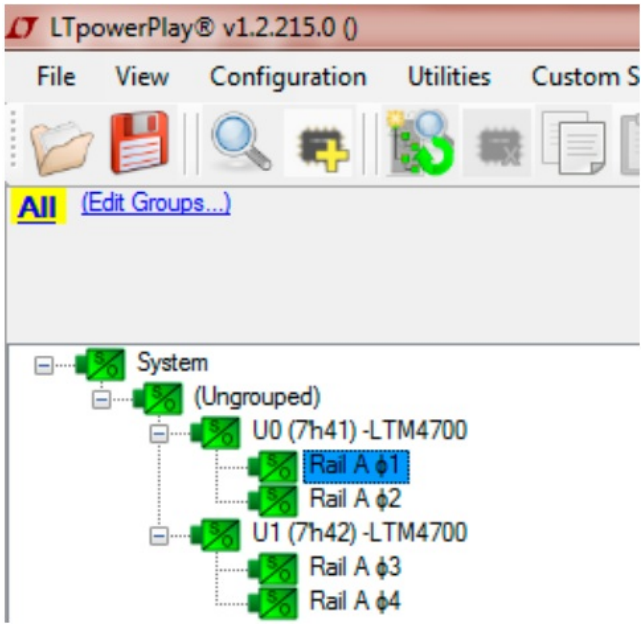

**Figure 10. LTpowerPlay Main Interface**

**LTpowerPlay QUICK START PROCEDURE**

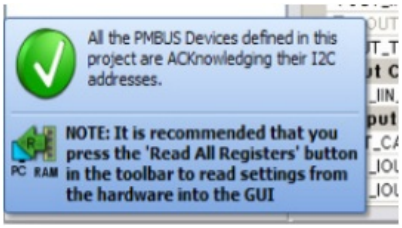
The following procedure describes how to use LTpowerPlay to monitor and change the settings of LTM4700.

1. Download and install the LTpowerPlay GUI: LTpowerPlay
2. Launch the LTpowerPlay GUI.

   a. The GUI should automatically identify the DC2784B-A. The system tree on the left hand side should look like this:

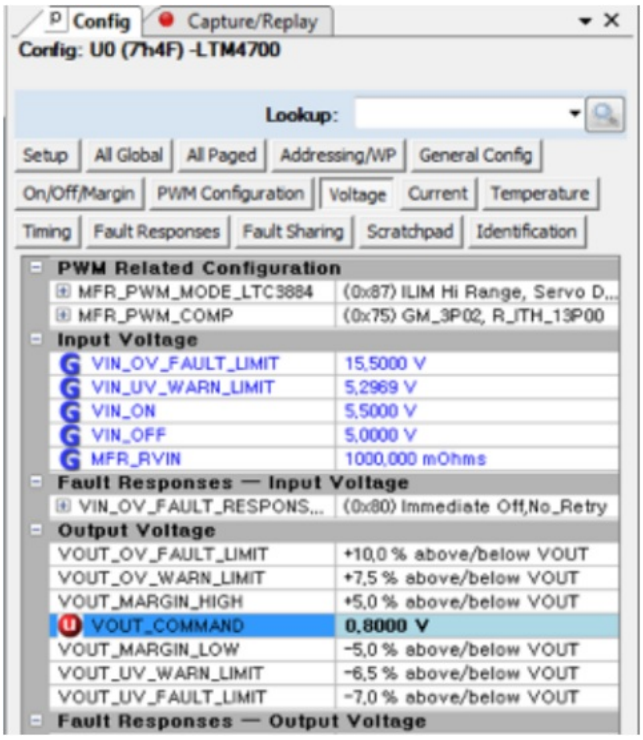



b. A green message box shows for a few seconds in the lower left hand corner, confirming that LTM4700 is communicating:



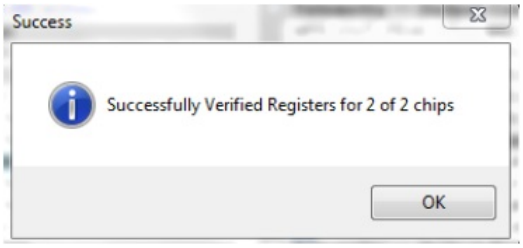

c. In the Toolbar, click the “R” (RAM to PC) icon to read the RAM from the LTM4700. This reads the configuration from the RAM of LTM4700 and loads it into the GUI.


d. If you want to change the output voltage to a different value, like 0.8V. In the Config tab, type in 0.8 in the VOUT_COMMAND box, like this:




Then, click the “W” (PC to RAM) icon to write these register values to the LTM4700. After finishing this step, you will see the output voltage will change to 0.8V.

