

PRESS RELEASE

X-FAB Announces First 180-Nanometer Cost-Efficient SOI Foundry Technology for Automotive Applications

XT018 outperforms bulk CMOS solutions with up to 30-percent cost savings, enables first-time-right success

ERFURT, Germany, June 25, 2015 – X-FAB Silicon Foundries, the leading More than Moore foundry, today announced the industry's first cost-efficient 180nm SOI technology for automotive and industrial applications that need to operate in harsh environments. X-FAB's new suite of 40V and 60V high-voltage devices for its XT018 180-nanometer SOI platform outperforms bulk CMOS technologies and provides cost savings of up to 30-percent. The XT018 technology includes comprehensive design support, resulting in fewer design cycles and the possibility of first-time-right success; it offers cost-competitive implementation of next-generation automotive solutions and leads to faster time to market. The new devices make the XT018 process ideal for advanced automotive applications such as monolithic motor controllers and physical layer transceivers including integrated or stand-alone LIN/CAN transceivers.

Volker Herbig, product marketing director at X-FAB, explained the significance of the new XT018 technology. "Until now SOI technologies were seen as rather exotic and very expensive solutions, but our XT018 SOI technology offsets the added cost of SOI with a smaller chip size, higher performance, and easier design. Therefore it makes first-time-right success achievable."

The XT018 platform is specifically designed for next-generation automotive, industrial and medical applications with up to 200V operating voltage and an operating temperature up to 175°C. The X-FAB XT018 180nm modular high-voltage SOI CMOS technology combines the benefits of SOI wafers with Deep Trench Isolation (DTI) plus those of a state-of-the-art six-metal-layer 180nm bulk CMOS process. Using SOI wafers as the starting material, in combination with trench isolation instead of the more commonly used junction isolation techniques in CMOS, simplifies the design concept. The SOI wafers eliminate the parasitic bipolar effects to substrate, reducing latch-up risk. They also enable the development of devices such as truly isolated diodes, allowing reverse supply voltage protection that is difficult to achieve with bulk CMOS or BCD technologies.

The centerpiece of the new offering is a low Ron 40V NMOS transistor with industry-leading on resistance of 26 mΩ-mm². It is complemented by robust 40V and 60V ESD enhanced devices as well as matching PMOS and depletion transistors.

Herbig further explained, "Requirements for automotive designs are becoming ever more challenging to fulfill – for example, the latest CAN standard and the more stringent specifications for EMC and ESD robustness. X-FAB's XT018 technology enables designers to deal with these challenges."

The new XT018 SOI technology allows for much more compact designs compared to the conventional junction isolation scheme. For example, it allows area efficient lateral isolation in-between circuit blocks against cross-coupling for the output driver and sense inputs. The easy integration of isolated devices enables a short design cycle, making first-time-right functionality possible even for complex systems-on-chip with automotive HV device requirements.

Availability

The enhanced XT018 foundry platform is available immediately including full PDK support for all major EDA vendors, extensive device characterization and modelling, as well as comprehensive analog, digital and memory IP. Additional new devices such as depletion transistors, Zener diodes, high performance BJTs and a 200V IGBT device also are ready to be used.

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 processes in geometries ranging from 1.0 to 0.18 µm, and its special BCD, SOI 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 five production facilities in Germany, Malaysia and the U.S. X-FAB employs 2,500 people worldwide. For more information, please visit www.xfab.com.

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Acronyms

BCD	Bipolar-CMOS-DMOS
BJT	Bipolar Junction Transistor
CAN	Controller Area Network
CMOS	Complementary Metal Oxide Semiconductor
DTI	Deep Trench Isolation
EDA	Electronic Design Automation
EMC	Electro-Magnetic Compatibility
ESD	Electro-Static Discharge
HBM	Human Body Model
HV	High Voltage
ICs	Integrated Circuits
IGBT	Insulated-Gate Bipolar Transistor
IP	Intellectual Property
LIN	Local Interconnect Network
MEMS	Microelectromechanical Systems
PDK	Process Design Kit
SOI	Silicon on Insulator

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