SiC Custom Power Services

Wolfspeed offers early access to our newest innovations in SiC power device and module technology through our power services pre-released products. These power services products include our pre-released 900V - 15kV Gen3 SiC MOSFETs. In addition, custom power services includes future generation 15kV SiC n-IGBTs, and 15kV SiC p-GTOs. All of these are available as device die or as packaged devices. In addition, our power services products include our pre-released 650V - 10kV SiC power modules. These advanced SiC power devices and modules offer improved conduction and switching performance across a broad voltage range, leading to higher efficiency and higher frequency operation. These next-generation SiC power devices and modules will enable you to select optimal voltage rating and efficiency for your end-system application, which will dramatically reduce the size and weight of your power system. Wolfspeed's custom power services also offers system-level optimization to help customers integrate our products into their custom system to reach the most efficient, highest power-density solution possible.

At Wolfspeed we collaborate with you to provide custom design services. It’s our mission to challenge the status quo, to stretch limits, to push past conventional thinking to conceive ever more efficient power devices.

Tomorrow’s Technology Today

- 900V to 1700V Gen3 SiC MOSFETs
- 3.3kV to 15kV Gen3 SiC MOSFETs
- 3.3kV to 10kV SiC Schottky (JBS) Diodes
- 15kV SiC n-IGBTs
- 15kV SiC p-GTOs
- 650V to 10kV SiC Power Modules
- Pre-released 900V to 15kV Gen3 SiC MOSFET Die and Packaged Devices
- Future generation 15kV SiC n-IGBT and SiC p-GTO Die and Packaged Devices
- Advanced 650V to 10kV SiC Power Modules
Advantages of SiC Power Technology

- **Reduced** Conduction and Switching Losses at Higher Voltages
- **Higher** Efficiency and Higher Frequency Operation
- **Reduced** Power System Size and Weight

### High Speed Switching of 10kV – 15kV SiC MOSFETs

![Graph comparing switching frequency and maximum RMS current for different SiC MOSFETs and IGBTs.]

- **6.5 kV Si IGBT**
  - $V_{BUS} = 3.6$ kV, $T_J = 125^\circ$C
- **10 kV Gen3 SiC MOSFET**
  - $V_{BUS} = 6$ kV, $T_J = 150^\circ$C
- **15 kV Gen3 SiC MOSFET**
  - $V_{BUS} = 10$ kV, $T_J = 150^\circ$C

### Conduction Performance of SiC Power Devices at Higher Voltages

![Graph showing conduction performance with breakdown voltage and on-state resistance.]

- **27.5 kV SiC n-IGBT**
- **22.5 kV SiC n-IGBT**
- **15kV Gen3 SiC MOSFET**
- **10kV Gen3 SiC MOSFET**
- **6.5kV Gen3 SiC MOSFET**
- **22.5 kV SiC p-GTO**
- **15 kV SiC p-GTO**
- **27.5 kV SiC n-IGBT**

**Advantages of SiC Power Technology**

- Reduced Conduction and Switching Losses at Higher Voltages
- Higher Efficiency and Higher Frequency Operation
- Reduced Power System Size and Weight

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**Pre-release SiC Power Devices and Modules**

- 15kV SiC p-GTO
- 15kV SiC n-IGBT
- 10kV SiC MOSFETs
- 10kV, 120A SiC Power Module
- System-Level Optimization

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**Learn More:**

Visit [wolfspeed.com/power](http://wolfspeed.com/power) to learn more about our products and services.

Have additional questions? Contact us at [power@wolfspeed.com](mailto:power@wolfspeed.com)