If the write is successful, you will see the following message:




e. You can save the changes into the NVM. In the tool bar, click “RAM to NVM” button, as following

f. Save the demo board configuration to a (*.proj) file.

Click the Save icon and save the file. Name it what-ever you want.

**PARTS LIST**

| ITEM | QTY | REFERENCE | PART DESCRIPTION | MANUFACTURER/PART NUMBER |
|---|---|---|---|---|
| **Required Circuit Components** | | | | |
| 1 | 4 | CIN1, CIN16, CIN37, CIN38 | CAP., 180µF, ALUM. POLY., 25V, 20%, 8mm × 12mm SMD, E12 | PANASONIC, 25SVPF180M |
| 2 | 16 | CIN-CIN15, CIN17, CIN18 | CAP., 22µF X6S 25V 10% 1210; | MURATA, GRM32EC81E226KE15L |
| 3 | 38 | COUT1-COUT3, COUT6-COUT8, COUT14- COUT16, COUT18-COUT27, COUT29-COUT33, COUT35, COUT37, COUT40, COUT41, COUT43, COUT46, COUT47, COUT93, COUT97-COUT102 | CAP., 100µF X6S 6.3V 20%1210 | MURATA, GRM32EC80J107ME20L |
| 4 | 16 | COUT4, COUT5, COUT9-COUT13, COUT17, COUT28, COUT34, COUT36, COUT38, COUT39, COUT42, COUT44, COUT45, | CAP., 470µF, ALUM POLY, 2.5V, 20% SMD D3L | PANASONIC, EEF-GX0E471R |
| 5 | 1 | C15 | CAP., X7R, 0.015µF, 25V, 5%, 0603 | AVX, 06033C153JAT2A |
| 6 | 3 | C28, C73, C74 | CAP., X7R, 0.01µF, 25V, 5%, 0603 | AVX, 06033C103JAT2A |
| 7 | 4 | C33, C35, C45, C57 | CAP., X6S, 22µF, 6.3V, 20%, 0603 | MURATA, GRM188C80J226ME15D |
| 8 | 1 | C64 | CAP., X5R, 4.7µF, 16V, 10%, 0603 | TDK, C1608X5R1C475K080AC |

| | | | | |
|---|---|---|---|---|
| 9 | 2 | C65, C68 | CAP., X7R, 1µF, 25 V, 10%, 1206 | KEMET, C1206 C105K3RACTU |
| 10 | 1 | C66 | CAP., X7R, 0.22µF, 16V, 10%, 0805 | TDK, C2012X7R1C224K |
| 11 | 1 | C67 | CAP., X5R, 0.1µF, 16V, 10%, 1206 | AVX, 1206YD104KAT2A |
| 12 | 1 | C69 | CAP., X7R, 1800pF, 25V, 5%, 0603 | AVX, 06033C182JAT2A |
| 13 | 1 | C70 | CAP., X7R, 1µF, 25 V, 10%, 0805 | AVX, 08053C105KAT2A |
| 14 | 1 | C71 | CAP., X5R, 0.1µF, 16V, 10%, 0603 | AVX, 0603YD104KAT2A |
| 15 | 1 | D1 | LED, SUPER RED, WATERCLEAR, 0603 | WURTH ELEKTRONIK, 150060SS75000 |
| 16 | 1 | D3 | DIODE SCHOTTKY 20V 500MA SOD882 | NXP, PMEG2005AEL |
| 17 | 2 | D4, D5 | LED, GREEN, WATERCLEAR, 0603 | WURTH ELEKTRONIK, 150060GS75000 |
| 18 | 1 | Q1 | XSTR., MOSFET, P-CH, 20V, 5.9A, TO-236 (SOT-23) | VISHAY, Si2365EDS-T1-GE3 |
| 19 | 2 | Q2, Q3 | MOSFET N-CHANNEL 30V 90A TO252 | TAIWAN SEMICONDUCTOR CORPORATION, TSM040N03CPROG |
| 20 | 1 | Q4 | XSTR., MOSFET, P-CH, 30V, 3.5A, SOT-23, AEC-Q101 | DIODES INC., DMP3130L-7 |
| 21 | 2 | Q5, Q6 | XSTR., MOSFET, N-CH, 60V, 300mA, SOT-23 | FAIRCHILD SEMI., 2N7002K |
| 22 | 15 | R10-R15, R18, R24, R94, R106, R116, R126, R142, R154, R210 | RES., 10k, 5%, 1/10W, 0603 | VISHAY, CRCW060310K0JNEA |
| 23 | 5 | R25, R32, R70, R125, R237 | RES., 10Ω, 1%, 1/10W, 0603 | VISHAY, CRCW060310R0FKEA |
| 24 | 1 | R26 | RES., 787Ω, 1%, 1/10W, 0603 | VISHAY, CRCW0603787RFKEA |
| 25 | 1 | R86 | RES., 127Ω, 1%, 1/10W, 0603 | VISHAY, CRCW0603127RFKEA |

