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Ramtron Releases 2Mbit Serial Nonvolatile F-RAM

The 3-volt low power memory may replace serial flash

Ramtron International Corporation, a leading developer and supplier on the nonvolatile memory industry, announced the launch of a new F-RAM memory (ferroelectric random access memory), the FM25H20. Featuring a serial peripheral interface (SPI), this high-density 2Mbit serial nonvolatile F-RAM memory operates at low power (3-volt) and has been manufactured through the advanced 130 nanometer CMOS process. The FM25H20 is expected to be the option in the process of replacing serial flash in those sophisticated electronic systems that can offer minimal board space and require low power. Some portable medical devices, like hearing aids, are included as well as other devices that are in essence mini data processors that have low power budgets and limited space. Through the use of F-RAM on these systems there is much to gain, as this nonvolatile memory features much lower operating currents, faster writes, and especially write endurance significantly greater than flash. The FM25H20 is characterized by practically unlimited endurance for its 256K x 8 bit nonvolatile memory featuring bus speeds up to 40MHz both for reading and writing. The new F-RAM memory comes with security features as well. A write protection (both hardware and software) is included on the memory for preventing inadvertent writes and data corruption. Moreover, there is a 10-year data retention, and the low operating currents featured by the FM25H20. The 2Mbit serial F-RAM draws less than 10 milliamps for reads/writes at 40MHz, 80 microamps (typical) in standby, and 3 microamps (typical) in ultra-low-current sleep mode, as to make a general idea on what low power means for FM25H20. This nonvolatile memory is pin-compatible with the similar serial flash devices, but it operates at a superior level of performance, as it features a much faster access time, high endurance and low operating current. The memory operates from 2.7 to 3.6 volts and fits the entire industrial temperature range (-40 degrees C to 85 degrees C). 8-pin TDFN (5.0x6.0 mm) sample packages of the FM25H20 are available. They are RoHS-compliant and footprint-compatible with 8-pin SOICs and have a price tag \$10.20 for 10,000 units.