



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

X-FAB and Exagan Successfully Produce First GaN-on-Silicon Devices on 200-mm Wafers

Silicon Foundry and GaN Start-Up Achieve Major Milestone in Establishing a 200-mm, Fully CMOS-Compatible Process While GaN Power Products Gain Market Traction

Erfurt, Germany and Grenoble, France – May 10, 2017 – [X-FAB Silicon Foundries](#) and [Exagan](#), a start-up innovator of gallium-nitride (GaN) semiconductor technology enabling smaller and more efficient electrical converters, have demonstrated mass-production capability to manufacture highly efficient high-voltage power devices on 200-mm GaN-on-silicon wafers using X-FAB's standard CMOS production facility in Dresden, Germany. This accomplishment is the result of a [joint development agreement](#) launched in 2015, enabling cost/performance advantages that could not be achieved with smaller wafers.

Exagan and X-FAB have successfully resolved many of the challenges related to material stress, defectivity and process integration while using standard fabrication equipment and process recipes. Combined with the use of 200-mm wafers, this will significantly lower the cost of mass producing GaN-on-silicon devices. By enabling greater power integration than silicon ICs, GaN devices can improve the efficiency and reduce the cost of electrical converters, which will accelerate their adoption in applications including electrical vehicle charging stations, servers, automobiles and industrial systems.

The new GaN-on-silicon devices have been built using substrates fabricated at Exagan's 200-mm epi-manufacturing facility in Grenoble, France. These epi wafers meet the physical and electrical specifications to produce Exagan's 650-volt [G-FET™](#) devices as well as the tight requirements for compatibility with CMOS manufacturing lines.

The industry's previous work with GaN had been limited to 100-mm and 150-mm wafers due to the challenges of layering GaN films on silicon substrates. Exagan's G-Stack™ technology enables GaN-on-silicon devices to be manufactured more cost effectively on 200-mm substrates by depositing a unique stack of GaN and strain-management layers that relieves the stress between GaN and silicon layers. The resulting devices have been shown to exhibit high breakdown voltage, low vertical leakage and high-temperature operation.

“This is a major milestone in our company's development as we accelerate product development and qualification,” said Frédéric Dupont, president and CEO of Exagan. “It demonstrates the combined strengths of our epi material, X-FAB's wafer fab process and our device design capabilities. It also confirms the success of our vertically integrated fab-lite model, with expertise from materials to devices and applications. It's perfect timing to establish GaN technology and products on the most competitive 200-mm platform just as GaN power products are getting broad traction in IT server, consumer electronics and automotive markets.”

“We have high confidence in Exagan’s leadership team and product performance roadmap,” said Rudi De Winter, CEO of X-FAB. “Through this productive partnership, X-FAB is leveraging its resources and expertise to bring Exagan’s technology into manufacturing and provide the power conversion market with a reliable supply chain.”

Exagan will showcase its innovative GaN technology and G-FET transistors in booth #9-230 at the PCIM Europe trade show, May 16-18 in Nuremberg, Germany.

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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 0.13 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 six production facilities in Germany, France, Malaysia and the U.S. X-FAB employs approximately 3,800 people worldwide. For more information, please visit www.xfab.com.

About Exagan

Founded in 2014 with support from CEA-Leti and [Soitec](http://www.soitec.com), Exagan’s mission is to accelerate the power-electronics industry’s transition from silicon-based technology to GaN-on-silicon technology, enabling smaller and more efficient electrical converters. Its GaN power switches are designed for manufacturing in standard 200-mm wafer fabs to provide high-performance, high-reliability products through a robust supply chain. The company’s G-FET products offer very high power-switching performance with extremely low conduction losses, enabling unprecedented power integration and efficiency levels in electrical converters for applications including solar power, automotive and IT electronics. Exagan is based in Grenoble, France. For more information, visit www.exagan.com.

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