FM25640
64Kb FRAM Serial Memory

◈RAMTRON

Features

64K bit Ferroelectric Nonvolatile RAM
- Organized as 8,192 x 8 bits
- High endurance 10 Billion (10^{10}) read/writes
- 10 year data retention at 85° C
- NoDelay™ write
- Advanced high-reliability ferroelectric process

Very Fast Serial Peripheral Interface - SPI
- Up to 5 MHz maximum bus frequency
- Direct hardware replacement for EEPROM
- SPI Mode 0 & 3 (CPOL, CPHA=0,0 & 1,1)

Sophisticated Write Protection Scheme
- Hardware protection
- Software protection

Low Power Consumption
- 10 µA standby current

Industry Standard Configuration
- Industrial temperature -40° C to +85° C
- 8-pin SOP or DIP

Description

The FM25640 is a 64-kilobit nonvolatile memory employing an advanced ferroelectric process. A ferroelectric random access memory or FRAM is nonvolatile but operates in other respects as a RAM. It provides reliable data retention for 10 years while eliminating the complexities, overhead, and system level reliability problems caused by EEPROM and other nonvolatile memories.

Unlike serial EEPROMs, the FM25640 performs write operations at bus speed. No write delays are incurred. Data is written to the memory array mere hundreds of nanoseconds after it has been successfully transferred to the device. The next bus cycle may commence immediately. In addition, the product offers substantial write endurance compared with other nonvolatile memories. The FM25640 is capable of supporting up to 1E10-read/write cycles -- far more than most systems will require from a serial memory.

These capabilities make the FM25640 ideal for nonvolatile memory applications requiring frequent or rapid writes. Examples range from data collection, where the number of write cycles may be critical, to demanding industrial controls where the long write time of EEPROM can cause data loss.

The FM25640 provides substantial benefits to users of serial EEPROM, in a hardware drop-in replacement. The FM25640 uses the high-speed SPI bus, which enhances the high-speed write capability of FRAM technology. It is guaranteed over an industrial temperature range of -40°C to +85°C.

Pin Configuration
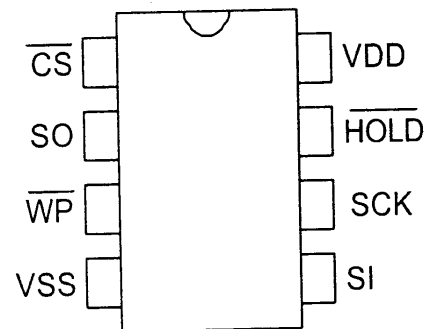
Pin Names	Function
/CS	Chip Select
SO	Serial Data Output
/WP	Write Protect
VSS	Ground
SI	Serial Data Input
SCK	Serial Clock
/HOLD	Hold
VDD	5V

Ordering Information	
FM25640-P	8-pin plastic DIP
FM25640-S	8-pin SOP

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