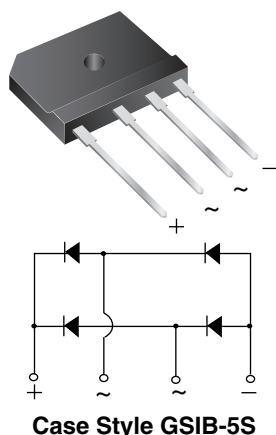


Single-Phase Single In-Line Bridge Rectifiers



FEATURES

- UL recognition file number E54214
- Thin single in-line package
- Glass passivated chip junction
- High surge current capability
- High case dielectric strength of 1500 V_{RMS}
- Solder dip 260 °C, 40 s
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

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

Epoxy meets UL 94 V-0 flammability rating

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

E3 suffix for consumer grade, 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

| | |
|------------------------|----------------------------|
| Package | GSIB-5S |
| $I_{F(AV)}$ | 6 A |
| V_{RRM} | 200 V, 400 V, 600 V, 800 V |
| I_{FSM} | 180 A |
| I_R | 10 μ A |
| V_F at $I_F = 3.0$ A | 0.95 V |
| T_J max. | 150 °C |
| Diode variations | In-Line |

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

| PARAMETER | SYMBOL | VSIB620 | VSIB640 | VSIB660 | VSIB680 | 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 $T_C = 100$ °C ⁽¹⁾ $T_A = 25$ °C ⁽²⁾ | $I_{F(AV)}$ | 6.0 | | | | A |
| | | 2.8 | | | | |
| Peak forward surge current single sine-wave superimposed on rated load | I_{FSM} | 180 | | | | A |
| Rating for fusing ($t < 8.3$ ms) | I^2t | 120 | | | | A ² 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 with 0.5" x 0.5" (12 mm x 12 mm) copper pads and 0.375" (9.5 mm) lead length

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

| PARAMETER | TEST CONDITIONS | SYMBOL | VSIB620 | VSIB640 | VSIB660 | VSIB680 | UNIT |
|---|-------------------------|----------------|---------|---------|---------|---------|------|
| Maximum instantaneous forward voltage drop per diode | 3.0 A | V _F | 0.95 | | | | V |
| Maximum DC reverse current at rated DC blocking voltage per diode | T _A = 25 °C | I _R | 10 | | | | μA |
| | T _A = 125 °C | | 250 | | | | |

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

| PARAMETER | SYMBOL | VSIB620 | VSIB640 | VSIB660 | VSIB680 | UNIT |
|----------------------------|------------------|--------------------|---------|---------|---------|------|
| Typical thermal resistance | R _{θJA} | 22 ⁽²⁾ | | | | °C/W |
| | R _{θJC} | 3.4 ⁽¹⁾ | | | | |

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

ORDERING INFORMATION (Example)

| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
|---------------|-----------------|------------------------|---------------|---------------|
| VSIB660-E3/45 | 7.0 | 45 | 20 | Tube |

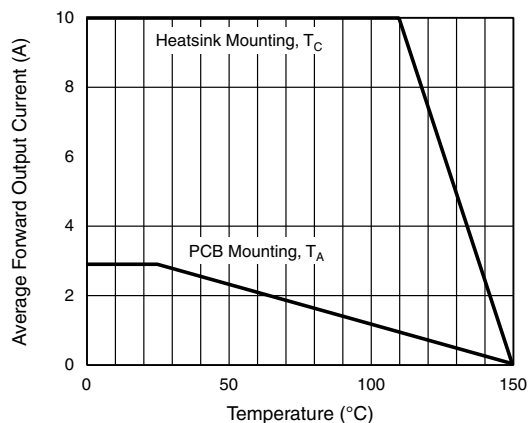
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Fig. 1 - Derating Curve Output Rectified Current

