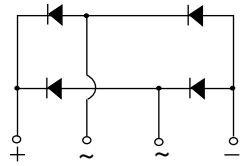
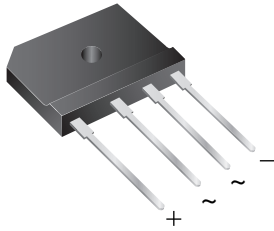


## Single-Phase Single In-Line Bridge Rectifiers



Case Style GSIB-5S

### 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](http://www.vishay.com/doc?99912)



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

### 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                    |
|------------------------|----------------------------|
| $I_{F(AV)}$            | 15 A                       |
| $V_{RRM}$              | 200 V, 400 V, 600 V, 800 V |
| $I_{FSM}$              | 300 A                      |
| $I_R$                  | 10 $\mu$ A                 |
| $V_F$ at $I_F = 7.5$ A | 0.95 V                     |
| $T_J$ max.             | 150 °C                     |
| Diode variations       | In-Line                    |

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

| PARAMETER  | SYMBOL         | GSIB1520N         | GSIB1540N | GSIB1560N | GSIB1580N | UNIT             |
|--|----------------|-------------------|-----------|-----------|-----------|------------------|
| Maximum repetitive peak reverse voltage                                | $V_{RRM}$      | 200               | 400       | 600       | 800       | V                |
| Maximum RMS voltage  | $V_{RMS}$      | 140               | 280       | 420       | 560       | V                |
| Maximum DC blocking voltage  | $V_{DC}$       | 200               | 400       | 600       | 800       | V                |
| Maximum average forward rectified output current at                    | $T_C = 107$ °C | $I_{F(AV)}^{(1)}$ |           |           |           | A                |
|  | $T_A = 25$ °C  | $I_{F(AV)}^{(2)}$ |           |           |           |                  |
| Peak forward surge current single sine-wave superimposed on rated load | $I_{FSM}$      | 300               |           |           |           | A                |
| Rating for fusing ( $t < 8.3$ ms)                                      | $I^2t$         | 240               |           |           |           | A <sup>2</sup> s |
| Operating junction and storage temperature range                       | $T_J, T_{STG}$ | - 55 to + 150     |           |           |           | °C               |

### Notes

(1) Unit case mounted on aluminum plate heatsink

(2) Units mounted on PCB without heatsink



| <b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) |                                   |        |           |           |           |           |               |
|--|-----------------------------------|--------|-----------|-----------|-----------|-----------|---------------|
| PARAMETER  | TEST CONDITIONS                   | SYMBOL | GSIB1520N | GSIB1540N | GSIB1560N | GSIB1580N | UNIT          |
| Maximum instantaneous forward voltage drop per diode   | $I_F = 7.5\text{ A}$              | $V_F$  | 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                         | GSIB1520N | GSIB1540N | GSIB1560N | GSIB1580N | UNIT               |  |
| Maximum thermal resistance  | $R_{\theta JA}$ <sup>(2)</sup> | 22        |           |           |           | $^\circ\text{C/W}$ |  |
|   | $R_{\theta JC}$ <sup>(1)</sup> | 1.5       |           |           |           |                    |  |

**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

| <b>ORDERING INFORMATION</b> (Example) |                 |                        |               |               |
|---------------------------------------|-----------------|------------------------|---------------|---------------|
| PREFERRED P/N                         | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| GSIB1560N-M3/45                       | 7.0             | 45                     | 20            | Tube          |

