



memory, flash memory, FM25V10, Ramtron

Ramtron announces 1-megabit serial F-RAM

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Ramtron International has announced the first device in a family of new F-RAM products that offer high-speed read/write performance, low voltage operation, and optional device features. The first device in Ramtron's V-Family of F-RAM products is the FM25V10, a 1-megabit (Mb), 2.0 to 3.6-volt, serial peripheral interface (SPI) nonvolatile RAM in an 8-pin SOIC package that features fast access, NoDelay™ writes, 1E14 read/write cycles, and low power consumption.

The FM25V10 is an ideal alternative to 1Mb serial Flash and serial EEPROM memory in industrial control, metering, medical, automotive, military, gaming, and computing applications, among others. Additional SPI, I2C, and parallel interface V-Family F-RAM products are planned for introduction in 2008.

“Ramtron’s V-Family of F-RAM products addresses our customer demand for lower operating voltage and integrated features that reduce board space as well as assembly and device costs,” explains Ramtron Marketing Manager, Duncan Bennett. “Our device performance capabilities have been expanded by our high-density F-RAM manufacturing process, allowing our V-Family of F-RAM products to operate over a much wider voltage range.”

Unlike serial Flash memory or serial EEPROM, the FM25V10 performs write operations at bus speed without write delays, allowing data to be written immediately to the memory array. The next bus cycle can start without the need for data polling. Compared to serial Flash and serial EEPROM, the FM25V10 also offers greater than eight orders of magnitude more endurance and consumes less than one-tenth the active power.

High-performance F-RAM capabilities make the FM25V10 ideal for nonvolatile memory applications that require frequent or rapid data writes or low power operation. Applications range from high frequency data collection where a high number of write cycles are critical, to demanding industrial controls where the long write time of serial Flash or EEPROM is impractical due to potential data loss.

The FM25V10 has a read-only device ID and can be ordered with a unique serial number and/or system reset option. The device ID provides information about the manufacturer, product density, and product revision of the device. The unique serial number allows the host to have an ID that is different from any other host in the world. The system reset option eliminates the need for an external system reset component in the system.

The FM25V10 operates over the industrial temperature range of -40°C to +85°C, and consumes only 3 milliamps while running at a 40MHz SPI clock rate, 90 microamps during standby, and 5 microamps during sleep mode. The FM25V10 offers an active power consumption of 38 microamps per MHz, which is an order of magnitude lower current than similar serial Flash or EEPROM products.

Manufactured on the proven 130nm CMOS manufacturing process developed by Ramtron and Texas Instruments, the Ramtron V-Family of F-RAM products will include a variety of parallel, serial I2C and SPI memories. The advanced manufacturing process enables improved device specifications and increased feature sets. Additional

Ramtron V-Family products planned for introduction before the end of 2008 will feature additional SPI product densities, as well as I2C and parallel interfaces. All serial F-RAM V-Family products can be equipped with optional device features including unique serial numbering and a system reset option.

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