P R E S S R E L E A S E

X-FAB Sets the Benchmark for Low-Noise CMOS by Reducing Flicker Noise by a Factor of Five with its New Cost-Effective Transistors on 0.35µm and 0.18µm CMOS Platforms

Enhanced XH035 and XH018 CMOS transistors deliver industry-leading performance for highly noise-sensitive applications

ERFURT, Germany, September 25, 2015 – X-FAB Silicon Foundries, the leading More-than-Moore foundry, today announced new transistors that have drastically reduced flicker noise on its mixed-signal 0.35µm and 0.18µm CMOS process platforms. Flicker noise in CMOS MOSFETs has been reduced in both the n-channel device in the XH035 0.35µm process and the p-channel device in the XH018 0.18µm process by a factor of five, thereby setting the industry benchmark.

The new XH035 3.3V n-channel MOSFET has a lower flicker noise comparable to that of its companion XH035 3.3V p-channel MOSFET, when referenced to its input, and maintains the standard n-channel MOSFET's threshold voltage and current drive capability. Using both types of low-noise transistors it is possible to design improved, lower-noise amplifier variants with a significantly higher signal-to-noise ratio (SNR), and to make circuits that are more compact with better performance and are more cost-effective. Similarly, the new 0.18µm process XH018 3.3V p-channel MOSFET exhibits a much lower flicker noise level than the standard p-channel device. The new low-noise XH018 3.3V p-channel device behavior now is similar to that of the low-noise XH035 3.3V p-channel MOSFET device.

Dr. Jens Kosch, Chief Technical Officer at X-FAB, explains the significance and cost-effectiveness of the new low-noise CMOS transistors. He says, "For years X-FAB has set the benchmark for low-noise transistors with our p-channel MOSFET transistor in our 0.35µm technology. When our customers asked for additional low-noise transistors, we developed our XH035 low-noise n-channel MOS transistor (NMOS) and our XH018 p-channel MOS transistor. The combination of the complementary XH035 n- and p-channel transistors offers designers more freedom in their circuit designs. No longer are they limited to only a low-noise p-channel device, and they benefit from having no additional mask layer expense. In addition, the new XH018 p-channel device makes it possible to develop noise-critical designs for 0.18µm processes."

To introduce these new lower-noise transistors, X-FAB will offer free webinars on Wednesday, Sept. 30 for designers in North and South America, Asia and Europe. Please click here for full details.

Availability
The new 0.35µm lower-noise n-channel transistor and its low-noise p-channel counterpart, integrated within the XH035 process design kit (PDK), are available immediately for new designs. Noise parameters are included within the device models to facilitate an accurate simulation of the noise behavior of a circuit prior to its actual use. For the 0.18µm XH018 process, the new lower-noise 3.3V p-channel MOSFET will become available for new designs in November 2015.

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 1.0µm to 0.18µm, 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
CMOS	Complementary Metal Oxide Semiconductor
EDA	Electronic Design Automation
MEMS	Microelectromechanical Systems
MOSFET	Metal-Oxide-Semiconductor Field-Effect Transistor
PDK	Process Design Kit
SOI	Silicon on Insulator

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