

Cambridge GaN Devices develops 650-V gallium nitride integrated circuit for automotive inverters

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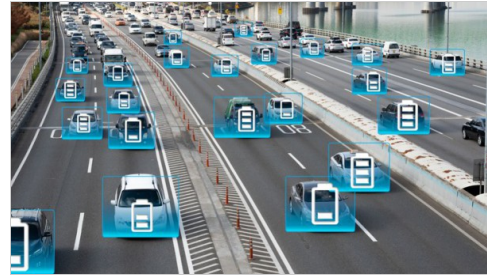
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The ICeGaN device targets lower losses and easier parallel operation with integrated noise immunity and temperature sensing

Cambridge GaN Devices (CGD) said it has developed a 650-volts gallium nitride (GaN) integrated circuit (IC) for automotive applications aimed at improving inverter efficiency in electric vehicles. The company said its ICeGaN technology is intended to enable smaller and lighter inverters, which can help extend EV range as automakers seek to shift consumer demand away from internal combustion engine (ICE) powertrains and toward EVs.



Source: Getty Images/Jae Young Ju

CGD said using GaN ICs in parallel in powertrain designs can be difficult because developers must keep devices balanced, and that the ICeGaN interface is designed to inherently balance multiple devices without selecting parts with closely matched performance or adding balancing components. The company said the new ICeGaN device has an on-resistance of 9 milliohm and is designed to reduce losses across the powertrain, easing thermal-management needs, while its higher-frequency switching capability can support smaller and lighter propulsion systems.

The company said ICeGaN simplifies interfacing with gate driver ICs in the inverter and supports straightforward parallel operation with a larger die, adding that an auxiliary transistor in the interface filters parasitic noise from gate driver loops to provide built-in noise immunity. It also said the interface includes integrated temperature sensing for system control and diagnostics intended to improve EV powertrain reliability.

Dan Murphy, senior director, Product Management, CGD, said, “This technology demonstrates the advantages of GaN and the ICeGaN interface for inverter designs with the lower losses, smaller size and lower costs that automotive developers are asking for.”

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