

## 700-V MOSFETs And Schottkys Extend SiC Options For Designers

[Microchip Technology](#), via its Microsemi subsidiary, has released to production a family of SiC power devices that offer proven ruggedness and the performance benefits of wide-bandgap technology. Complemented by Microchip's broad range of microcontrollers (MCUs) and analog solutions, the SiC devices join a growing family of reliable SiC products that meet the needs of electric vehicles (EVs) and other high-power applications in fast-growing markets.

Microchip's 700-V SiC MOSFETs and 700-V and 1200-V SiC Schottky Barrier Diodes (SBDs) join its existing portfolio of SiC power modules. The more than 35 discrete products that Microchip has added to its portfolio are available in volume, supported by comprehensive development services, tools and reference designs, and offer outstanding ruggedness proven through rigorous testing. Microchip now offers a broad family of SiC die, discretes and power modules across a range of voltage, current ratings and package types (see the figure).

"SiC technology's accelerated evolution and adoption has begun, and Microchip offers both a long heritage in this market and the ongoing commitment to playing a leadership role in ensuring that global supply continues to meet growing demand for these products," said Rich Simoncic, senior vice president of Microchip's Discrete and Power Management business unit. "We are building out our portfolio with reliable products that are backed by the strong support infrastructure and supply chain that our customers need to execute and scale their development programs."

Microchip's SiC MOSFETs and SBDs offer more efficient switching at higher frequencies and pass ruggedness tests at levels considered critical for guaranteeing long-term reliability. The company's SiC SBDs perform approximately 20% better than other SiC diodes in the unclamped inductive switching (UIS) ruggedness tests that measure how well devices withstand degradation or premature failure under avalanche conditions, which occur when a voltage spike exceeds the device's breakdown voltage.

Microchip's SiC MOSFETs also outperform alternatives in these ruggedness tests, demonstrating excellent gate oxide shielding and channel integrity with little lifetime degradation in parameters even after 100,000 cycles of repetitive UIS (RUIS) testing. Microchip is one of the few suppliers to provide a range of both silicon and SiC discrete and module solutions. According to the company, its products are well suited for the growing number of EV systems including external charging stations, onboard chargers, dc-dc converters and powertrain/traction control solutions.

Microchip's expanded SiC portfolio is supported by a range of SiC SPICE models, SiC driver board reference designs and a power factor correction Vienna reference design. All the company's SiC products are available in production volumes along with their associated support offerings. A variety of die and package options are available for the SiC MOSFETs and SiC diodes. For additional information see the [website](#).

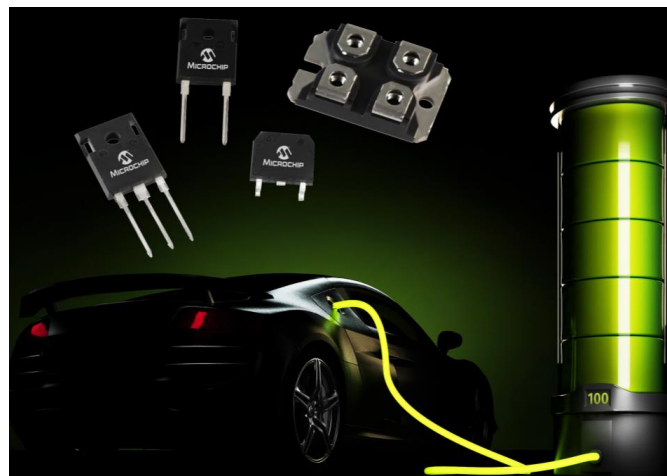


Figure. Microchip's 700-V SiC MOSFETs and 700-V and 1200-V SiC Schottky barrier diodes join its existing portfolio of SiC power modules.