



## **New Products** / Ramtron Launches V-Family 256-Kilobit Parallel F-RAM

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### **Ramtron Launches V-Family 256-Kilobit Parallel F-RAM**

Ramtron International Corporation (Nasdaq: RMTR), a leading developer and supplier of nonvolatile ferroelectric random access memory (F-RAM) and integrated semiconductor products, today launched its second parallel device in a family of new parallel and serial F-RAM products that offer higher-speed read/write performance and lower voltage operation.

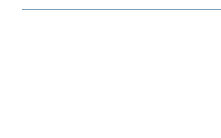
The latest device in **Ramtron's V-Family of F-RAM products** is the **FM28V020**, a 256-Kilobit (Kb), 2.0 to 3.6-volt, parallel nonvolatile RAM in an industry standard 28-pin SOIC package that features fast access, **NoDelay™** writes, virtually unlimited read/write cycles, and low power consumption.

The FM28V020 may be used as a drop-in replacement for battery-backed SRAM in industrial control, metering, medical, automotive, military, gaming, and computing applications, among others.



"The FM28V020 offers a number of enhancements over our existing 256-Kb parallel memory devices and provides an easy upgrade path for battery-backed SRAM or NVSRAM users," states **Mike Peters**, Ramtron's marketing manager.

"Relative to our popular **FM18L08**, the FM28V020 provides improved access and cycle time, allows operation down to 2-volts with a lower active current, and accesses page mode operation up to 40 MHz."



#### About the FM28V020

The FM28V020 is a 32K x 8 nonvolatile ferroelectric random access memory (F-RAM) that reads and writes like a standard SRAM and retains data after power is removed. The FM28V020 provides data retention for over 10 years while eliminating the reliability concerns, functional disadvantages, and system design complexities of battery-backed SRAM (BBSRAM).

Removing the battery from the system simplifies the manufacturing process, reduces system maintenance, and is more environmentally friendly due to the elimination of battery by-products. Fast write timing and virtually unlimited write endurance (1E14) make F-RAM superior to other types of memory.

In-system operation of the FM28V020 is similar to other RAM devices, allowing it to be used as a drop-in replacement for standard SRAM. Read and write cycles may be triggered by toggling a chip enable pin or by simply changing the address. F-RAM memory is nonvolatile due to its unique ferroelectric memory process, making it ideal for nonvolatile memory applications that require frequent or rapid writes. The device operates over the full industrial temperature range of -40°C to +85°C.

#### About the F-RAM V-Family

The Ramtron V-Family of F-RAM products are built on an advanced 130nm CMOS manufacturing process developed by Ramtron and Texas Instruments that enables improved device specifications including:

**Improved memory performance:** With the introduction of the FM28V020, 256-Kb parallel memory cycle time has been reduced from 140ns to 90ns, an improvement of 64% over Ramtron's existing 256-Kb parallel F-RAM memory device. SPI and I2C serial V-Family products offer a 2- to 3-times improvement in read/write performance over Ramtron's existing serial F-RAM products.

**Lower and wider voltage operation:** Due to advancements made possible by the 130-nanometer F-RAM manufacturing process at Texas Instruments, the F-RAM V-Family now offers the flexibility to lower F-RAM operating voltage to 2.0 volts, which allows F-RAM to operate at the native operating voltages of an increasing number of electronic systems.

The FM28V020 represents the latest addition to the growing V-Family product line. The V-Family lineup includes the following F-RAM memory devices:

- FM28V100 (1Mb Parallel F-RAM)
- FM28V020 (256Kb Parallel F-RAM)
- FM24V10 (1Mb Serial I2C F-RAM)
- FM25V10 (1Mb Serial SPI F-RAM)
- FM24V05 (512Kb Serial I2C F-RAM)
- FM25V05 (512Kb Serial SPI F-RAM)
- FM24V02 (256Kb Serial I2C F-RAM)
- FM25V02 (256Kb Serial SPI F-RAM)

#### Pricing and Availability

Samples of the FM28V020 are available now in a "Green" RoHS-compliant, 28-pin SOIC package. Unit pricing begins at \$3.49 in 10K volume.

#### About Ramtron

Ramtron International Corporation, headquartered in Colorado Springs, Colorado, is a fabless semiconductor company that designs, develops and markets specialized semiconductor memory and integrated semiconductor solutions used in a wide range of product applications and markets worldwide.

For more information, visit <http://www.ramtron.com>.