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Wide-Creepage Switcher IC Meets IEC60664-1 For 800-V EVs

[Power Integrations](#) has introduced a wide-creepage package option for its InnoSwitch3-AQ flyback switcher IC for automotive applications. A wide drain-to-source-pin creepage distance of 5.1 mm eliminates the need for conformal coating, making the IC compliant to the IEC60664-1 standard in 800-V vehicles while simplifying manufacturing and increasing system reliability (see the figure).

Mike Stroka, product marketing engineer at Power Integrations, said, "Automotive designers rely on the efficiency and low component count of high-voltage power supplies designed around InnoSwitch3-AQ ICs. The increased primary-to-primary creepage and clearance distance between the drain and source pins in the new package provides support for the next generation of EV bus voltages. Power Integrations' unique InSOP-28G package enables 1000 Vdc to be provided to the primary side, while keeping all other pins safely isolated in pollution degree 2 environments."

The 1700 V-rated CV/CC InnoSwitch3-AQ switching power supply ICs incorporate a SiC primary switch capable of delivering up to 80 W of output power. The highly integrated ICs reduce the number of components required to implement a power supply by as much as 50%, saving space, enhancing system reliability and mitigating component sourcing challenges, according to the vendor. An increased drain-pin width is beneficial in withstanding high levels of shock and vibration, especially in eAxe automotive applications.

The new members of the InnoSwitch3-AQ family will start up with as little as 30 V on the drain without external circuitry—which is critical for functional safety. Target automotive applications include battery management systems, micro-dc-dc converters, control circuits and emergency power supplies in the main traction inverter. The ICs also have improved functionality for remote on/off.

Pricing for the 1700-V-rated InnoSwitch3-AQ switching power supply ICs starts at \$6 per unit for 10,000-unit quantities. Sample ICs are available now with full production in the first quarter of 2025. For further information, see the InnoSwitch3-AQ [product page](#) or contact a Power Integrations sales representative or one of the company's authorized worldwide distributors—[DigiKey](#), [Newark](#), [Mouser](#) and [RS Components](#).



Figure. With the a wide-creepage package option, the 1700-V InnoSwitch3-AQ flyback switcher meets the IEC60664-1 isolation standard