**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

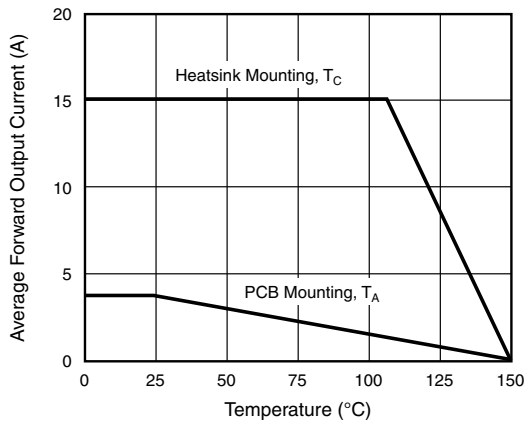


Fig. 1 - Derating Curve Output Rectified Current

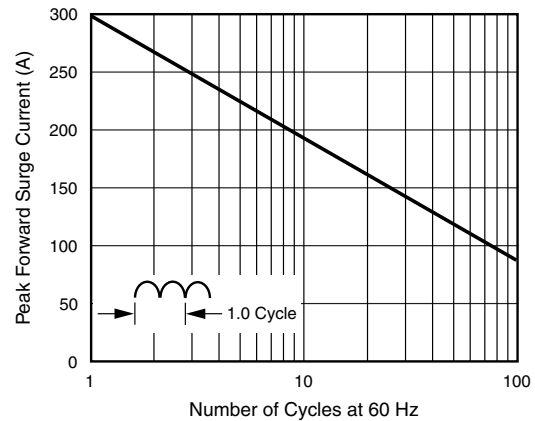


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

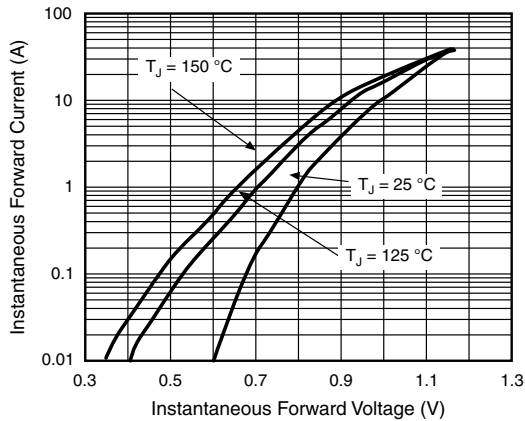


Fig. 3 - Typical Forward Characteristics Per Diode

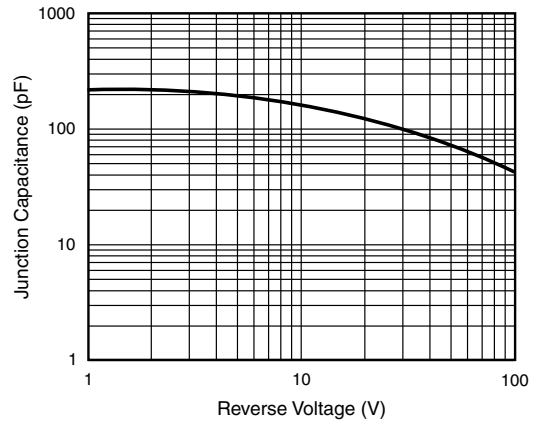


Fig. 5 - Typical Junction Capacitance Per Diode

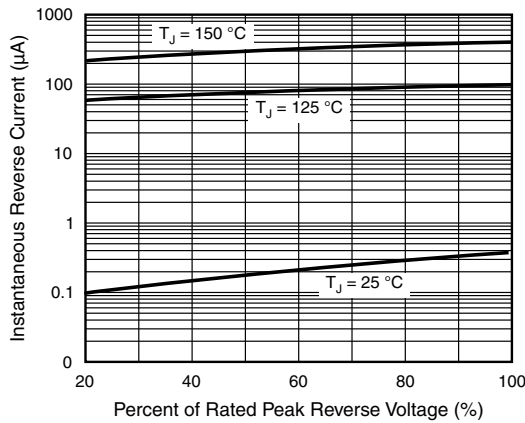


Fig. 4 - Typical Reverse Characteristics Per Diode

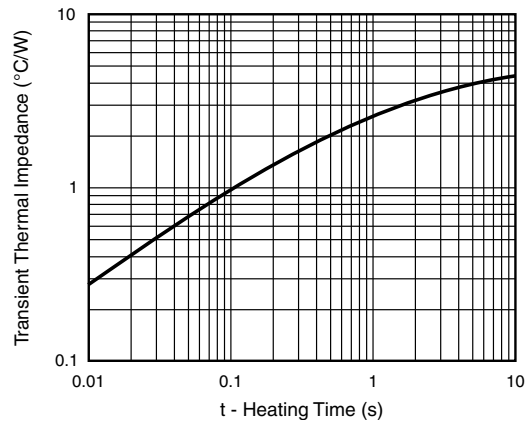


Fig. 6 - Typical Transient Thermal Impedance

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### Case Style GSIB-5S

