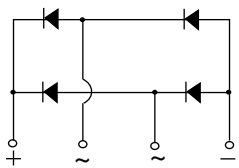
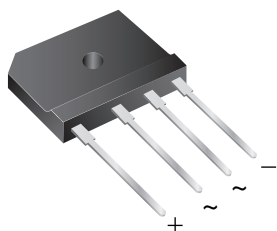




## Single-Phase Single In-Line Bridge Rectifiers



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.

## PRIMARY CHARACTERISTICS

|                        |                            |
|------------------------|----------------------------|
| Package                | GSIB-5S                    |
| $I_{F(AV)}$            | 20 A                       |
| $V_{RRM}$              | 200 V, 400 V, 600 V, 800 V |
| $I_{FSM}$              | 240 A                      |
| $I_R$                  | 10 $\mu$ A                 |
| $V_F$ at $I_F = 7.5$ A | 1.0 V                      |
| $T_J$ max.             | 150 °C                     |
| Diode variations       | In-Line                    |

## 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)

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

| PARAMETER                                                              | SYMBOL                            | GSIB2020N                         | GSIB2040N | GSIB2060N | GSIB2080N        | 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> = 87 °C            | I <sub>F(AV)</sub> <sup>(1)</sup> | 20        |           |                  | A    |
|                                                                        | T <sub>A</sub> = 25 °C            | I <sub>F(AV)</sub> <sup>(2)</sup> | 3.5       |           |                  |      |
| Peak forward surge current single sine-wave superimposed on rated load | I <sub>FSM</sub>                  | 240                               |           |           | A                |      |
| Rating for fusing (t < 8.3 ms)                                         | I <sup>2</sup> t                  | 240                               |           |           | 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 without heatsink

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

| PARAMETER                                                         | TEST CONDITIONS         | SYMBOL         | GSIB2020N | GSIB2040N | GSIB2060N | GSIB2080N | UNIT |
|-------------------------------------------------------------------|-------------------------|----------------|-----------|-----------|-----------|-----------|------|
| Maximum instantaneous forward voltage drop per diode              | I <sub>F</sub> = 7.5 A  | V <sub>F</sub> | 1.0       |           |           |           | V    |
| Maximum DC reverse current at rated DC blocking voltage per diode | T <sub>A</sub> = 25 °C  | I <sub>R</sub> | 10        |           |           |           | μA   |
|                                                                   | T <sub>A</sub> = 125 °C |                | 250       |           |           |           |      |

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

| PARAMETER                  | SYMBOL                          | GSIB2020N | GSIB2040N | GSIB2060N | GSIB2080N | UNIT |
|----------------------------|---------------------------------|-----------|-----------|-----------|-----------|------|
| Maximum thermal resistance | R <sub>θJA</sub> <sup>(2)</sup> | 22        |           |           |           | °C/W |
|                            | R <sub>θJC</sub> <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

**ORDERING INFORMATION** (Example)

| PREFERRED P/N   | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
|-----------------|-----------------|------------------------|---------------|---------------|
| GSIB2060N-M3/45 | 7.0             | 45                     | 20            | Tube          |

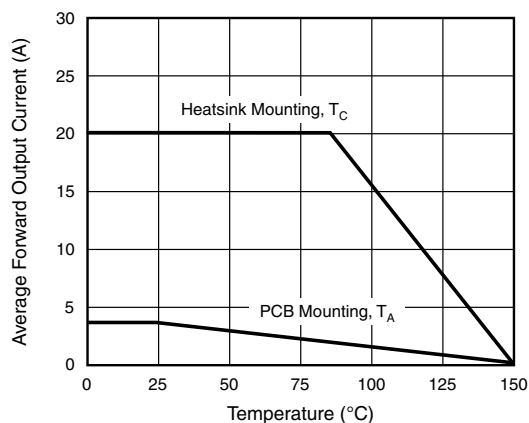
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Derating Curve Output Rectified Current

