

Company Adds SiC JFETs For Solid-State Power Distribution

[Infineon Technologies](#) is expanding its silicon carbide (SiC) portfolio with the introduction of the CoolSiC JFET product family—the company's first SiC JFETs in a portfolio that already includes SiC MOSFETs and power modules. The 750-V and 1200-V JFET devices deliver minimized conduction losses, solid turn-off capability, and high robustness, making them well suited for advanced solid-state protection and distribution. The product family was demonstrated at the Infineon booth at the recent PCIM Europe 2025 in Nuremberg, after being previewed during the [Infineon press dinner](#) at APEC 2025 in March.

With robust short-circuit capability, thermal stability in linear mode, and precise overvoltage control, CoolSiC JFETs enable reliable and efficient system performance in a wide range of industrial and automotive applications, including solid-state circuit breakers (SSCBs), AI data center hot-swaps, eFuses, motor soft starters, industrial safety relays, and automotive battery disconnect switches.

"With CoolSiC JFET, we are addressing the growing demand for smarter, faster, and more robust power distribution systems," says Peter Wawer, division president Green Industrial Power at Infineon Technologies. "This application-driven power semiconductor technology is specifically designed to provide our customers with the tools they need to solve the complex challenges in this rapidly evolving space. We are proud to introduce devices that achieve best-in-class $R_{DS(ON)}$, setting a new standard for SiC performance and reaffirming Infineon's leadership in the field of wide-bandgap technology."

The first generation of CoolSiC JFETs features ultra-low $R_{DS(ON)}$ starting at 1.5 m Ω (750 V $_{BDSS}$) and 2.3 m Ω (1200 V $_{BDSS}$), significantly reducing conduction losses. The bulk-channel optimized SiC JFET offers high robustness under short-circuit and avalanche failure conditions. Housed in a Q-DPAK top-side cooled package (see the figure), the devices support easy paralleling and scalable current handling, enabling compact, high-power systems with flexible layout and integration options. Their predictable switching behavior under thermal stress, overload and fault conditions provides maximum long-term reliability in continuous operation.

To meet the thermal and mechanical challenges of harsh application environments, CoolSiC JFETs leverage Infineon's advanced .XT interconnection technology with diffusion soldering. This significantly improves transient thermal impedance and robustness under pulsed and cyclic loads typical of industrial power systems. Tested and qualified under real-world operating conditions of solid-state power switches and based on the industry-standard Q-DPAK package, the devices enable quick and seamless design integration in both industrial and automotive applications.

Engineering samples of the new CoolSiC JFET family will be available later in 2025, with volume production starting in 2026. The product portfolio will be further expanded with a variety of packages and modules. More information is available at www.infineon.com/jfet.

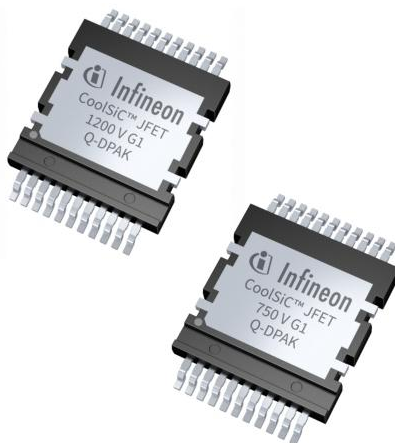


Figure. To enable the next generation of solid-state power distribution systems, Infineon is expanding its SiC portfolio with the introduction of the company's first SiC JFETs, which are members of the CoolSiC JFET product family.