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
- 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>$V_{RRM}$</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>V</td>
</tr>
<tr>
<td>Maximum RMS voltage</td>
<td>$V_{RMS}$</td>
<td>250</td>
<td>500</td>
<td>750</td>
<td>1000</td>
<td>V</td>
</tr>
<tr>
<td>Maximum DC blocking voltage</td>
<td>$V_{DC}$</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 $T_C = 98 °C$</td>
<td>$I_{FAV}$</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Peak forward surge current single sine-wave superimposed on rated load</td>
<td>$I_{FSM}$</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>$I_{2t}$</td>
<td>500</td>
<td></td>
<td></td>
<td></td>
<td>A²s</td>
</tr>
<tr>
<td>Operating junction and storage temperature range</td>
<td>$T_J, T_{STG}$</td>
<td>-55 to +150</td>
<td></td>
<td></td>
<td></td>
<td>°C</td>
</tr>
</tbody>
</table>

**MAXIMUM RATINGS** ($T_A = 25 °C$ unless otherwise noted)

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>SYMBOL</th>
<th>GSIB2520</th>
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<th>GSIB2560</th>
<th>GSIB2580</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum instantaneous forward voltage drop per diode</td>
<td>$V_F$</td>
<td>12.5 A</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>$I_R$</td>
<td></td>
<td>10</td>
<td></td>
<td>350</td>
<td>μA</td>
</tr>
</tbody>
</table>

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

**ELECTRICAL CHARACTERISTICS** ($T_A = 25 °C$ unless otherwise noted)

<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>12.5 A</td>
<td>$V_F$</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>$T_A = 25 °C$</td>
<td>$I_R$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>μA</td>
</tr>
</tbody>
</table>

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THERMAL CHARACTERISTICS (TA = 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>RθJA</td>
<td>22</td>
<td></td>
<td></td>
<td></td>
<td>°C/W</td>
</tr>
<tr>
<td></td>
<td>RθJC</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 (TA = 25 °C unless otherwise noted)

Fig. 1 - Derating Curve Output Rectified Current

Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

Fig. 3 - Typical Forward Characteristics Per Diode

Fig. 4 - Typical Reverse Characteristics Per Diode
### PACKAGE OUTLINE DIMENSIONS in millimeters

**Case Style GSIB-5S**

![Package Outline Dimensions Diagram]

- Junction Capacitance (pF) vs. Reverse Voltage (V)
- Transient Thermal Impedance (°C/W) vs. Heating Time (s)

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**Fig. 5 - Typical Junction Capacitance Per Diode**

**Fig. 6 - Typical Transient Thermal Impedance**
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