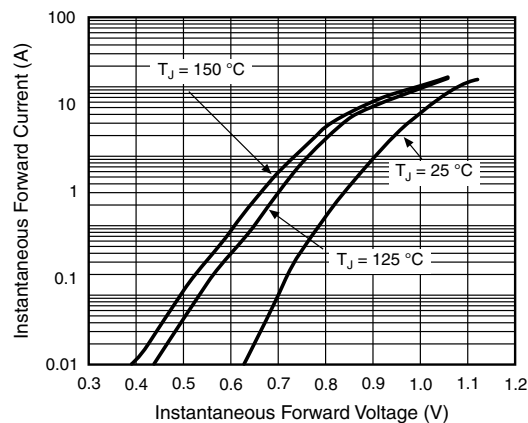


Fig. 3 - Typical Forward Characteristics Per Diode

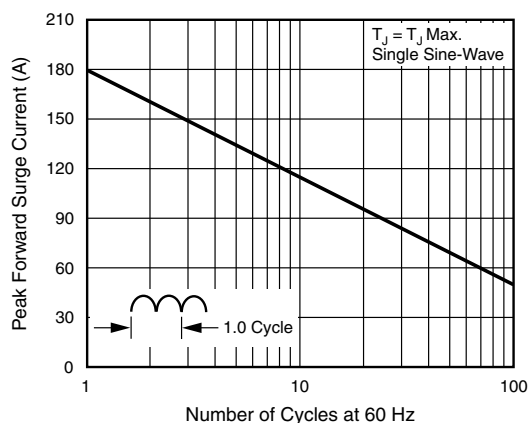


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

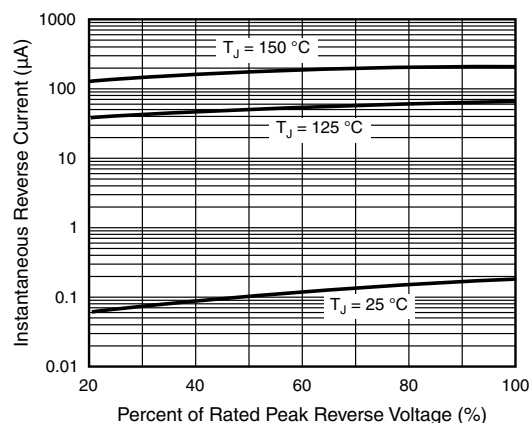


Fig. 4 - Typical Reverse Characteristics Per Diode

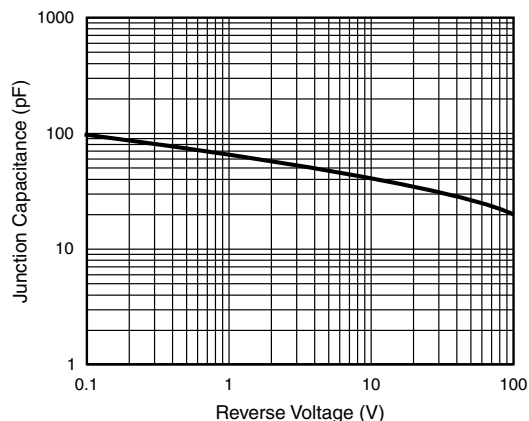


Fig. 5 - Typical Junction Capacitance Per Diode

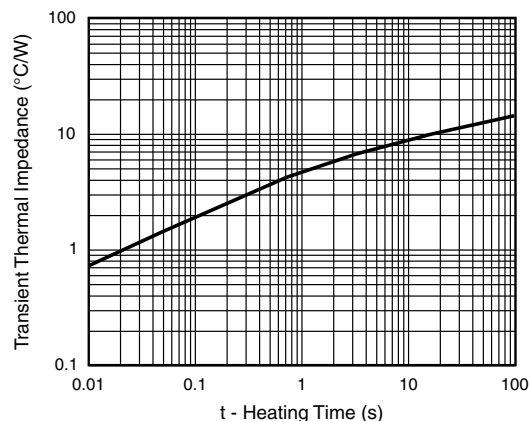
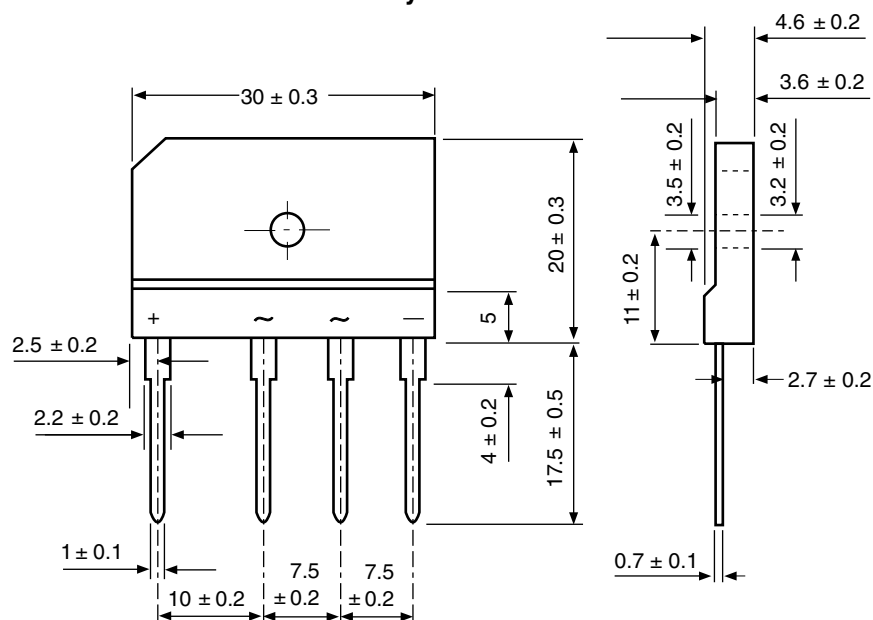


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in millimeters

Case Style GSIB-5S




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