Industry-Leading Portfolio, Innovation and Scale

UNPRECEDENTED PERFORMANCE & SCALE

With more than 30 years of development and manufacturing experience, Wolfspeed is driving innovation with the industry’s broadest range of SiC and GaN materials. Delivering substrate and epitaxy options up to 150mm diameter, Wolfspeed provides a vertically integrated materials product offering that combines industry-leading volume, scale, quality and a vast intellectual property portfolio.

When you partner with Wolfspeed, you get the best and most innovative materials.

MATERIALS PORTFOLIO

**Supported Diameters**
- 100 mm
- 150 mm

**SiC Substrates**
- n-type
- High Purity Si

**SiC Epitaxy**
- n-type
- p-type
- Thick epitaxy

**Nitride Epitaxy**
- GaN, AlN
- AlGaN, AlInN
- SiN
- HEMT structures

Learn how Wolfspeed can revolutionize your designs at [wolfspeed.com/materials](http://wolfspeed.com/materials) or contact us at materials_sales@wolfspeed.com or +1.919.313.5300.

Our materials are ISO-TS 16949 certified. The information in this document is subject to change without notice. Document revised August 30, 2019.

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# N-TYPE SiC SUBSTRATE PRODUCT DESCRIPTIONS

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>W4NRF4C-V200</td>
<td>4H-SiC, n-type, Research Grade, 100mm, 4° Off-Axis, 0.015-0.028 ohm-cm, Very Low MPD ≤5/cm², 350µm Thick w/ 32.5mm Flat, Double-Sided Polish Si Face CMP Epi Ready, Bare Substrate</td>
</tr>
<tr>
<td>W4NPF4C-V200</td>
<td>4H-SiC, n-type, Production Grade, 100mm, 4° Off-Axis, 0.015-0.028 ohm-cm, Very Low MPD ≤5/cm², 350µm Thick w/ 32.5mm Flat, Double-Sided Polish Si Face CMP Epi Ready, Bare Substrate</td>
</tr>
<tr>
<td>W4NRF4C-U200</td>
<td>4H-SiC, n-type, Research Grade, 100mm, 4° Off-Axis, Ultra Low MPD ≤1/cm², 350µm Thick w/ 32.5mm Flat, Double-Sided Polish Si Face CMP Epi Ready, Bare Substrate</td>
</tr>
<tr>
<td>W4NPF4C-U200</td>
<td>4H-SiC, n-type, Production Grade, 100mm, 4° Off-Axis, Ultra Low MPD ≤1/cm², 350µm Thick w/ 32.5mm Flat, Double-Sided Polish Si Face CMP Epi Ready, Bare Substrate</td>
</tr>
<tr>
<td>W4NPF4C-B200</td>
<td>4H-SiC, n-type, Production Grade, 100mm, 4° Off-Axis, Ultra Low MPD ≤1/cm², Low BPD ≤1500/cm², 350µm Thick w/ 32.5mm Flat, Double-Sided Polish Si Face CMP Epi Ready, Bare Substrate</td>
</tr>
<tr>
<td>W4NRG4C-C1-V200</td>
<td>4H-SiC, n-type, Research Grade, 150mm, 4° Off-Axis, 0.015-0.028 ohm-cm, Very Low MPD ≤5/cm², 350µm Thick w/ 47.5mm Flat, Double-Sided Polish Si Face CMP Epi Ready, Bare Substrate</td>
</tr>
<tr>
<td>W4TPG4C-C1-V200</td>
<td>4H-SiC, n-type, Production Grade, 150mm, 4° Off-Axis, 0.015-0.028 ohm-cm, Very Low MPD ≤5/cm², 350µm Thick w/ 47.5mm Flat, Double-Sided Polish Si Face CMP Epi Ready, Bare Substrate</td>
</tr>
<tr>
<td>W4NRG4C-C1-L200</td>
<td>4H-SiC, n-type, Research Grade, 150mm, 4° Off-Axis, Ultra Low MPD ≤1/cm², 350µm Thick w/ 47.5mm Flat, Double-Sided Polish Si Face CMP Epi Ready, Bare Substrate</td>
</tr>
<tr>
<td>W4TPG4C-C1-L200</td>
<td>4H-SiC, n-type, Production Grade, 150mm, 4° Off-Axis, Ultra Low MPD ≤1/cm², 350µm Thick w/ 47.5mm Flat, Double-Sided Polish Si Face CMP Epi Ready, Bare Substrate</td>
</tr>
<tr>
<td>W4NPFG4C-C1-B200</td>
<td>4H-SiC, n-type, Production Grade, 150mm, 4° Off-Axis, Ultra Low MPD ≤1/cm², Low BPD ≤1500/cm², 350µm Thick w/ 47.5mm Flat, Double-Sided Polish Si Face CMP Epi Ready, Bare Substrate</td>
</tr>
</tbody>
</table>

