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[Vishay Semiconductor/Diodes Division](#)
[VSIB440-E3/45](#)

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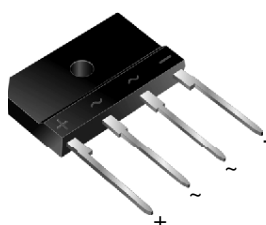
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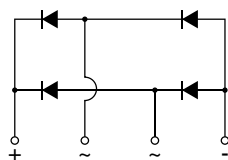
VSIB420 thru VSIB480

Vishay General Semiconductor

Single-Phase Single In-Line Bridge Rectifier



Case Style GSIB-3S



FEATURES

- UL recognition file number E312394 (QQXX2)
- Ideal for printed circuit boards
- High surge current capability
- High case dielectric strength of 1500 V_{RMS}
- Solder dip 260 °C, 40 s
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC



RoHS
COMPLIANT

TYPICAL APPLICATIONS

General purpose use in ac-to-dc bridge full wave rectification for monitor, TV, printer, switching mode power supply, adapter, audio equipment, and home appliances applications.

MECHANICAL DATA

Case: GSIB-3S

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

Mounting Torque: 10 cm·kg (8.8 inches·lbs) max.

Recommended Torque: 5.7 cm·kg (5 inches·lbs)

PRIMARY CHARACTERISTICS

| | |
|-------------|----------------|
| $I_{F(AV)}$ | 4.0 A |
| V_{RRM} | 200 V to 800 V |
| I_{FSM} | 130 A |
| I_R | 10 μ A |
| V_F | 0.95 V |
| T_J max. | 150 °C |

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

| PARAMETER | SYMBOL | VSIB420 | VSIB440 | VSIB460 | VSIB480 | 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 $T_A = 25$ °C | $I_{F(AV)}$ | 4.0 ⁽¹⁾ 2.3 ⁽²⁾ | | | | A |
| Peak forward surge current single sine-wave superimposed on rated load | I_{FSM} | 130 | | | | A |
| Rating for fusing ($t < 8.3$ ms) | I^2t | 70 | | | | 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 P.C.B. with 0.5" x 0.5" (12 mm x 12 mm) copper pads and 0.375" (9.5 mm) lead length

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| ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | | | | |
|--|------------------------|---|----------------|-----------|---------|---------|---------|------|
| PARAMETER | TEST CONDITIONS | | SYMBOL | VSIB420 | VSIB440 | VSIB460 | VSIB480 | UNIT |
| Maximum instantaneous forward drop per diode ⁽¹⁾ | I _F = 2.0 A | T _A = 25 °C | V _F | 0.95 | | | | V |
| Maximum reverse current per diode ⁽²⁾ | Rated V _R | T _A = 25 °C T _A = 125 °C | I _R | 10 250 | | | | μA |

Notes

⁽¹⁾ Pulse test: 300 μs pulse width, 1 % duty cycle

⁽²⁾ Pulse test: Pulse width $\leq 40\text{ ms}$

| THERMAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted) | | | | | | | |
|---|------------------------------------|---------------------------------------|---------|---------|---------|----------------------|--|
| PARAMETER | SYMBOL | VSIB420 | VSIB440 | VSIB460 | VSIB480 | UNIT | |
| Maximum thermal resistance | $R_{\theta JA}$ $R_{\theta JC}$ | 26 ⁽²⁾ 5 ⁽¹⁾ | | | | $^{\circ}\text{C/W}$ | |

Notes

⁽¹⁾ Unit case mounted on aluminum plate heatsink

⁽²⁾ Units mounted on P.C.B. 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 |
| VSIB460-E3/45 | 4.0 | 45 | 20 | Tube |

