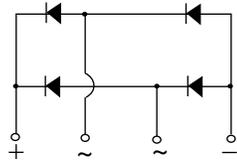
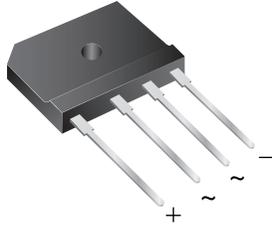


## Single-Phase Single In-Line Bridge Rectifiers



Case Style GSIB-5S



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**

### FEATURES

- UL recognition file number E54214
- Thin single in-line package
- Glass passivated chip junction
- High surge current capability
- High case dielectric strength of 1500 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](http://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-M3 - halogen-free, RoHS compliant, and commercial grade

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

M3 suffix meets JESD 201 class 1A whisker test

**Polarity:** As marked on body

**Mounting Torque:** 10 cm-kg (8.8 in-lbs) maximum

**Recommended Torque:** 5.7 cm-kg (5 in-lbs)

| PRIMARY CHARACTERISTICS |                            |
|-------------------------|----------------------------|
| Package                 | GSIB-5S                    |
| I <sub>F(AV)</sub>      | 6.0 A                      |
| V <sub>RRM</sub>        | 200 V, 400 V, 600 V, 800 V |
| I <sub>FSM</sub>        | 180 A                      |
| I <sub>R</sub>          | 10 μA                      |
| V <sub>F</sub>          | 0.95 V                     |
| T <sub>J</sub> max.     | 150 °C                     |
| Diode variations        | In-Line                    |

| MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)                       |                                   |                                       |          |          |          |                  |
|---|-----------------------------------|---------------------------------------|----------|----------|----------|------------------|
| PARAMETER   | SYMBOL                            | GSIB620N                              | GSIB640N | GSIB660N | GSIB680N | UNIT             |
| Maximum repetitive peak reverse voltage   | V <sub>RRM</sub>                  | 200                                   | 400      | 600      | 800      | V                |
| Maximum RMS voltage   | V <sub>RMS</sub>                  | 140                                   | 280      | 420      | 560      | V                |
| Maximum DC blocking voltage   | V <sub>DC</sub>                   | 200                                   | 400      | 600      | 800      | V                |
| Maximum average forward rectified output current at                                   | T <sub>C</sub> = 100 °C           | I <sub>F(AV)</sub> <sup>(1)</sup> 6.0 |          |          |          | A                |
|   | T <sub>A</sub> = 25 °C            | I <sub>F(AV)</sub> <sup>(2)</sup> 2.8 |          |          |          |                  |
| Peak forward surge current single sine-wave superimposed on rated load (JEDEC method) | I <sub>FSM</sub>                  | 180                                   |          |          |          | A                |
| Rating for fusing (t < 8.3 ms)  | I <sup>2</sup> t                  | 120                                   |          |          |          | A <sup>2</sup> s |
| Operating junction and storage temperature range                                      | T <sub>J</sub> , T <sub>STG</sub> | - 55 to + 150                         |          |          |          | °C               |

### Notes

(1) Unit case mounted on aluminum plate heatsink

(2) Units mounted on PCB with 0.5" x 0.5" (12 mm x 12 mm) copper pads and 0.375" (9.5 mm) lead length



| <b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) |                                   |        |          |          |          |          |               |
|--|-----------------------------------|--------|----------|----------|----------|----------|---------------|
| PARAMETER  | TEST CONDITIONS                   | SYMBOL | GSIB620N | GSIB640N | GSIB660N | GSIB680N | UNIT          |
| Maximum instantaneous forward voltage drop per diode   | $I_F = 3.0\text{ A}$              | $V_F$  | 0.95     |          |          |          | V             |
| Maximum DC reverse current at rated DC blocking voltage per diode                            | $T_A = 25\text{ }^\circ\text{C}$  | $I_R$  | 10       |          |          |          | $\mu\text{A}$ |
|  | $T_A = 125\text{ }^\circ\text{C}$ |        | 250      |          |          |          |               |

| <b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) |                       |          |          |          |          |                    |  |
|---|-----------------------|----------|----------|----------|----------|--------------------|--|
| PARAMETER   | SYMBOL                | GSIB620N | GSIB640N | GSIB660N | GSIB680N | UNIT               |  |
| Maximum thermal resistance  | $R_{\theta JA}^{(2)}$ | 22       |          |          |          | $^\circ\text{C/W}$ |  |
|   | $R_{\theta JC}^{(1)}$ | 3.4      |          |          |          |                    |  |

**Notes**

- (1) Unit case mounted on aluminum plate heatsink
- (2) Units mounted on PCB with 0.5" x 0.5" (12 mm x 12 mm) copper pads and 0.375" (9.5 mm) lead length
- (3) Recommended mounting position is to bolt down on heatsink with silicone thermal compound for maximum heat transfer with #6 screw

| <b>ORDERING INFORMATION</b> (Example) |                 |                        |               |               |
|---------------------------------------|-----------------|------------------------|---------------|---------------|
| PREFERRED P/N                         | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| GSIB660N-M3/45                        | 7.0             | 45                     | 20            | Tube          |

