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Robust Gate Drivers For Fast Switching SiC Power Modules

CISSOID's robust gate drivers for the XM3 SiC MOSFET power modules from Wolfspeed safely drive the fast switching SiC power modules to achieve low losses while operating in the high-temperature environments found in space-constrained motor drives, compact power supplies or fast battery chargers. The CMT-TIT0697 gate driver board has been designed to be directly mounted on the CAB450M12XM3 1200-V, 450-A SiC MOSFET power modules (see the figure).

With an on-board isolated power supply delivering up to 2.5 W per channel without derating up to 125°C (T_a), the gate driver can drive XM3 modules up to 100 KHz, enabling high power density. Peak gate current up to 10 A and immunity to high dV/dt (>50 kV/µs) make it possible to drive the power module with zero gate resistance, achieving minimum switching losses.

The board withstands isolation voltages up to 3600 V (50 Hz, 1 min) and offers creepage distances of 14 mm. Protection functions such as undervoltage lockout, active Miller clamping, desaturation detection and soft shutdown ensure the safe drive and reliable protection of the power module in case of faults. For more information, see the company's website.

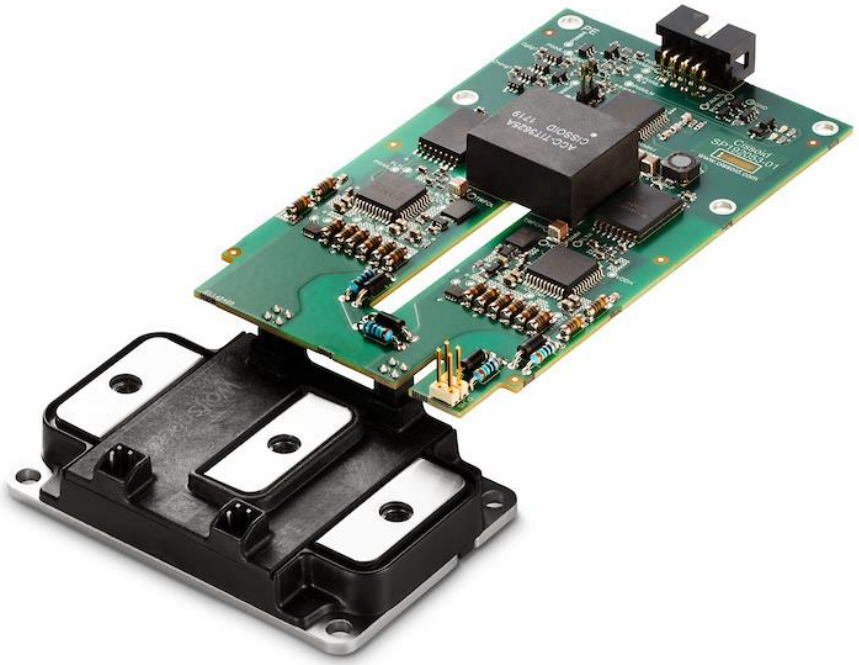

Figure. The CMT-TIT0697 gate driver board has been designed to be directly mounted on Wolfspeed's CAB450M12XM3 1200-V SiC MOSFET power modules. It safely drives the fast switching SiC power modules to achieve low losses while operating in high-temperature environments.