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Parallel F-RAM has 1 Mb parallel memory cycle time of 90 ns.

November 24, 2008 - Available in RoHS-compliant, 32-pin TSOP-I package, FM28V100 is 128K x 8 nonvolatile ferroelectric random access memory (F-RAM) that reads and writes as standard SRAM and retains data after power is removed. It operates from 2.0-3.6 V over -40 to +85°C range and features NoDelay(TM) writes, virtually unlimited read/write cycles, 24-bit device ID, and software-controlled write protection. Data is retained for 10+ years without need for battery.

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Original Press Release

Ramtron Announces Faster and Power Flexible 1-Megabit Parallel F-RAM

First parallel device in a family of new high-speed F-RAM devices from Ramtron

COLORADO SPRINGS, CO - November 10, 2008 - Ramtron International Corporation (Nasdaq: RMTR), a leading developer and supplier of nonvolatile ferroelectric random access memory (F-RAM) and integrated semiconductor products, today launched the first parallel device in a family of new parallel and serial F-RAM products that offer higher-speed read/write performance, lower voltage operation, and optional device features. The newest device in Ramtron's V-Family of F-

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RAM products is the FM28V100, a 1-megabit (Mb), 2.0 to 3.6-volt, parallel nonvolatile RAM in a 32-pin TSOP-I package that features fast access, NoDelay(TM) writes, virtually unlimited read/write cycles, and low power consumption. The FM28V100 is an ideal upgrade from 1Mb battery-backed SRAM in industrial control, metering, medical, automotive, military, gaming, and computing applications, among others. In addition to the FM28V100, Ramtron recently announced the 512Kb FM25V05 and 1Mb FM25V10 serial SPI V-Family products.

"The FM28V100 adds a lower cost and higher performance 1-megabit alternative to Ramtron's byte wide product portfolio," explains Duncan Bennett, Ramtron Marketing Manager. "The FM28V100 provides an easy upgrade path for battery-backed or NVSRAM users that want to eliminate batteries or external capacitors from their systems."

About the FM28V100
The FM28V100 is a 128K 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 FM28V100 provides data retention for over 10 years while eliminating the reliability concerns, functional disadvantages, and system design complexities of battery-

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backed SRAM (BBSRAM). Removing the battery from the system allows the system to operate over a wider operating temperature and is better for the environment. Fast write timing and virtually unlimited write endurance make F-RAM superior to other types of memory.

In-system operation of the FM28V100 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 FM28V100, 1Mb parallel memory cycle time has been reduced from 150ns to 90ns, an improvement of 60% over Ramtron's current 1Mb 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.

Write Protect Feature: Parallel F-RAM V-Family products feature software-controlled write protection. The memory array is divided into eight uniform blocks, each of which can be individually write-protected under software control with no change to hardware or pin-out.

Device ID: Serial F-RAM products in the V-Family incorporate a 24-bit device ID unique to Ramtron and the product to protect against product counterfeiting.

Unique Serial Number: Serial F-RAM products in the V-Family can be ordered with a 64-bit serial number comprised of a 16-bit customer ID, a 40-bit unique number, and an 8-bit cyclic redundancy check for systems that require unique electronic numbering.

Customizable Reset Voltage: A variety of reset


voltages are available for V-Family serial F-RAM products from 2.14 to 3.09 volts.

Pricing and Availability
Samples of the FM28V100 are available now in a RoHS-compliant, 32-pin TSOP-I package. Unit pricing begins at \$6.60 in high 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 www.ramtron.com.
For a 300-dpi product photo, visit www.ramtron.com/press-center/i....

Contacts:

General Information:

Christopher Wray
USA
Phone: 719-481-7182
 [E-mail this person](mailto:christopher.wray@ramtron.com)

Company Information:

Name: Ramtron International Corp.
Address: 1850 Ramtron Dr.
City: Colorado Springs
State: CO
ZIP: 80921
Country: USA
Phone: 800-545-3726
FAX: 719-481-9294
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