

900-V MOSFETs Enhance Power And Efficiency Of Flyback Converters

Power-supply designers can satisfy system demands for higher power and greater efficiency using the latest 900-V MDmesh K5 super-junction MOSFETs from [STMicroelectronics](#), which deliver best-in-class on-resistance ($R_{DS(ON)}$) and dynamic characteristics according to the vendor.

A 900-V breakdown voltage assures extra safety margin in systems with high bus voltages. The series is said to offer the first 900-V MOSFETs with $R_{DS(ON)}$ below 100 m Ω , and gives the industry's best $R_{DS(ON)}$ among DPAK devices (see the figure.) These MOSFETs also claim the industry's lowest gate charge (Q_g), enabling faster switching for greater flexibility where a wide input-voltage range is required.

These characteristics ensure high efficiency and reliability in all types of flyback converters including standard, quasi-resonant, and active-clamp designs covering power ratings as low as 35 W up to 230 W or higher. In addition, low input and output capacitances (C_{ISS} , C_{OSS}) enable zero-voltage switching with minimal energy loss in half-bridge LLC resonant converters.

The increased safety margin and superior static and dynamic behavior of the new devices enable designers to improve the performance of a wide variety of products such as server power supplies, three-phase switched-mode power supplies, LED lighting supplies, electric-vehicle chargers, solar generators, welders, industrial drives, and factory automation.

These MOSFETs are available immediately, priced from \$0.73 each for the STD4N90K5 in DPAK package for orders of 1000 pieces. For further information visit www.st.com/mdmeshk5.

900V MDmesh K5 MOSFETs deliver best-in-class features



Figure. The 900-V MDmesh K5 super-junction MOSFETs are said to be the first 900-V MOSFETs with on-resistance below 100 m Ω and the best $R_{DS(ON)}$ among DPAK devices. Also, claiming the lowest gate charge (Q_g), these devices promise faster switching for greater flexibility where a wide input-voltage range is required.