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Automotive FRAM suits active steering systems

Henri Arnold
[EE Times Europe](#)
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Ramtron International Corp. has expanded its line of FRAM Grade 1 automotive memory products with the qualification of an additional serial FRAM device to operate at +125 degrees Celsius (C). The FM25CL64-GA – a 3-volt, 64-kilobit (Kb) FRAM with a high-speed serial peripheral interface (SPI) – is now Grade 1 AEC-Q100 qualified, making it suitable for automotive applications under the hood, as well as many others in the passenger cab. In tandem with the product announcement, Ramtron upgraded its Grade 1 operating data retention specification to 9,000 hours, and its non-operating specification to 17 years, representing 80% and 17% improvements respectively.

The FM25CL64-GA is already designed into active steering systems where FRAM is required to store steering angle data quickly and frequently. FRAM's No Delay™ writes and virtually unlimited endurance, coupled with a high-speed SPI interface, uniquely enables reliable data writes at maximum bus speed in a variety of automotive applications.

"Qualification of our 3-volt FRAM device was driven by customers who demand reliable and frequent data collection at maximum speed in stringent automotive environments," says Ramtron vice president Mike Alweis. "The recent qualification of this part to operate at +125°C with upgraded data retention capabilities underscores the inherent dependability of Ramtron's FRAM memory products."

About the FM25CL64-GA

The FM25CL64-GA is a 64Kb non-volatile RAM with an SPI that operates at up to 16MHz, enhancing the high-speed write capacity of FRAM technology. Pin-compatible with equivalent EEPROMs, but far superior, this Grade 1 FRAM reads and writes at bus speed up to 20MHz. It boasts essentially unlimited endurance and low power, and is guaranteed to retain data for 9,000 hours at +125°C, and 17 years at +55°C. The device operates from 3.0-3.6 volts over the automotive temperature range (-40°C to +125°C) and is available in a "green" 8-pin SOIC package.

FRAM memory automotive parts

FRAM is designed into a multitude of sophisticated automotive electronics systems worldwide, such as smart airbags, event data recorders, occupant sensors, electronic steering, adaptive cruise control, infotainment, diagnostics, anti-pinch/trap windows/sunroofs and more. To find out more about Ramtron's FRAM memory automotive products, visit www.ramtron.com/doc/Applications/Automotive.asp.

About Ramtron

Ramtron International Corporation, headquartered in Colorado Springs, Colorado, is a fabless semiconductor company that designs, develops and markets specialised semiconductor memory, microcontroller and integrated semiconductor solutions used in a wide range of product applications and markets worldwide. Ramtron pioneered the integration of ferroelectric materials into semiconductor products, which enabled the development of a new class of non-volatile memory products called ferroelectric random access memory (FRAM) products. Ramtron has shipped more than 150 million FRAM memory products to customers for use in automotive navigation and entertainment systems, digital electricity meters, multi-function printers, and RAID disk controllers, among others. FRAM products merge the advantages of multiple memory technologies into a single device that retains information without a power source, can read and write at high speeds, can be written to many times, and consumes low amounts of power. Additionally, Ramtron works with various leading-edge licensees and manufacturers to bring its technology to market. For more product information, visit www.ramtron.com.

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