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Transphorm Introduces SuperGaN™ Power FETs with Launch of Gen IV GaN Platform

Newest High Voltage GaN Devices Bring Increased Performance and Easier Designability at Reduced Cost

GOLETA, Calif.—April 14, 2020—[Transphorm Inc.](#)—the leader in the design and manufacturing of the highest reliability and first JEDEC- and AEC-Q101 qualified high voltage gallium nitride (GaN) power semiconductors—today announced availability of its Gen IV GaN platform. Transphorm's latest technology offers notable advancements in performance, designability, and cost when compared to its previous GaN generations. Related, Transphorm also announced today that Gen IV and future platform generations will be called SuperGaN™ technologies.

The first JEDEC-qualified SuperGaN device will be the [TP65H300G4LSG](#), a 240 mΩ 650 V GaN FET in a PQFN88 package. The second SuperGaN device is the [TP65H035G4WS](#), a 35 mΩ 650 V GaN FET in a TO-247 package. These devices are currently sampling and will be available Q2 and Q3 respectively. Target applications include adapters, servers, telecommunications, broad industrial, and renewables. System designers can assess the technology in Transphorm's 4 kW bridgeless totem pole AC-DC evaluation board, the [TDTP4000W066C-KIT](#).

The SuperGaN™ Technology Difference

When designing Gen IV, Transphorm's engineering team drew on learnings from production ramps of previous products, coupled with a constant drive for performance, manufacturability, and cost reduction to design a new product with ultimate simplicity and substantial improvements. The new platform's patented technology delivers benefits that augment Transphorm's intrinsic GaN performance and simplicity both in assembly and applications, which is the catalyst for the SuperGaN™ brand.

Driven by its patented technology, SuperGaN Gen IV benefits include:

- **Increased Performance:** Gen IV provides a flatter and higher efficiency curve with an improved Figure of Merit ($R_{ON} \times Q_{OSS}$) of approximately 10 percent.
- **Easier Designability:** Gen IV offers increased simplicity of design-in by removing the need for a switching node snubber at high operation currents.
- **Enhanced Inrush Current Capability (di/dt):** Gen IV removes the switching current limits for the built-in freewheeling diode function in half bridges.
- **Reduced Device Cost:** Gen IV's design innovations and patented technology simplify device assembly, too. The resulting cost adjustments continue to bring Transphorm's GaN closer to Silicon transistor pricing.
- **Proven Robustness/Reliability:** Gen IV's 35 mΩ FET offers the same gate robustness of +/- 20 V_{max} and noise immunity of 4 V that is currently delivered by Transphorm's Gen III devices.

"We expect Transphorm's SuperGaN™ FETs to continue to impact next gen power electronics as the evolution of Silicon superjunction MOSFETs did," said Philip Zuk, VP of Worldwide Technical Marketing and NA Sales, Transphorm. "Our Gen IV GaN platform is creating new design opportunities in other power stages through better performance while increasing customers' overall ROI. Our ability to reduce losses and bring the initial device

investment down closer to what customers are used to with Silicon without sacrificing reliability is another indicator that GaN's position in the marketplace is strengthening."

About Transphorm, Inc.

Transphorm, Inc. (www.transphormusa.com), a global leader in the GaN revolution, designs and manufactures the highest performance, highest reliability high voltage GaN semiconductors for high-voltage power conversion applications. Holding one of the largest Power GaN IP portfolio, Transphorm produces the industry's first JEDEC and AEC-Q101 qualified GaN FETs. Its vertically integrated device business model allows for innovation at every development stage: design, fabrication, device, and application support. Twitter: [@transphormusa](https://twitter.com/transphormusa)

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