**RATINGS AND CHARACTERISTICS CURVES**

( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

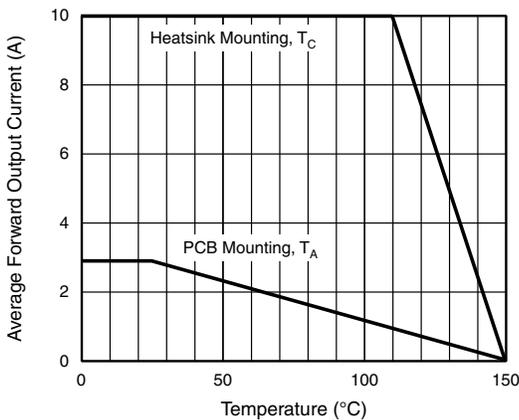


Fig. 1 - Derating Curve Output Rectified Current

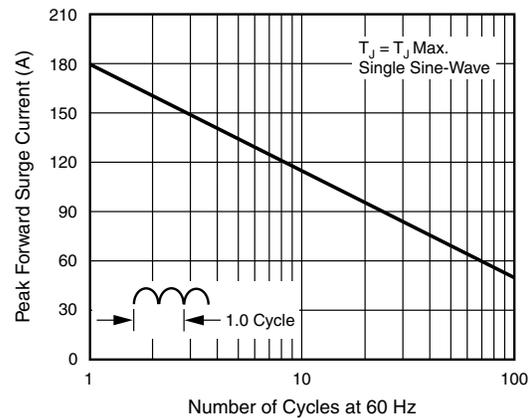


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

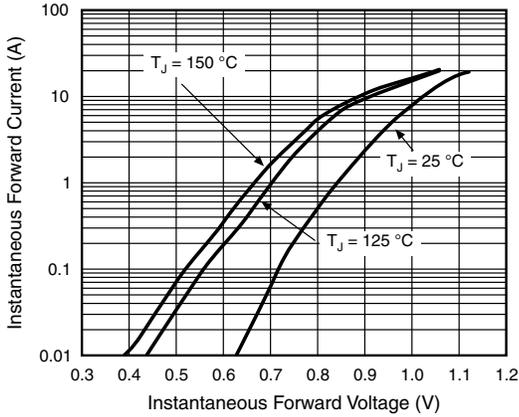


Fig. 3 - Typical Forward Characteristics Per Diode

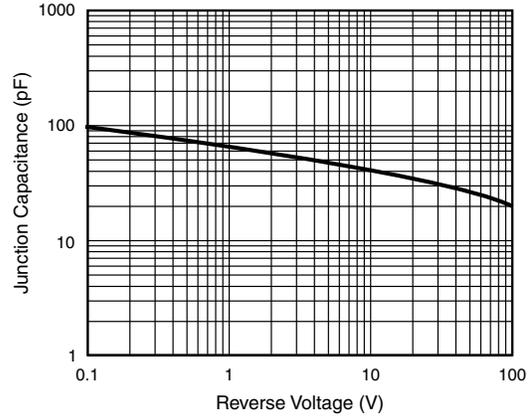


Fig. 5 - Typical Junction Capacitance Per Diode

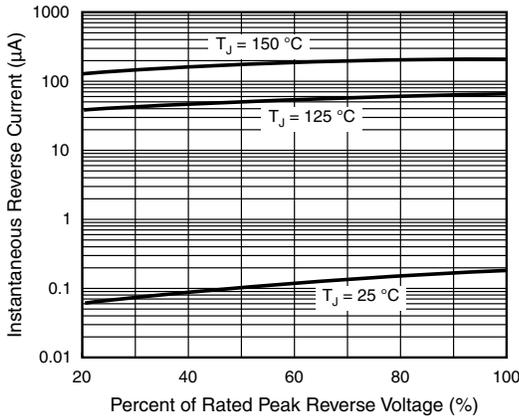


Fig. 4 - Typical Reverse Characteristics Per Diode

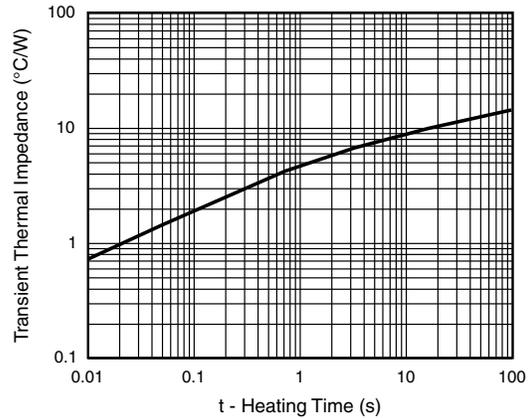
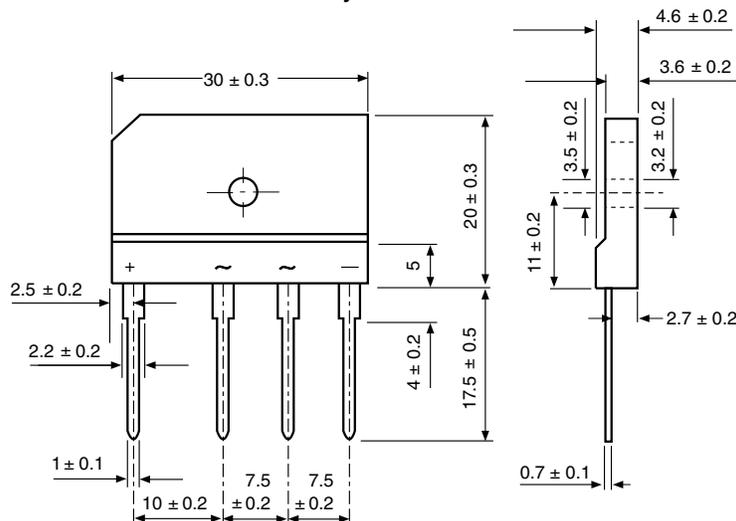


Fig. 6 - Typical Transient Thermal Impedance Per Diode

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### Case Style GSIB-5S





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