# HIGH PURITY SEMI-INSULATING SiC SUBSTRATE PRODUCT DESCRIPTIONS

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>W4TRF0R-0200</td>
<td>4H-SiC, HPSI, Research Grade, 100mm, On-Axis, ≥1E6 ohm-cm, Standard MPD, 500µm Thick w/ 32.5mm Flat, Double-Sided Polish Si Face CMP Epi Ready, Bare Substrate</td>
</tr>
<tr>
<td>W4TPF0R-0200</td>
<td>4H-SiC, HPSI, Production Grade, 100mm, On-Axis, ≥1E6 ohm-cm, Standard MPD, 500µm Thick w/ 32.5mm Flat, Double-Sided Polish Si Face CMP Epi Ready, Bare Substrate</td>
</tr>
<tr>
<td>W4TRG0R-N-0200</td>
<td>4H-SiC, HPSI, Research Grade, 150mm, On-Axis, ≥1E6 ohm-cm, Standard MPD, 500µm Thick w/ Notch, Double-Sided Polish Si Face CMP Epi Ready, Bare Substrate</td>
</tr>
<tr>
<td>W4TPG0R-N-0200</td>
<td>4H-SiC, HPSI, Production Grade, 150mm, On-Axis, ≥1E6 ohm-cm, Standard MPD, 500µm Thick w/ Notch, Double-Sided Polish Si Face CMP Epi Ready, Bare Substrate</td>
</tr>
<tr>
<td>W4NPFG4C-C1-B200</td>
<td>4H-SiC, n-type, Production Grade, 150mm, 4° Off-Axis, Ultra Low MPD ≤1/cm², Low BPD ≤1500/cm², 350µm Thick w/ 47.5mm Flat, Double-Sided Polish Si Face CMP Epi Ready, Bare Substrate</td>
</tr>
</tbody>
</table>

# How to Order

- **W** = Standard
- **N** = n-type
- **T** = HPSI
- **F** = 100mm (4”)  
  **G** = 150mm (6”)  
- **C** = 0.015 - 0.028Ω·cm  
  **Q** = <1E6Ω·cm  
  **R** = ≥1E6Ω·cm  
  **X** = 0.013 - 2.00Ω·cm  
- **P** = Production  
  **R** = Research  
- **C1** = 350µm Thickness  
  **N** = 500µm Thickness w/ notch  
  This digit only applicable to 150mm wafers.  
- **0** = Standard MPD  
  **V** = Very-Low MPD (≤5/cm²)  
  **U** = Ultra-Low MPD (≤1/cm²)  
  **B** = Low BPD (≤1500/cm²), MPD (≤1/cm²)  
- **0** = None  
  **S** = Standard SiC (>30µm)  
  **T** = Thick SiC (≥30µm)  
- **G** = GaN Epitaxy  
  **SIC Epitaxy:**  
  **0** = No Epitaxy  
  **1** = 1 Layer  
  **2** = 2 Layer  
  **3** = 3 Layer  
  **4** = 4 Layer  
- **GaN Epitaxy:**  
  **0** = No Epitaxy  
  **A** = HEMT ≤ 25% Al  
  **E** = HEMT > 25% Al  
  **I** = Other HEMT

Learn how Wolfspeed can revolutionize your designs at [wolfspeed.com/materials](http://wolfspeed.com/materials)  
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