



Press Release

X-FAB Enhances its 180nm Automotive-Grade High-Voltage CMOS Foundry Solution

New competitive second-generation high-voltage primitive devices added to XP018

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[X-FAB Silicon Foundries SE](#), the leading analog/mixed-signal and specialty foundry, has updated its XP018 high-voltage CMOS semiconductor fabrication platform with new 40V and 60V high-voltage primitive devices, which feature an extended SOA for improved operational robustness. These 2nd generation high-voltage primitive devices exhibit up to a 50% reduction in R_{DSon} figures compared to the previous version. This offers an alternative which is better positioned to address certain key applications - particularly where devices' footprints need to be reduced and unit costs minimized.

The XP018 platform is a modular 180nm high-voltage EPI technology solution, based on a low mask count 5V single-gate core module. It supports an extended temperature range of -40 to 175°C and offers a wide range of optional devices and modules, including high-gain bipolar devices, standard and high-capacitance MIM capacitors, multi-threshold (V_t) options, Schottky diodes, and depletion devices.

The platform is supported by high-reliability automotive NVM solutions, such as embedded Flash, EEPROM, and OTP, making it specifically designed for cost-sensitive and robust automotive, industrial, and medical applications.

In addition to the new 40V/60V devices, the platform has been enhanced by the inclusion of 5.3V Zener diodes. The new low leakage Zener diode is designed to effectively protect the gate oxide in critical applications, such as Wide Bandgap gate driver applications. Furthermore, there are also new isolated drain high-voltage devices up to 24V and a new 1.8 V medium V_t option on offer.



Tilman Metzger, Product Line Manager for High-Voltage at X-FAB, comments: "With this update of our XP018 platform we are demonstrating X-FAB's commitment to enhancing established technologies. XP018 has been in production for more than a decade and still sees widespread adoption for new designs from our focus market segments: automotive, industrial and medical. The new competitive high-voltage devices and updates will enable our customers to implement more innovative and cost-effective products. Designers utilizing the new XP018 primitive devices have access to comprehensive PDK support across major EDA platforms like Cadence, Siemens EDA, Synopsys, ensuring seamless integration and optimization for a range of applications."

A new medium Vt standard cell library is scheduled to be released in Q3 2024. Further details on the XP018 platform can be accessed by going to:

<https://www.xfab.com/technology/high-voltage>

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Acronyms

CMOS - Complementary Metal Oxide Semiconductor

DMOS - Double-Diffused Metal-Oxide-Semiconductor

PDK - Process Design Kit

R_{DSon} - On-Resistance

SOA - Safe Operating Area

SOI - Silicon-on-Insulator

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 μm to 110 nm, and its special silicon carbide 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 approx. 4,500 employees worldwide. Learn more at xfab.com.

X-FAB Press Contact

Anja Noack

MarCom Manager

X-FAB Silicon Foundries

+49-361-427-6162

anja.noack@xfab.com