New-Generation SiC MPS Diodes with low knee voltages

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**SiC MPS™ Diode with Low Built-in-Voltage**

**Novel Design**

GeneSiC Merged-Pin Schottky (MPS™) design combines the best features from both - Schottky and PIN diode structures, producing the lowest forward voltage drop ($V_F$), high surge-current capability ($I_{FSM}$), and minimized temperature-independent ultra-low switching losses.

Proprietary thin-chip technology further reduces $V_F$ and improves thermal dissipation for cooler operation.

**Low Built-In Voltage Biasing**

Low-built-in voltage biasing technology for highest efficiency across all load conditions with superior robustness.

**Excellent $Q_c*V_F$ FoM**

Excellent figure of merit (FoM) comprising of a low $V_F$ (1.3V) and low capacitive charge ($Q_c$).

**Highest Efficiency**

Higher Efficiency across all load conditions.

Gen5 MPS™ diodes are ideal in PFC circuits in CCM due to excellent FoM. Zero diode reverse recovery improves MOSFET turn-on performance, resulting in a cooler, more reliable system.
Low Built-In Voltage and Low $V_F$ for Lowest Losses at All Load Conditions

- Gen5 technology with low built-in voltage and low VF optimized for best-in-class efficiency in rectification and PFC circuits used in OBC, SMPS and UPS.

PFC (2x GE08MPS06A)
- $I_{RMS} = 7.9 \text{ A}; I_{AVG} = 7.1 \text{ A (Per Diode)}$
- **9% Lower SiC Diode Losses**
- Best-in-class Efficiency & Cooler Operation
Built to the Highest Level of Reliability

- 100% avalanche (UIL) production tested to ensure the highest level of ruggedness in over-voltage conditions.
- Best-in-class robustness and ruggedness for applications demanding high surge current and avalanche capability.
## Typical Applications and Circuits

<table>
<thead>
<tr>
<th>Application</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Boost (Solar Inverter)</strong></td>
<td>Boost converters are used in Solar inverters to generate a fixed, higher DC voltage. SiC diodes in QFN8x8 and TO-252 offering highest efficiencies for &lt;3 kW microinverters.</td>
</tr>
<tr>
<td><strong>CCM PFC</strong></td>
<td>For PFC applications such as continuous-current mode (CCM) that require fastest reverse recovery to minimize switching losses and increase system efficiency, the TO-220-2 offer excellent performance with high thermal dissipation.</td>
</tr>
<tr>
<td><strong>Interleaved PFC</strong></td>
<td>The TO-247-3 package offers great flexibility for higher power density and BOM reduction in applications like the interleaved power factor correction (PFC) that shares a common cathode between two diodes.</td>
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</tbody>
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**Applications:**
- PC Power
- LED/LCD TVs
- Solar microinverters
- Motion Control
- Server/Telecom Power
- Lighting
# SiC MPS™ Diode Portfolio

## Portfolio

<table>
<thead>
<tr>
<th>V_{RRM} (V)</th>
<th>I_F (A)</th>
<th>PQFN 8x8</th>
<th>TO-252-2 DPAK</th>
<th>TO-220-2</th>
<th>TO-247-3</th>
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</thead>
<tbody>
<tr>
<td>4</td>
<td>GE04MPS06Q</td>
<td>GE04MPS06E</td>
<td>GE04MPS06A</td>
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<td>GE2X12MPS06D</td>
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