power integrations

NEWS RELEASE

Power Integrations' SCALE-iDriver for SiC MOSFETs Achieves AEC-Q100 Automotive Qualification

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Compact and robust isolated SiC MOSFET driver incorporates active clamping and <2 µs short-circuit turn-off time

SAN JOSE, Calif.--(BUSINESS WIRE)-- Power Integrations (Nasdaq: **POWI**), the leader in gate-driver technology for medium- and high-voltage inverter applications, today announced that its **SIC118xKQ** SCALE-iDriver™, a high-efficiency, single-channel gate driver for silicon carbide (SiC) MOSFETs, is now certified to AEC-Q100 for automotive use. Devices can be configured to support gate-drive voltage requirements of commonly used SiC MOSFETs and feature sophisticated safety and protection features.

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Power Integrations' SCALE-iDriver for SiC MOSFETs Achieves AEC-Q100 Automotive Qualification (Graphic: Business Wire)

The **SIC1182KQ** (1200 V) and **SIC1181KQ** (750 V) SCALE-iDriver devices are optimized for driving SiC MOSFETs in automotive applications, exhibiting rail-to-rail output, fast gate switching speed, unipolar supply voltage supporting positive and negative output voltages, integrated power and voltage management and reinforced isolation. Critical safety features include Drain to Source Voltage (VDS) monitoring, SENSE readout, primary and secondary Undervoltage Lock-out (UVLO), current-limited gate drive and Advanced Active Clamping (AAC) which facilitates safe operation and soft turn-off -under fault conditions. AAC in combination with VDS monitoring ensures safe turn-off in less than 2 µs during short-circuit conditions. Gate-drive control and AAC features allow gate resistance to be minimized; this reduces switching losses, maximizing inverter efficiency.

By pairing the SCALE-iDriver control and safety features with its high-speed FluxLink™ communication technology,

Power Integrations delivers a revolution in gate-driver IC technology compared to opto-, capacitive- or Si- isolated magnetic couplers. The combination dramatically improves isolation capability, and enables safe, cost-effective designs for inverters with very few external components up to 300 kW.

Comments Michael Hornkamp, senior director of marketing for automotive gate-driver products at Power Integrations: “Silicon carbide MOSFET technology opens the door for smaller, lighter automotive inverter systems. Switching speeds and operating frequencies are increasing; our low gate resistor values maintain switching efficiency, while our fast short-circuit response quickly protects the system in the event of a fault.”

“Furthermore, SCALE-iDriver sets a new standard in isolation robustness for functional safety; even if a power device causes catastrophic driver failure, SCALE-iDriver’s isolation remains intact ensuring that no part of the chassis will carry life-threatening high voltages,” continued Hornkamp.

The new single-channel SIC118xKQ gate drivers provide up to 8 A and suit SiC MOSFETs with standard gate-emitter voltages from +15 V, with various negative voltages in the range from -3 V to -15 V. Devices exhibit high external magnetic field immunity, and are available in a compact eSOP package that provides ≥9.5 mm of creepage and clearance, using material that has the highest CTI level (CTI =600 per IEC 60112). They are available now, priced at $5.39 in 10,000 piece quantities. Technical information is available from the Power Integrations website at **http://www.power.com/products/scale-idriver-ic-family/sic118xkq/**.

About Power Integrations

Power Integrations, Inc. is a leading innovator in semiconductor technologies for high-voltage power conversion. The company’s products are key building blocks in the clean-power ecosystem, enabling the generation of renewable energy as well as the efficient transmission and consumption of power in applications ranging from milliwatts to megawatts. For more information please visit **www.power.com**.

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