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ROXIFETA ST62T10C6

ST62T10C6 Microcontroller User Manual

Model: ST62T10C6 | Brand: ROXIFETA

1. INTRODUCTION

The ST62T10C6 is an 8-bit microcontroller from the ST62xx family, featuring an OTPROM (One-Time Programmable Read-Only Memory) for program storage. It is designed for a wide range of embedded control applications, offering a balance of performance and cost-effectiveness. This manual provides essential information for the proper use, integration, and maintenance of the ST62T10C6 microcontroller.



Figure 1: ST62T10C6 Microcontroller (PDSO20 Package)

This image displays the ST62T10C6 microcontroller chip, showing its black plastic body, metal pins, and markings including "ST62T10C6" and "MYS 99 645". The chip is presented against a white background, highlighting its compact form factor suitable for surface-mount applications.

2. SPECIFICATIONS

Feature	Description
Model Number	ST62T10C6
Architecture	8-Bit ST6200 CPU
Memory Type	OTPROM (One-Time Programmable Read-Only Memory)
Clock Frequency	Up to 8MHz
Technology	HCMOS (High-Density Complementary Metal-Oxide Semiconductor)
Package Type	PDSO20 (Plastic Dual Small Outline 20-pin)
Manufacturer	ROXIFETA
ASIN	B0DPJ2WR95

3. SETUP AND INSTALLATION

Proper handling and installation are crucial for the longevity and correct operation of the ST62T10C6 microcontroller. This device is sensitive to electrostatic discharge (ESD) and should be handled with appropriate precautions.

3.1. ESD Precautions

- Always use an ESD-safe workstation, including an ESD mat and wrist strap.
- Handle the device by its body, avoiding contact with the pins.
- Store unused devices in anti-static bags or containers.

3.2. Soldering Guidelines

The PDSO20 package is designed for surface-mount soldering. Adhere to industry standard soldering profiles to prevent damage to the device.

- Ensure proper alignment of the component on the PCB pads.
- Use appropriate solder paste and reflow oven settings for lead-free or leaded solder as required.
- Avoid excessive heat or prolonged exposure to high temperatures.

3.3. Power Supply Connection

Connect the VDD and VSS pins to the appropriate power supply rails as specified in the ST62T10C6 datasheet. Ensure stable and clean power delivery within the recommended voltage range.

4. OPERATING PRINCIPLES

The ST62T10C6 operates based on its internal 8-bit ST6200 CPU core. Program execution begins from the reset vector, fetching instructions from the OTPROM. The microcontroller interacts with external components via its general-purpose I/O pins, which can be configured for various functions including digital input/output, analog input, and peripheral interfaces.

4.1. Programming the OTPROM

As an OTPROM device, the ST62T10C6 can be programmed only once. This typically requires a dedicated STMicroelectronics programmer and development environment. Refer to the official STMicroelectronics documentation for detailed programming procedures and tools.

4.2. Peripheral Usage

The ST62T10C6 includes various on-chip peripherals such as timers, analog-to-digital converters (ADCs), and communication interfaces. Configuration and control of these peripherals are performed through specific control registers, as detailed in the device's comprehensive datasheet.

5. MAINTENANCE AND STORAGE

Microcontrollers generally require minimal maintenance once installed. However, proper handling and storage are essential to prevent damage and ensure long-term reliability.

5.1. Handling

- Always use ESD precautions when handling the device.
- Avoid physical stress or bending of the pins.

5.2. Storage

- Store devices in their original anti-static packaging in a cool, dry environment.
- Protect from direct sunlight and extreme temperatures or humidity.

5.3. Cleaning

If cleaning is necessary, use isopropyl alcohol (IPA) and a soft brush or lint-free cloth. Ensure the device is powered off and completely dry before re-applying power.

6. TROUBLESHOOTING

This section outlines common issues and potential solutions when working with the ST62T10C6 microcontroller.

Problem	Possible Cause	Solution
Device not responding	Incorrect power supply, faulty connections, improper reset circuit, programming error.	Verify VDD/VSS connections and voltage levels. Check all pin connections for shorts or opens. Ensure reset circuit is functioning correctly. Re-verify programmed code.
Programming failure	Incorrect programmer settings, faulty programmer, device already programmed (OTPROM), damaged device.	Confirm programmer settings match device requirements. Test programmer with a known good device. Remember OTPROM can only be programmed once. Inspect device for physical damage.
Unexpected behavior	Software bug, external interference, incorrect peripheral configuration.	Review firmware code for logical errors. Check for noise on power lines or signal lines. Verify peripheral register settings against datasheet.

7. WARRANTY AND SUPPORT

ROXIFETA stands behind the quality of its electronic components. For specific warranty details and technical support, please refer to the official ROXIFETA website or contact their customer service directly. General support includes:

- **Product Quality Assurance:** Components are manufactured to high standards.
- **Customer Satisfaction:** Aims for absolute satisfaction.
- **Technical Assistance:** Knowledgeable team available for inquiries.

For further assistance, please visit ROXIFETA's Amazon Store or contact your distributor.