| | | | | |
|---|---|---|---|---|
| 26 | 4 | R90, R108, R133, R159 | RES., 0.001Ω, 2W, 1%, 2512, SENSE, AEC-Q200 | BOURNS INC., CRF-2512-FZ-R001ELF |
| 27 | 1 | R110 | RES., 5k, 10%, 1/2 W, THT 3/8″ SQUARE, SINGLE TURN, TOP ADJ., TRIMPOT | BOURNS, 3386P-1-502-LF |
| 28 | 2 | R111, R115 | RES., 20k, 5%, 1/10W, 0603, AEC-Q200 | VISHAY, CRCW060320K0JNEA |
| 29 | 1 | R113 | RES., 1.65k, 1%, 1/10W, 0603, AEC-Q200 | VISHAY, CRCW06031K65FKEA |
| 30 | 2 | R118, R232 | RES., 0.003Ω 1% 1/2W 2010 | VISHAY, WSL20103L000FEA |
| 31 | 1 | R123 | RES., 1M, 5%, 1/10W, 0603, AEC-Q200 | VISHAY, CRCW06031M00JNEA |
| 32 | 2 | R124, R224 | RES., 200Ω, 1%, 1/10W, 0603 | VISHAY, CRCW0603200RFKEA |
| 33 | 1 | R137 | RES., 2.43k, 1%, 1/10W, 0603, AEC-Q200 | VISHAY, CRCW06032K43FKEA |
| 34 | 1 | R148 | RES., 3.24k, 1%, 1/10W, 0603, AEC-Q200 | VISHAY, CRCW06033K24FKEA |
| 35 | 1 | R203 | RES., 681k, 1%, 1/10W, 0603 | VISHAY, CRCW0603681KFKEA |
| 36 | 1 | R204 | RES., 3.3Ω, 1%, 1/10W, 0603, AEC-Q200 | VISHAY, CRCW06033R30FKEA |
| 37 | 1 | R205 | RES., 82.5Ω, 1%, 1/10W, 0603, AEC-Q200 | VISHAY, CRCW060382R5FKEA |
| 38 | 2 | R213, R223 | RES., 4.99k, 1%, 1/10W, 0603, AEC-Q200 | VISHAY, CRCW06034K99FKEA |
| 39 | 1 | R220 | RES., 15.8k, 1%, 1/10W, 0603, AEC-Q200 | VISHAY, CRCW060315K8FKEA |
| 40 | 1 | R229 | RES., 100k, 1%, 1/10W, 0603, AEC-Q200 | VISHAY, CRCW0603100KFKEA |
| 41 | 1 | R233 | RES., 100Ω, 1%, 1W, 0603, AEC-Q200 | VISHAY, CRCW0603100RFKEA |

