Vishay General Semiconductor

Single-Phase Single In-Line Bridge Rectifiers

**Features**
- UL recognition file number E54214
- Thin single in-line package
- Glass passivated chip junction
- High surge current capability
- High case dielectric strength of 2500 V<sub>RMS</sub>
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

**Typical Applications**
General purpose use in AC/DC bridge full wave rectification for switching power supply, home appliances, office equipment, industrial automation applications.

**Mechanical Data**
- **Case:** GSIB-5S
- Molding compound meets UL 94 V-0 flammability rating
- **Base P/N-E3** - RoHS-compliant, commercial grade
- **Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
- **E3 suffix** meets JESD 201 class 1A whisker test
- **Polarity:** As marked on body
- **Mounting Torque:** 10 cm-kg (8.8 inches-lbs) max.
- **Recommended Torque:** 5.7 cm-kg (5 inches-lbs)

**Primary Characteristics**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>GSIB2520</th>
<th>GSIB2540</th>
<th>GSIB2560</th>
<th>GSIB2580</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum repetitive peak reverse voltage</td>
<td>V&lt;sub&gt;RRM&lt;/sub&gt;</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>V</td>
</tr>
<tr>
<td>Maximum RMS voltage</td>
<td>V&lt;sub&gt;RMS&lt;/sub&gt;</td>
<td>140</td>
<td>280</td>
<td>420</td>
<td>560</td>
<td>V</td>
</tr>
<tr>
<td>Maximum DC blocking voltage</td>
<td>V&lt;sub&gt;DC&lt;/sub&gt;</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>V</td>
</tr>
<tr>
<td>Maximum average forward rectified output current at T&lt;sub&gt;C = 98 °C&lt;/sub&gt;</td>
<td>I&lt;sub&gt;F(AV)&lt;/sub&gt;</td>
<td>25</td>
<td>3.5</td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Peak forward surge current single sine-wave superimposed on rated load</td>
<td>I&lt;sub&gt;FSM&lt;/sub&gt;</td>
<td>350</td>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Rating for fusing (t &lt; 8.3 ms)</td>
<td>P&lt;sub&gt;t&lt;/sub&gt;</td>
<td>500</td>
<td></td>
<td></td>
<td></td>
<td>A&lt;sup&gt;2&lt;/sup&gt;s</td>
</tr>
<tr>
<td>Operating junction and storage temperature range</td>
<td>T&lt;sub&gt;J, TSTG&lt;/sub&gt;</td>
<td>-55 to +150</td>
<td></td>
<td></td>
<td></td>
<td>°C</td>
</tr>
</tbody>
</table>

Notes
(1) Unit case mounted on aluminum plate heatsink
(2) Units mounted on PCB without heatsink

**Electrical Characteristics**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Test Conditions</th>
<th>Symbol</th>
<th>GSIB2520</th>
<th>GSIB2540</th>
<th>GSIB2560</th>
<th>GSIB2580</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum instantaneous forward voltage drop per diode</td>
<td>V&lt;sub&gt;F&lt;/sub&gt;</td>
<td>12.5 A</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Maximum DC reverse current at rated DC blocking voltage per diode</td>
<td>I&lt;sub&gt;R&lt;/sub&gt;</td>
<td>T&lt;sub&gt;A = 25 °C&lt;/sub&gt;</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td>μA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>T&lt;sub&gt;A = 125 °C&lt;/sub&gt;</td>
<td>350</td>
<td></td>
<td></td>
<td></td>
<td>μA</td>
</tr>
</tbody>
</table>

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For technical questions within your region: DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com

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Document Number: 88646
**THERMAL CHARACTERISTICS** (\(T_A = 25\) °C unless otherwise noted)

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>SYMBOL</th>
<th>GSIB2520</th>
<th>GSIB2540</th>
<th>GSIB2560</th>
<th>GSIB2580</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical thermal resistance</td>
<td>(R_{JA}) (1)</td>
<td>22</td>
<td></td>
<td></td>
<td></td>
<td>°C/W</td>
</tr>
<tr>
<td></td>
<td>(R_{JC}) (1)</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes**

1. Unit case mounted on aluminum plate heatsink
2. Units mounted on PCB without heatsink
3. Recommended mounting position is to bolt down on heatsink with silicone thermal compound for maximum heat transfer with #6 screw

**ORDERING INFORMATION** (Example)

<table>
<thead>
<tr>
<th>PREFERRED P/N</th>
<th>UNIT WEIGHT (g)</th>
<th>PREFERRED PACKAGE CODE</th>
<th>BASE QUANTITY</th>
<th>DELIVERY MODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSIB2560-E3/45</td>
<td>7.0</td>
<td>45</td>
<td>20</td>
<td>Tube</td>
</tr>
</tbody>
</table>

**RATINGS AND CHARACTERISTICS CURVES** (\(T_A = 25\) °C unless otherwise noted)

![Fig. 1 - Derating Curve Output Rectified Current](image1)

![Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode](image2)

![Fig. 3 - Typical Forward Characteristics Per Diode](image3)

![Fig. 4 - Typical Reverse Characteristics Per Diode](image4)
PACKAGE OUTLINE DIMENSIONS in millimeters

Case Style GSIB-5S

Fig. 5 - Typical Junction Capacitance Per Diode

Fig. 6 - Typical Transient Thermal Impedance
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