



Market News

Gallium nitride solutions from Infineon are in volume production

Munich, Germany – 13 November 2018 – At electronica 2018 Infineon Technologies AG (FSE: IFX / OTCQX: IFNNY) showcases the benefits of its gallium nitride (GaN) solutions: CoolGaN™ 600 V e-mode HEMTs and GaN EiceDRIVER™ ICs. They offer a higher power density enabling smaller and lighter designs, lower overall system cost and operating expense as well as a reduction in capital expenditure. With the introduction of its CoolGaN 600 V enhancement mode (e-mode) HEMTs and GaN EiceDRIVER gate driver ICs, Infineon is currently the only company in the market offering a full-spectrum portfolio of all power technologies – silicon (Si), [silicon carbide \(SiC\)](#) and GaN.

CoolGaN 600 V e-mode HEMTs:

The newly launched CoolGaN 600 V e-mode HEMTs are built with a reliable normally-off concept, optimized for fast turn-on and turn-off. They enable high efficiency and density levels in switched mode power supplies (SMPS) showing the best figures of merit (FOMs) of all currently available 600 V devices. CoolGaN switches come with lowest gate charge and excellent dynamic performance in reverse conduction. This allows much higher frequency operations, thus improving power density by reducing the overall size of passive components. Infineon's CoolGaN 600 V e-mode HEMTs enable highest power factor correction (PFC) efficiency (>99.3 percent for 2.5 kW PFC) and significantly higher density for the same efficiency (>160 W/in³ for 3.6 kW LLC with >98 percent efficiency). The linear output capacitance leads to 8-10 times lower dead time in resonant topologies.

CoolGaN comes with an industry leading reliability in the market. During the quality management process, it is not only the device, which is thoroughly tested but also its behavior in the application environment. This ensures that CoolGaN switches meet and even exceed the highest quality standards.

The CoolGaN 600 V switches are available with 70 mΩ and 190 mΩ in SMD packages, guaranteeing excellent thermal performance and low parasitics. By offering a full SMD package series, Infineon aims to support high frequency

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operations in applications such as [enterprise and hyperscale data center servers](#), [telecom rectifiers](#), [adapters](#), [chargers](#), [SMPS](#) and [wireless charging](#).

GaN EiceDRIVER ICs:

Infineon's new EiceDRIVER ICs - the 1EDF5673K, 1EDF5673F and 1EDS5663H are a perfect fit for the CoolGaN e-mode HEMTs. They are developed to ensure robust and highly efficient CoolGaN switch operation while minimizing R&D efforts and shortening time-to-market.

Unlike gate driver ICs for power MOSFETs, the Infineon CoolGaN tailor-made gate driver ICs provide a negative output voltage to rapidly turn off GaN switches. For the entire duration the switch is intended to be off, the GaN EiceDRIVER ICs can firmly hold the gate voltage at zero. This protects the GaN switch against spurious turn-on, even for the first pulse, which is essential for robust SMPS operations. The GaN gate driver ICs allow constant GaN HEMT switching slew rates, virtually independent from duty cycle or switching frequency. This ensures operational robustness and high power efficiency, and greatly reduces R&D time. Galvanic isolation is integrated for operational robustness in hard switching applications. It also provides protection between the primary and secondary side of an SMPS and between power and logic stages where needed.

The GaN EiceDRIVER 1EDF5673K comes in a 13-pin LGA 5x5 mm, the 1EDF5673F in a 16-pin DSO 150 mil, and the 1EDS5663H in a 16-pin DSO 300 mil package.

Availability

The new CoolGaN 600 V e-mode HEMTs are available now and the silicon-based GaN EiceDRIVER ICs can be preordered. More information is available at www.infineon.com/gan and www.infineon.com/gan-eicedriver.

Infineon at electronica 2018

How can clean energy be produced and how can it be transferred into an electric vehicle quickly with low losses? What makes servers more efficient as we transfer more and more data to the cloud? How suitable are robots currently for use in everyday life? And how do we protect ourselves in a connected world against cyber attacks? Together with customers and strategic partners, Germany's largest semiconductor manufacturer is working on solutions for the connected world of

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tomorrow. Infineon will showcase the connection between the real and digital worlds at booth 502 in Hall C3 at electronica 2018, from 13 to 16 November. More information at www.infineon.com/electronica.



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