

## 650-V GaN Switches And Half-Bridges Feature Integrated Drivers

[Infineon Technologies'](#) CoolGaN Drive product family consists of single switches integrating one 650-V G5 GaN transistor plus gate driver in 5- x 6-mm and 6- x 8-mm PQFN packages, as well as 650-V G5 half-bridges, combining two transistors with integrated high- and low-side gate drivers in 6- x 8-mm LGA packages (see the figure). According to the vendor, the product family enables improved efficiency, reduced system size, and overall cost savings. This makes the devices suitable for longer-range e-bikes, portable power tools, and lighter-weight household appliances such as vacuums, fans, and hairdryers.

"For several years, Infineon has been focused on accelerating innovation in GaN to provide targeted solutions for real-world power challenges", said Johannes Schoiswohl, senior vice president & general manager, GaN Systems Business Line Head at Infineon. "The new CoolGaN Drive product family is another proof point of how we support our customers in developing compact designs with high power density and efficiency through GaN."

The CoolGaN Drive family offers a wide range of single switches and half bridges with integrated drivers based on the recently announced 650-V G5 CoolGaN transistors. Depending on the product group, the components feature a bootstrap diode and are characterized by loss-free current measurement, and adjustable switch-on and switch-off dV/dt. They also provide OCP/OTP/SCP protection functions.

As a result, the devices enable higher switching frequencies, leading to smaller and more efficient system solutions with high power density. At the same time, the bill of materials (BoM) is reduced. This not only results in a lower system weight, but also reduces the carbon footprint.

Samples of the half-bridge solutions are available now. Single-switch samples will be available starting Q4 2024. For more information, see the CoolGaN Drive High Voltage [page](#).



*Figure. Infineon's CoolGaN Drive product family consists of single 650-V G5 GaN switches with an integrated gate driver in 5- x 6-mm and 6- x 8-mm PQFNs and 650-V G5 GaN half-bridges with integrated high- and low-side gate drivers in 6- x 8-mm LGAs. These devices enable improved efficiency, reduced system size, and overall cost savings, says the vendor.*