

## 6.5-kV SiC MOSFETs Offer High Performance For Medium-Voltage Applications

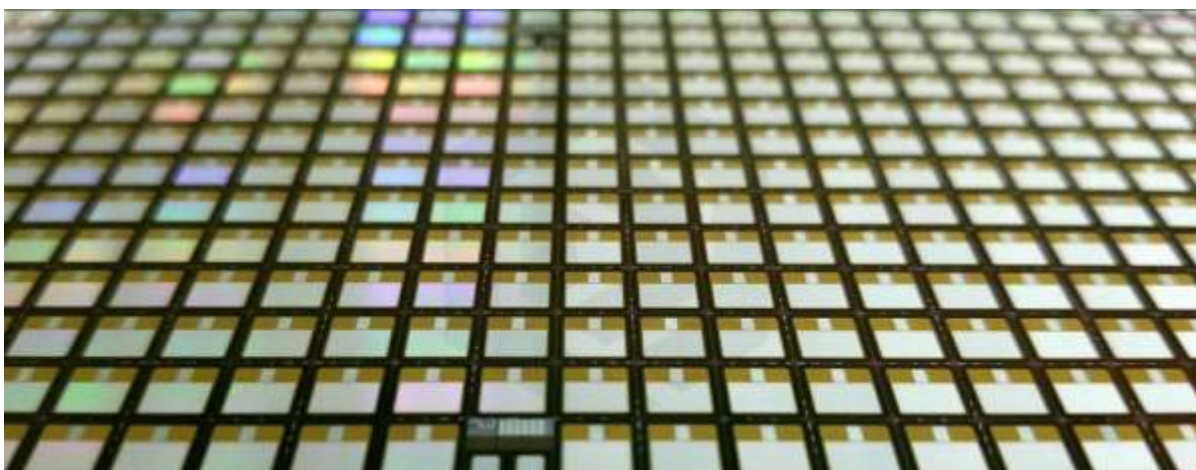
[GeneSiC Semiconductor's](#) G2R300MT65-CAL and G2R325MS65-CAL are 6.5-kV SiC MOSFET bare chips, offering 300-m $\Omega$  and 325-m $\Omega$  on-resistance, respectively (see the figure). The latter device also features an integrated Schottky. In addition to these devices, which are immediately available, the company is offering the G2R100MT65-CAL, a 100-m $\Omega$  6.5-kV SiC MOSFET bare chip. Full SiC modules utilizing this technology are soon to be released.

These 6.5-kV SiC MOSFETs are said to deliver unprecedented levels of performance, efficiency and reliability in medium-voltage power conversion applications such as traction, pulsed power and smart grid infrastructure. GeneSiC's innovation features a SiC double-implanted metal oxide semiconductor (DMOSFET) device structure with a junction barrier Schottky (JBS) rectifier integrated into the SiC DMOSFET unit cell. This leading-edge power device can be used in a variety of power conversion circuits in the next generation of power conversion systems.

Other significant advantages include more efficient bidirectional performance, temperature independent switching, low switching and conduction losses, reduced cooling requirements, superior long-term reliability, ease of paralleling devices and cost benefits. GeneSiC's technology offers superior performance and also has the potential to reduce the net SiC material footprint in power converters.

"GeneSiC's 6.5-kV SiC MOSFETs are designed and fabricated on 6-inch wafers to realize low on-state resistance, highest quality, and superior price-performance index. This next-generation MOSFET technology featuring an on-chip integrated JBS diode promises exemplar performance, superior ruggedness and long-term reliability for medium-voltage power conversion applications" said Siddarth Sundaesan, VP of Technology at GeneSiC Semiconductor.

GeneSiC's 6.5-kV G2R SiC MOSFET technology also features high avalanche (UIS) and short circuit ruggedness, a superior  $Q_G \times R_{DS(ON)}$  figure of merit, temperature independent switching losses, low capacitances and low gate charge, low losses at all temperatures, normally-off stable operation up to 175°C and +20-V/-5-V gate drive. For datasheet and other resources, visit [www.genesicsemi.com/sic-mosfet/bare-chip](http://www.genesicsemi.com/sic-mosfet/bare-chip) or contact [sales@genesicsemi.com](mailto:sales@genesicsemi.com)



*Figure. Offering 300-m $\Omega$ , 325-m $\Omega$  and 100-m $\Omega$  on-resistance, these 6.5-kV SiC MOSFETs are said to deliver unprecedented levels of performance, efficiency and reliability in medium-voltage power conversion applications such as traction, pulsed power and smart grid infrastructure.*