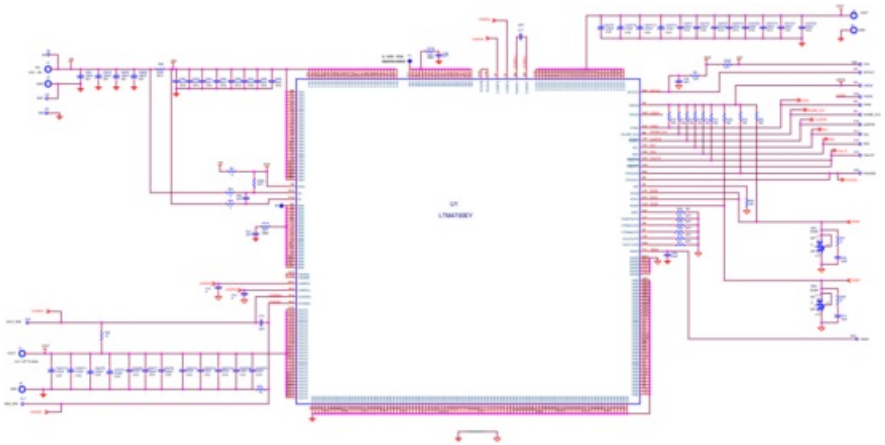
| | | | | |
|---|---|---|---|---|
| 42 | 1 | R234 | RES., 1.4k, 1%, 1/10W, 0603, AEC-Q200 | VISHAY, CRCW06031K40FKEA |
| 43 | 1 | R235 | RES., 154k, 5%, 1/10W, 0603, AEC-Q200 | VISHAY, CRCW0603154KJNEA |
| 44 | 1 | R236 | RES., 2Ω, 1%, 1/10W, 0603, AEC-Q200 | VISHAY, CRCW06032R00FKEA |
| 45 | 2 | SW1, SW2 | SWITCH, SUBMINIATURE SLIDE | C&K COMPONENTS, JS202011CQN |
| 46 | 2 | U1, U2 | IC, LTM4700EY | ANALOG DEVICES, LTM4700EY#PBF |
| 47 | 1 | U5 | IC, MEMORY, EEPROM, 2kb (256×8), TSSOP-8, 400kHz | MICROCHIP, 24LC025-I/ST |
| 48 | 1 | U6 | IC, µPWR LDO REG W/SHUTDOWN, SO-8 | ANALOG DEVICES, LT1129CS8-5#PBF |
| 49 | 1 | U7 | IC, TIMERBLOX: VOLTAGE-CTRL. PWM, TSOT23-6 | ANALOG DEVICES, LTC6992CS6-1#PBF |
| 50 | 1 | U8 | IC, SINGLE 100V, 85MHz, OP AMP, TSOT-23-5 | ANALOG DEVICES, LT1803IS5#PBF |
| **Additional Demo Board Circuit Components** | | | | |
| 1 | 0 | C14, C16, C17, C29, C31, C32, C34, C36, C40- C44, C46-C56, C58, | CAP., OPTION 0603 | OPTION |
| 2 | 0 | COUT48-COUT51, COUT53-COUT57, COUT59, COUT61, COUT64, COUT65, COUT67, COUT70-COUT73, COUT76, COUT77, COUT79, COUT82-COUT87, COUT89, COUT90-COUT92, COUT94, CIN19-CIN24, CIN26-CIN32, CIN34-CIN36 | CAP., OPT, 1210 | OPT |
| 3 | 0 | COUT52, COUT58, COUT60, COUT62, COUT63, COUT66, COUT68, COUT69, COUT74, COUT75, COUT78, COUT80, COUT81, COUT88, COUT95, COUT96, | OPT, D3L | OPTION |
| 4 | 0 | D2 | DIODE, OPTION, SOD-323 | OPTION |
| 5 | 0 | R8, R27-R31, R109, R117, R120, R121, R127, R130, R134, R138-R140, R144, R145, R150-R152, R155, R157, R160, R208, R216, R218, R219, R221, R226, R238-R245 | RES., OPTION, 0603 | OPTION |
| 6 | 17 | R9, R91, R92, R112, R114, R132, R135, R136, R146, R147, R149, R158, R202, R211, R215, R222, R227 | RES., 0Ω, 1/10W, 0603 | VISHAY, CRCW06030000Z0EA |
| 7 | 0 | R104, R105, R122, R128, R141, R143, R153, R156 | RES., OPTION, 0805 | OPTION |

| | | | | |
|---|---|---|---|---|
| 8 | 0 | R217 | RES., OPTION, 1206 | OPTION |
| 9 | 0 | R230, R231 | RES., OPTION, 2512 | OPTION |
| 10 | 0 | U3, U4 | IC, OPT | OPT |
| **Hardware: For Demo Board Only** | | | | |
| 1 | 25 | E1-E21, E23-E26 | TEST POINT, TURRET, 0.064″, MTG. HOLE | MILL-MAX, 2308-2-00-80-00-00-07-0 |
| 2 | 2 | JP2, JP4 | CONN., HEADER, 1×3, 2mm | WURTH ELEKTRONIK, 62000311121 |
| 3 | 2 | XJP2, XJP4 | CONN., SHUNT, FEMALE, 2 POS, 2 mm | WURTH ELEKTRONIK, 60800213421 |
| 4 | 10 | J1, J2, J5-J8, J16, J18-J20 | STUD, FASTENER, #10-32 | PENNENGINEERING, KFH-032-10ET |
| 5 | 20 | J1, J2, J5-J8, J16, J18-J20 (×2) | NUT, HEX, STEEL, ZINC PLATE, 10-32 | KEYSTONE, 4705 |
| 6 | 10 | J1, J2, J5,-J8, J16, J18-J20 | RING, LUG, CRIMP, #10, NON-INSULATED, SOLDERLESS TERMINALS | KEYSTONE, 8205 |
| 7 | 10 | J1, J2, J5-J8, J16, J18-J20 | WASHER, FLAT, STEEL, ZINC PLATE, OD: 0.436 [11.1] | KEYSTONE, 4703 |
| 8 | 2 | J15, J21 | CONN., RF, BNC, RCPT, THT, STR, 5-PIN | AMPHENOL CONNEX, 112404 |
| 9 | 1 | J17 | CONN., HDR, MALE, 2×7, 2mm, R/A THT | MOLEX, 87760-1416 |
| 10 | 1 | J22 | CONN., HDR, FEMALE, 2×7, 2mm, R/A THT | SULLINS CON., NPPN072FJFN-RC |
| 11 | 1 | J23 | CONN., HDR, SHROUDED, 2×6, 2mm, THT, VERT | FCI, 98414-G06-12ULF |
| 12 | 1 | J24 | CONN., HDR, SHROUDED, 1×4, 2mm, R/A THT STR | HIROSE ELECTRIC CO., LTD., DF3A-4P-2DSA |

