



## GLOBALFOUNDRIES Launches Embedded MRAM on 22FDX® Platform

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*High-performance embedded non-volatile memory solution is ideally suited for emerging applications in advanced IoT and automotive*

**Santa Clara, Calif., September 15, 2016**-GLOBALFOUNDRIES today introduced a scalable, embedded magnetoresistive non-volatile memory technology (eMRAM) on its 22FDX platform, providing system designers with access to 1,000x faster write speeds and 1,000x more endurance than today's non-volatile memory (NVM) offerings. 22FDX eMRAM also features the ability to retain data through 260°C solder reflow, industrial temperature operation, while maintaining an industry-leading eMRAM bitcell size.

GF's eMRAM will be offered initially on its 22FDX platform, which leverages the industry's first 22nm fully-depleted silicon-on-insulator (FD-SOI) technology. This versatile eMRAM technology is designed for both code storage (flash) and working memory (SRAM) to enable ultra-efficient memory sub-systems that can be power cycled without any energy or performance penalty. The power efficiency of FDX™ and eMRAM, coupled with the available RF connectivity IP, makes 22FDX an ideal platform for battery-powered IoT products and automotive MCUs.

"Customers are looking for a high-performance non-volatile memory solution that expands their product capabilities," said Gregg Bartlett, senior vice president CMOS Platforms Business Unit, GF. "Our introduction of 22FDX eMRAM enables system designers with new capabilities, allowing them to build greater functionality into their MCUs and SoCs, while enhancing performance and power efficiency."

The emergence of autonomous vehicles is rapidly driving the need for increased on-chip memory capacities required for real-time vision processing, high-precision, continuous 3D mapping data and next-generation automotive MCUs that update over-the-air. GF's eMRAM uniquely addresses these advanced driving assistance system (ADAS) requirements by combining greater memory density than SRAM, with the fast write, very high endurance, and non-volatility that only magnetoresistive memory can provide.

"Emerging non-volatile memories are moving from the lab to the fab," said Thomas Coughlin, President of Coughlin Associates. "GF's 22FDX eMRAM will offer a major advancement in SoC capabilities, by leveraging the key performance attributes of embedded MRAM. Designers of battery powered IoT devices, automotive MCUs and SoCs and SSD storage controllers will certainly want to take advantage of this versatile embedded NVM technology."

The introduction of GF's 22FDX eMRAM is a result of the company's multi-year partnership with MRAM pioneer, Everspin Technologies. The partnership has already delivered the world's highest density ST-MRAM in August, 2016 – Everspin's 256Mb DDR3 perpendicular magnetic tunnel junction (pMTJ) product, which is now successfully sampling and is being readied for mass production at GF.

GF's 22FDX eMRAM is currently in development and is expected to be available for customer prototyping in 2017, with volume production in 2018. GF's eMRAM technology is scalable beyond 22nm and is expected to be available on both FinFET and future FDX platforms.

### About GF

GF is the world's first full-service semiconductor foundry with a truly global footprint. Launched in March 2009, the company has quickly achieved scale as one of the largest foundries in the world, providing a unique combination of advanced technology and manufacturing to more than 250 customers. With operations in Singapore, Germany and the United States, GF is the only foundry that offers the flexibility and security of manufacturing centers spanning three continents. The company's 300mm fabs and 200mm fabs provide the full range of process technologies from mainstream to the leading edge. This global manufacturing footprint is supported by major facilities for research, development and design enablement located near hubs of semiconductor activity in the United States, Europe and Asia. GF is owned by Mubadala Development Company. For more information, visit <http://www.globalfoundries.com>.

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