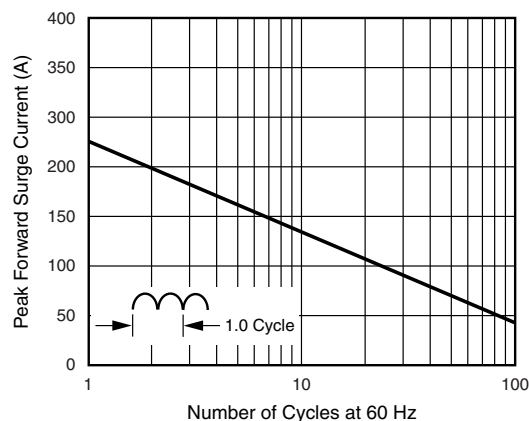


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

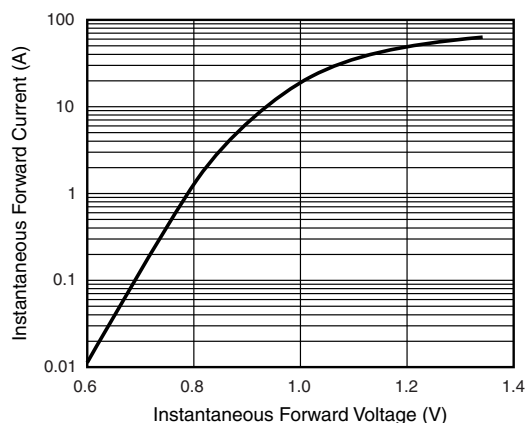


Fig. 3 - Typical Forward Characteristics Per Diode

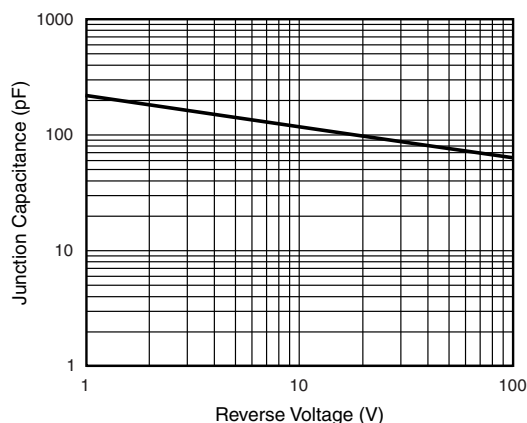


Fig. 5 - Typical Junction Capacitance Per Diode

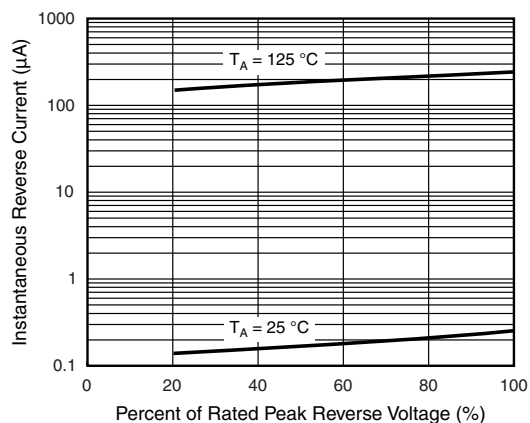


Fig. 4 - Typical Reverse Characteristics Per Diode

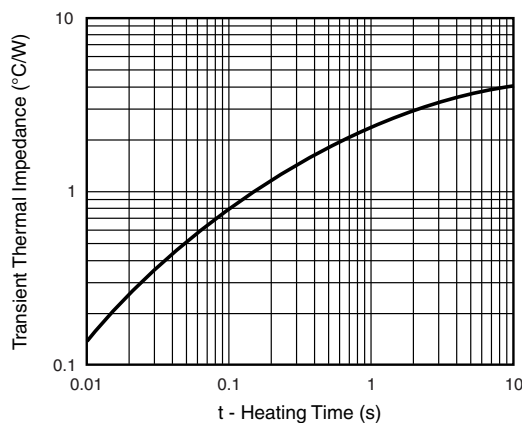
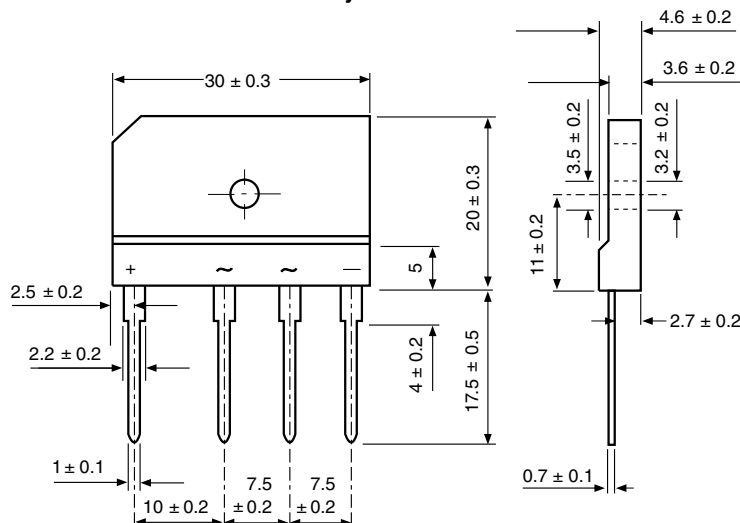


Fig. 6 - Typical Transient Thermal Impedance

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### Case Style GSIB-5S





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