| | | | | |
|---|---|---|---|---|
| 13 | 4 | MH1-MH4 | STANDOFF, NYLON, SNAP-ON, 0.50″ | WURTH ELEKTRONIK, 702935000 |

**SCHEMATIC DIAGRAM**

| REVISION HISTORY | | | | |
|---|---|---|---|---|
| **ECO** | **REV** | **DESCRIPTION** | **APPROVED** | **DATE** |
| **—** | **1** | **PRODUCTION** | **SG** | **07-26-2021** |



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| ASSY | U3 | U4 | C14 | C15 | COUT61, COUT59, COUT57, COUT70, COUT71, COUT72, COUT50, COUT56 COUT64, COUT67, COUT65, COUT55, COUT54, COUT53, COUT51, COUT49 | COUT73, COUT94, COUT92, COUT82, COUT83, COUT84, COUT86, COUT48 COUT76, COUT77, COUT79, COUT89, COUT91, COUT90, COUT85, COUT87 | CIN19, CIN20, CIN21, CIN22, CIN23, CIN24, CIN26, CIN27 | CIN28, CIN29, CIN30, CIN31, CIN32, CIN34, CIN35, CIN36 | COUT52, COUT58, COUT60, COUT62, COUT63, COUT66, COUT68, COUT69 | COUT74, COUT75, COUT78, COUT80, COUT81, COUT88, COUT95, COUT96 |
|---|---|---|---|---|---|---|---|---|---|---|
| -A | OPT | OPT | OPT | 15nF | OPT | OPT | OPT | OPT | OPT | OPT |
| -B | LTM4700 | OPT | OPT | 22nF | 100uF | OPT | 22uF | OPT | 470uF | OPT |
| -C | LTM4700 | LTM4700 | 560pF | 10nF | 100uF | 100uF | 22uF | 22uF | 470uF | 470uF |

NOTE: UNLESS OTHERWISE SPECIFIED

1. ALL RESISTORS AND CAP ARE 0603.
2. WHEN VIN < 5.75V, CHANGE R8,R109,R134,R160 = 0 OHM

| | APPROVALS | |
|---|---|---|
| | PCB DES. LT | ANALOG DEVICES |
| | APP ENG. SG | |
| | | TITLE: SCH |

**CUSTOMER NOTICE**

**ANALOG DEVICES HAS MADE A BEST EFFORT TO DESIGN A CIRCUIT THAT MEETS CUSTOMER-SUPPLIED SPECIFICATIONS; HOWEVER, IT REMAINS THE CUSTOMER'S RESPONSIBILITY TO VERIFY PROPER AND RELIABLE OPERATION IN THE ACTUAL APPLICATION. COMPONENT SUBSTITUTION AND PRINTED CIRCUIT BOARD LAYOUT MAY SIGNIFICANTLY AFFECT CIRCUIT PERFORMANCE OR RELIABILITY. CONTACT ANALOG DEVICES APPLICATIONS ENGINEERING FOR ASSISTANCE.**

