



PRESS RELEASE

X-FAB Adds Non-Volatile Memory Functions to its 180nm BCD-on-SOI Platform

Robust Flash and EEPROM, based on company's proven SONOS technology, enable a wealth of new possibilities in automotive, medical and industrial sectors

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X-FAB Silicon Foundries SE, the leading analog/mixed-signal and specialty foundry, today announced the availability of SONOS-based Flash and embedded EEPROM on its widely implemented [XT018](#) BCD-on-SOI platform. The addition of these Non-Volatile Memory (NVM) elements will open up an even broader array of applications where high-voltage ratings and resilience to elevated temperatures need to be coupled with enhanced computational capabilities.

An increasing number of applications are requiring microcontroller-based solutions that incorporate embedded Flash and EEPROM in combination with high-voltage operation (up to 100V), high-temperature capability and ESD/EMC resilience. The EEPROM part is specifically optimized for use cases where memory blocks need to be reprogrammed many times (at wafer level, as well as in the field). X-FAB's SONOS technology supports operation at junction temperatures from -40°C up to 175°C, in compliance with automotive AEC-Q100 grade-0 quality standards.

The new X-FAB NVM solution includes a single block of 32kBytes of Flash memory, plus 4kbits of EEPROM capacity. Both these elements employ the company's SONOS technology and leverage the strong reliability and experiences already demonstrated by the 180nm bulk process ([XH018](#)). The Flash and EEPROM sub blocks can operate at 1.8V single-voltage and can be accessed independently while sharing the same peripheral interface, thereby achieving a best-in-class footprint.

To ensure that ongoing data integrity is maintained, this NVM solution contains all the additional features for enabling implementation of Error Code Correction (ECC), with single-bit correction on the Flash and double-bit correction on the EEPROM respectively. The NVM blocks also come with the option of an embedded test interface, allowing direct access to both the Flash and the EEPROM IP. Through this, customers can benefit from X-FAB's NVM wafer-level test and package device test capabilities, as well as improved electric debug and time-to-yield.

Adding only four extra process layers to the XT018 base process, this heavy-duty NVM solution is particularly well-suited for an array of different application areas, such as automotive, industrial, IoT and medical. Furthermore, the ultra-low-leakage performance that this BCD-on-SOI process offers will prove of



value in emerging applications such as remote autonomous sensor interfaces for IoT networks and in-vivo health monitoring applications.

“Bringing Flash functionality to our XT018 platform provides us with a clear advantage in automotive powertrain applications where intelligent control is required at elevated temperatures,” states Nando Basile, Product Marketing Manager for NVM Solutions at X-FAB. “It also means that we are well positioned to address numerous opportunities that are starting to appear within the medical and industrial domains.”

About X-FAB

X-FAB is the leading analog/mixed-signal and MEMS foundry group manufacturing silicon wafers for automotive, industrial, consumer, medical and other applications. Its customers worldwide benefit from the highest quality standards, manufacturing excellence and innovative solutions by using X-FAB's modular CMOS and SOI processes in geometries ranging from 1.0 to 0.13 μm , and its special SiC and MEMS long-lifetime processes. X-FAB's analog-digital integrated circuits (mixed-signal ICs), sensors and micro-electro-mechanical systems (MEMS) are manufactured at six production facilities in Germany, France, Malaysia and the U.S. X-FAB employs about 4,000 people worldwide. www.xfab.com

X-FAB Press Contact

Thomas Hartung
VP Sales & Corporate Marketing
X-FAB Silicon Foundries
+49-361-427-6160
thomas.hartung@xfab.com

Acronyms

BCD	Bipolar CMOS DMOS
ECC	Error Correction Code
EEPROM	Electrically Erasable Programmable Read-Only Memory
ESD	Electrostatic Discharge
EMC	Electromagnetic Compatibility
IoT	Internet of Things
NVM	Non-Volatile Memory
SOI	Silicon-on-Insulator
SONOS	Silicon Oxide Nitride Oxide Silicon