

750-V SiC MOSFETs Feature Low On-Resistance And Top-Side Cooled Packages

[Infineon Technologies](#) has launched new packages for its CoolSiC MOSFET 750-V G2 technology, engineered to deliver highest system efficiency and power density in automotive and industrial power conversion applications. The CoolSiC 750-V G2 MOSFETs are now available in a range of packages, including Q-DPAK and D2PAK (see the figure), offering a portfolio with typical $R_{DS(ON)}$ values ranging from 4 mΩ to 60 mΩ at 25°C.

The portfolio extension includes products for various applications, such as onboard chargers and HV-LV dc-dc converters in the automotive sector, and server and telecom SMPSs, along with EV charging infrastructure in the industrial applications. The low $R_{DS(ON)}$ value of 4 mΩ enables applications that require exceptional static-switching performance, such as eFuse, high-voltage battery disconnect switches, solid-state circuit breakers, and solid-state relays. This performance enables designers to create more efficient, compact, and reliable systems that meet the most demanding requirements, says the vendor.

One of the key features of the CoolSiC MOSFET 750-V G2 technology is its innovative top-side-cooled Q-DPAK package, which provides optimal thermal performance and reliability, according to the vendor. This package is designed to handle high-power applications with ease, making it an attractive choice for designers seeking to push the boundaries of power density and efficiency. According to the vendor, the technology also exhibits excellent $R_{DS(ON)} \times Q_{oss}$ and best-in-class $R_{DS(ON)} \times Q_{fr}$, contributing to reduced switching loss in both hard-switching and soft-switching topologies with superior efficiency in hard-switching user cases.

Additionally, the CoolSiC MOSFETs 750-V G2 offer a combination of high threshold voltage $V_{GS(TH)}$ typ. of 4.5 V at 25°C and low Q_{GD}/Q_{GS} ratio, which reinforce robustness against parasitic turn-on (PTO). Furthermore, the technology allows for extended gate-driving capabilities, supporting static gate voltages of up to -7 V and transient gate voltages of up to -11 V. This enhanced voltage tolerance provides engineers with greater design margins and best compatibility with other devices in the market, says the vendor.

The CoolSiC MOSFET 750 V G2 Q-DPAK 4-, 7-, 20-, 33-, 40- and 50-mΩ and D2PAK 7-, 25-, 33-, 40-, 50- and 60-mΩ samples are available now. For more information, see the 750-V Silicon Carbide MOSFETs [page](#).

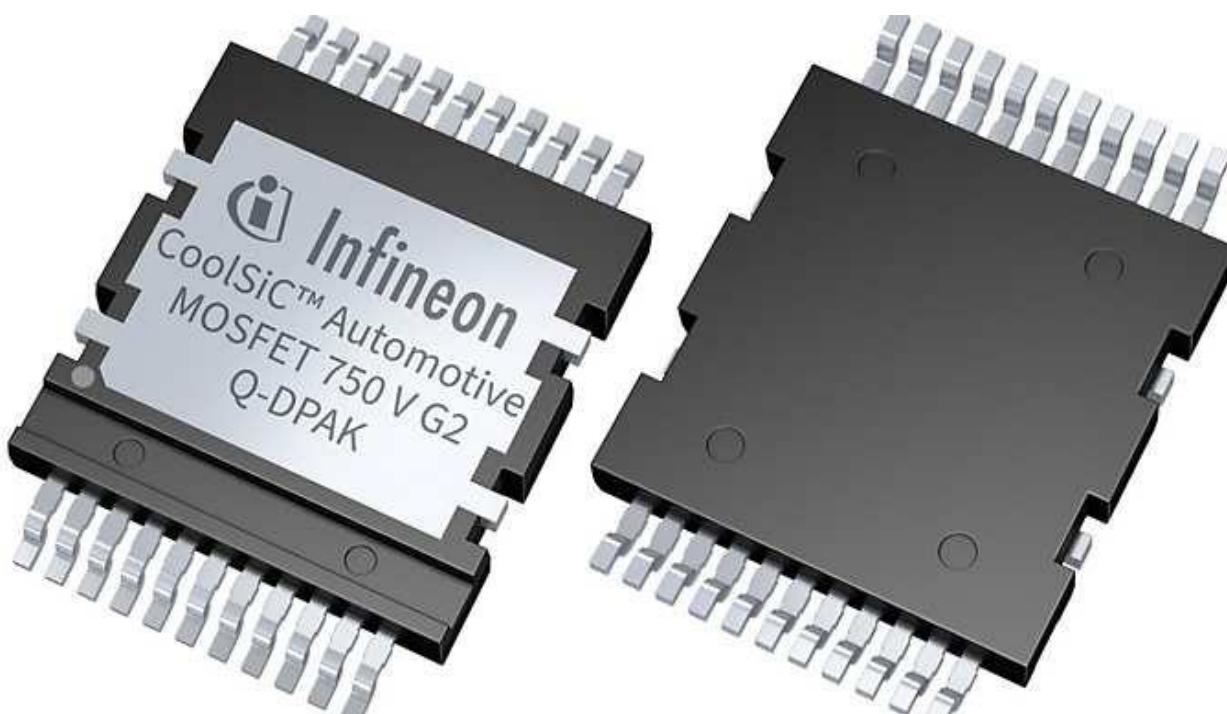


Figure. One of the key features of the CoolSiC MOSFET 750-V G2 technology is its innovative top-side cooled Q-DPAK package, which provides optimal thermal performance and reliability.