**EMATIC**

**HIGH CURRENT POLYPHASE STEP-DOWN POWER uMODULE SUPPLY WITH DIGITAL POWER MANAGEMENT**

**IC NO. LTM4700EY**

**SKU NO. DC2784B(A,B,C)**

**SCHEMATIC NO. AND REVISION:**

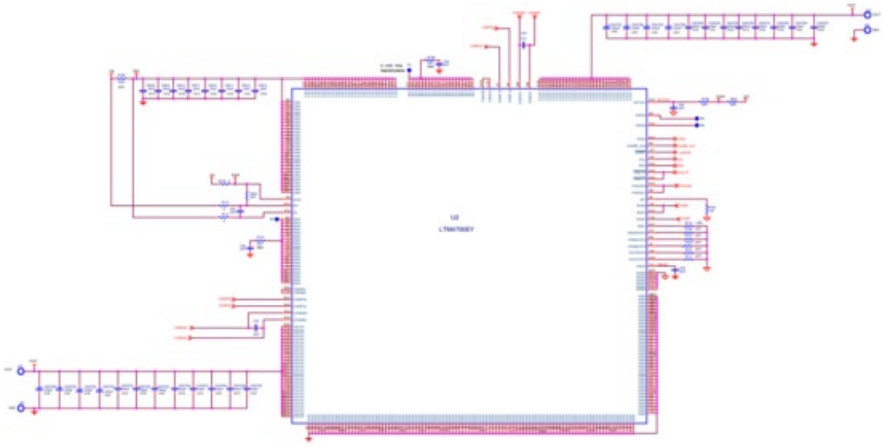
**710-DC2784B(A,B,C)_REV01**

**THIS CIRCUIT IS PROPRIETARY TO ANALOG DEVICES AND SUPPLIED FOR USE WITH ANALOG DEVICES PARTS.**

**SIZE:** N/A

**DATE:** Monday, July 26, 2021

**SHEET** 1 **OF** 6



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| APPROVALS | |
|---|---|
| PCBDES. | LT |
| APPENG. | SG |

ANALOG DEVICES

**TITLE: SCHEMATIC**

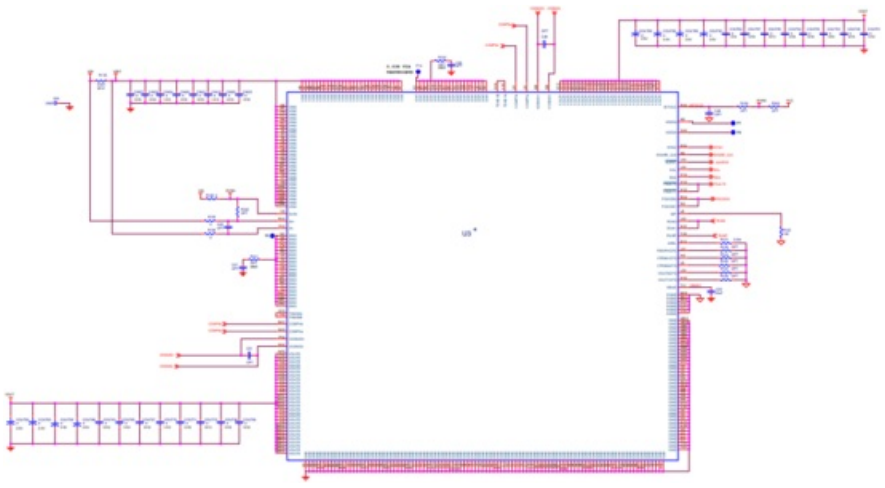
**HIGH CURRENT POLYPHASE STEP-DOWN POWER uMODULE SUPPLY WITH DIGITAL POWER MANAGEMENT**

**IC NO**

**SCHEMATIC NO.**

**AN**

| | | | | | |
|---|---|---|---|---|---|
| | | | . LTM 4700EY<br><br>SKU NO. DC2784B(A,B,C) | | D REVISION:<br><br>710-DC2784B(A,B,C)_REV01 |
| **THIS CIRCUIT IS PROPRIETARY TO ANALOG DEVICES AND SUPPLIED FOR USE WITH ANALOG DEVICES PARTS.** | | | **SIZE:** N/A | **DATE:** Monday, July 26, 2021 | **SHEET** 2 **OF** 6 |



