

1200V Voltage Resistance SiC MOSFETs

SCT2080KE / SCH2080KE



Provides simultaneous high voltage resistance, low ON resistance, high-speed switching, and fast recovery

Product Outline

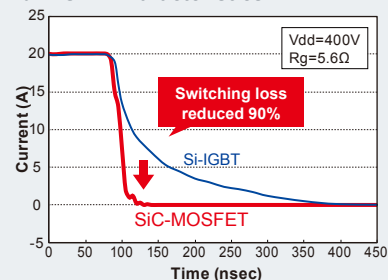
ROHM's 1200V SiC MOSFETs provide low loss during high frequency operation. In particular, switching loss is reduced by 90% compared with Si IGBTs, decreasing both chip size and costs. In addition, improved processes related to crystal defects and optimized device structure ensure high reliability. ROHM also offers the industry's first* SiC MOSFET that integrates an SiC-SBD in the same package for low V_F , making it ideal for inverter applications and more.

*ROHM June 2012 survey

Low switching loss contributes to improved energy savings and increased miniaturization

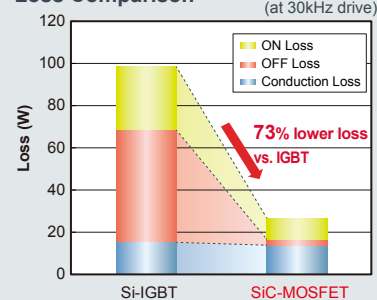
ROHM SiC MOSFETs achieve high-speed switching and high voltage resistance not possible with their silicon counterparts. As a result, turn OFF loss is reduced by over 90%, while high-speed diode recovery characteristics reduce loss by 73% over silicon IGBTs during operation for minimal power consumption.

Turn OFF Characteristics



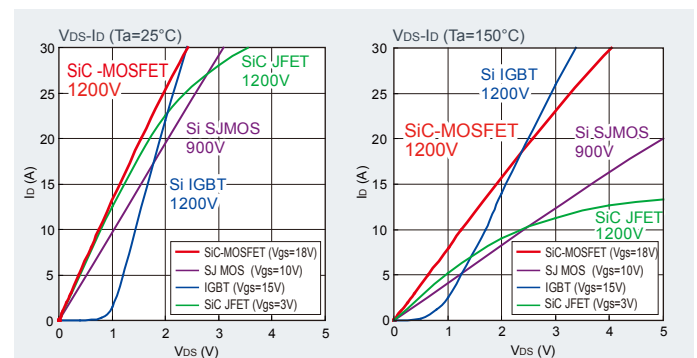
SiC not only provides greater energy savings and efficiency, but also enables smaller peripheral components to be used during high-frequency (30kHz over) operation, contributing to end-product miniaturization.

Loss Comparison

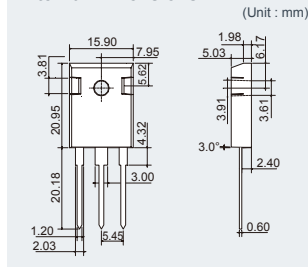


VDS-ID characteristics comparison

Innovations such as gate oxidizing conditions enable an ON resistance per-unit-area 29% lower than conventional products, resulting in the lowest ON resistance at 1200V in the TO-247 MOSFET class*. In addition, low ON resistance is maintained even at high temperatures, and no voltage rise ensures low loss even during light loads.



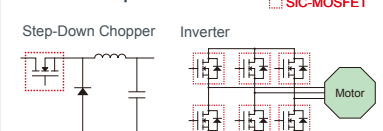
External Dimensions



Applications

- Industrial equipment
- Power conditioners and more etc

<Circuit Examples>

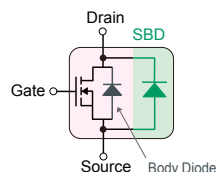


■ Lineup

| Part No. | BV_{DSS} | $R_{DS(on)}$ | Package |
|--------------------------------|------------|--------------|---------|
| SCT2080KE (SiC-MOSFET) | 1200V | 80mΩ | TO-247 |
| SCH2080KE (SiC-MOSFET+SiC SBD) | 1200V | 80mΩ | TO-247 |

SiC-MOSFET and SiC-SBD integrated into a single package

ROHM's SCH2080KE SiC MOSFET integrates an SiC-SBD for low V_F , reduced switching loss, low ON resistance, and low recovery loss, making it ideal for inverter applications. In addition, fewer components are required, contributing to greater space savings.



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The content specified in this document is correct as of 11th June, 2012.