| | | |
|---|---|---|
| | **APPROVALS** | |
| | | |

**CUSTOMER NOTICE**

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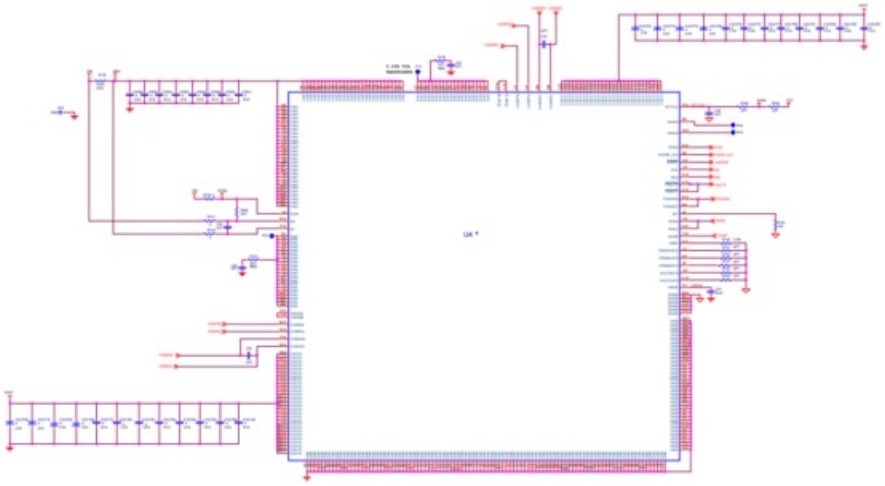
| | | |
|---|---|---|
| PCBDES. | LT | ANALOG DEVICES |
| APPENG. | SG | |
| | | TITLE: SCHEMATIC<br><br>HIGH CURRENT POLYPHASE STEP-DOWN POWER uMODULE SUPPLY WITH DIGITAL POWER MANAGEMENT |
| | | IC NO. LTM4700EY<br><br>SKU NO. DC2784B(A,B,C) |
| | | SCHEMATIC NO. AND REVISION:<br><br>710-DC2784B(A,B,C)_REV01 |

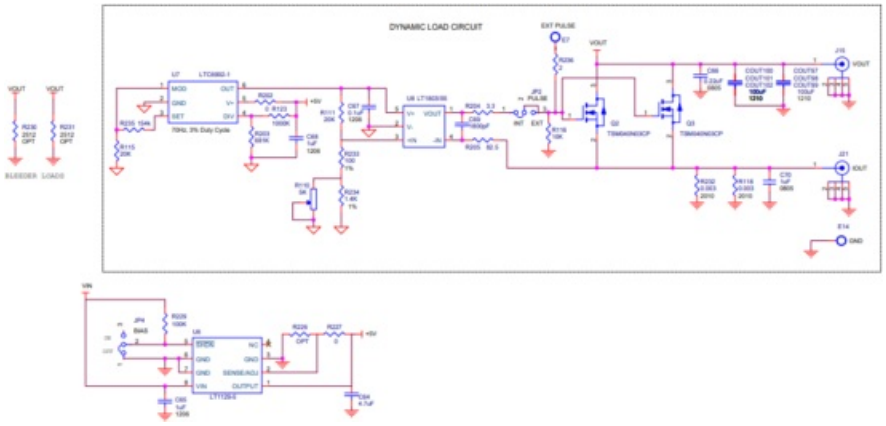
| | | | | | |
|---|---|---|---|---|---|
| **THIS CIRCUIT IS PROPRIETARY TO ANALOG DEVICES AND SUPPLIED FOR USE WITH ANALOG DEVICES PARTS.** | | | **SIZE:** N/A | **DATE:** Monday, July 26, 2021 | **SHEET** 3 **OF** 6 |



| | | | |
|---|---|---|---|
| **CUSTOMER NOTICE** | **APPROVALS** | | ANALOG DEVICES |
| | **PCB DES.** | **LT** | |
| | **APP ENG.** | **SG** | |
| | | | **TITLE: SCHEMATIC**<br>**HIGH CURRENT POLYP** |

| | | | | | |
|---|---|---|---|---|---|
| **ANALOG DEVICES HAS MADE A BEST EFFORT TO DESIGN A CIRCUIT THAT MEETS CUSTOMER-SUPPLIED SPECIFICATIONS; HOWEVER, IT REMAINS THE CUSTOMER'S RESPONSIBILITY TO VERIFY PROPER AND RELIABLE OPERATION IN THE ACTUAL APPLICATION. COMPONENT SUBSTITUTION AND PRINTED CIRCUIT BOARD LAYOUT MAY SIGNIFICANTLY AFFECT CIRCUIT PERFORMANCE OR RELIABILITY. CONTACT ANALOG DEVICES APPLICATIONS ENGINEERING FOR ASSISTANCE.** | | | **HASE STEP-DOWN POWER uMODULE SUPPLY WITH DIGITAL POWER MANAGEMENT** | | |
| | | | **IC NO. LTM4700EY**<br>**SKU NO. DC2784B(A,B,C)** | | **SCHEMATIC NO. AND REVISION:**<br>**710-DC2784B(A,B,C)_REV01** |
| **THIS CIRCUIT IS PROPRIETARY TO ANALOG DEVICES AND SUPPLIED FOR USE WITH ANALOG DEVICES PARTS.** | | | **SIZE: N/A** | **DATE:** Monday, July 26, 2021 | **SHEET** 4 **OF** 6 |

ALL PARTS ON THIS PAGE ARE FOR DEMO ONLY, NOT NEEDED IN CUSTOMER DESIGN



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| APPROVALS | |
|---|---|
| PCB DES. | LT |
| APP ENG. | SG |

ANALOG DEVICES

**TITLE: SCHEMATIC**

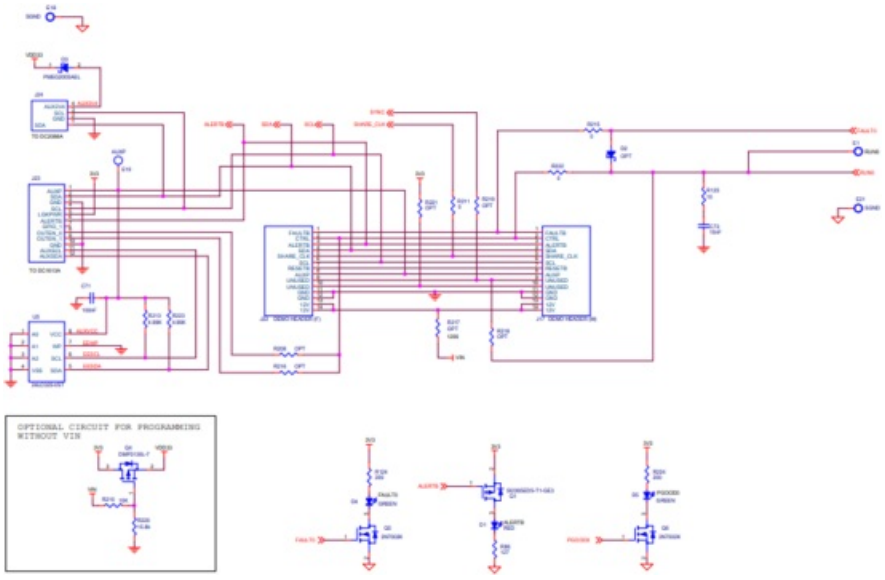
**HIGH CURRENT POLYPHASE STEP-DOWN POWER uMODULE SUPPLY WITH DIGITAL POWER MANAGEMENT**

**IC NO**

**SCHEMATIC NO. AN**

| | | | | | |
|---|---|---|---|---|---|
| | | | . LTM 4700EY<br><br>SKU NO. DC2784B(A,B,C) | | D REVISION:<br><br>710-DC2784B(A,B,C)_REV01 |
| **THIS CIRCUIT IS PROPRIETARY TO ANALOG DEVICES AND SUPPLIED FOR USE WITH ANALOG DEVICES PARTS.** | | | **SIZE:** N/A | **DATE:** Monday, July 26, 2021 | **SHEET** 5 **OF** 6 |

ALL PARTS ON THIS PAGE ARE FOR DEMO ONLY, NOT NEEDED IN CUSTOMER DESIGN




| | | |
|---|---|---|
| | **APPROVALS** | |

| | | | |
|---|---|---|---|
| PCBDES. | LT | ANALOG DEVICES | |
| APPENG. | SG | | |
| | | TITLE: SCHEMATIC<br>HIGH CURRENT POLYPHASE STEP-DOWN POWER uMODULE SUPPLY WITH DIGITAL POWER MANAGEMENT | |
| | | IC NO. LTM4700EY<br>SKU NO. DC2784B(A,B,C) | SCHEMATIC NO. AND REVISION:<br>710-DC2784B(A,B,C)_REV01 |

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**REVISION HISTORY**

| REV | DATE | DESCRIPTION | PAGE NUMBER |
|---|---|---|---|
| 0 | 10/24 | Initial Release. | — |

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**ESD Caution**
**ESD (electrostatic discharge) sensitive device.** Charged devices and circuit boards can discharge without detection. Although this product features patented or proprietary protection circuitry, damage may occur on devices subjected to high energy ESD. Therefore, proper ESD precautions should be taken to avoid performance degradation or loss of functionality.

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Rev. 0

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10/24
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## Documents / Resources

| | |
|---|---|
|  | ANALOG DEVICES DC2784B-A Series Evaluation Board [pdf] Instruction Manual<br>DC2784B-A, DC2702A-A, DC2702A-B, DC2784B-B, DC2784B-C, DC2784B-A Series Evaluation Board, DC2784B-A Series, Evaluation Board, Board |

## References

- User Manual