RATINGS AND CHARACTERISTICS CURVES

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

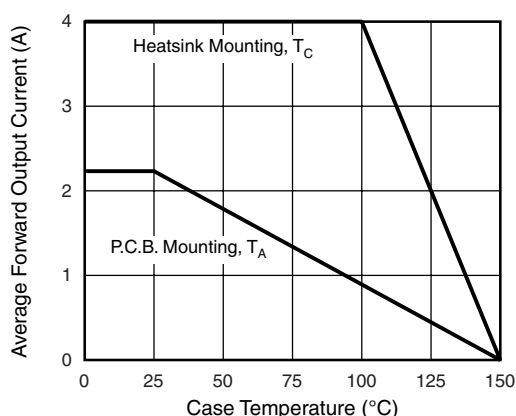


Figure 1. Derating Curve Output Rectified Current

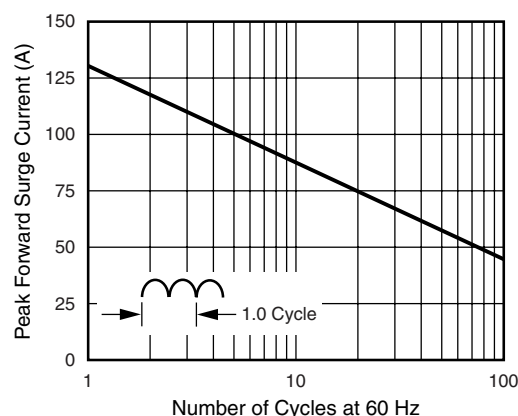


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode



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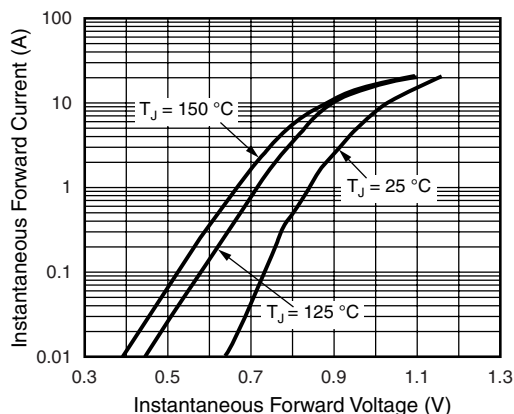


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

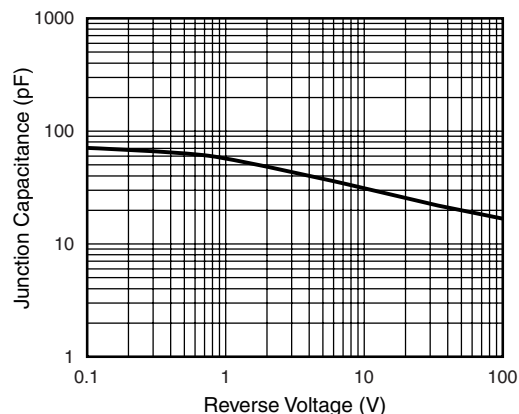


Figure 5. Typical Junction Capacitance Per Diode

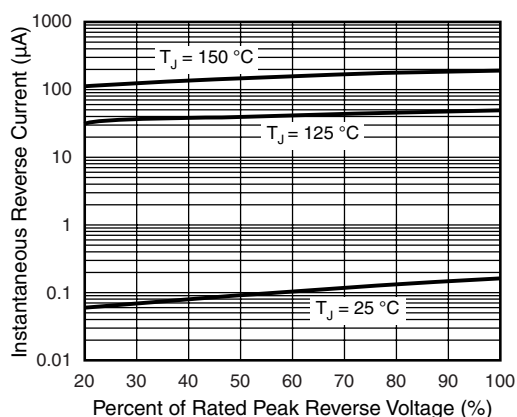


Figure 4. Typical Reverse Characteristics Per Diode

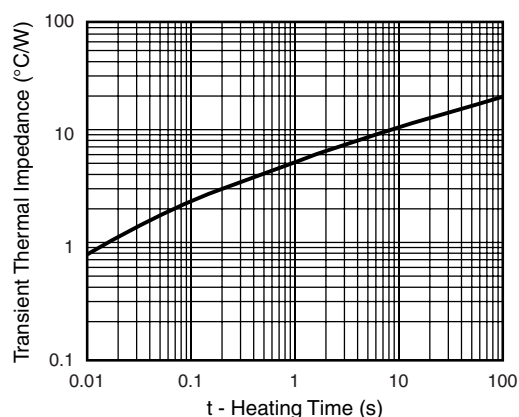
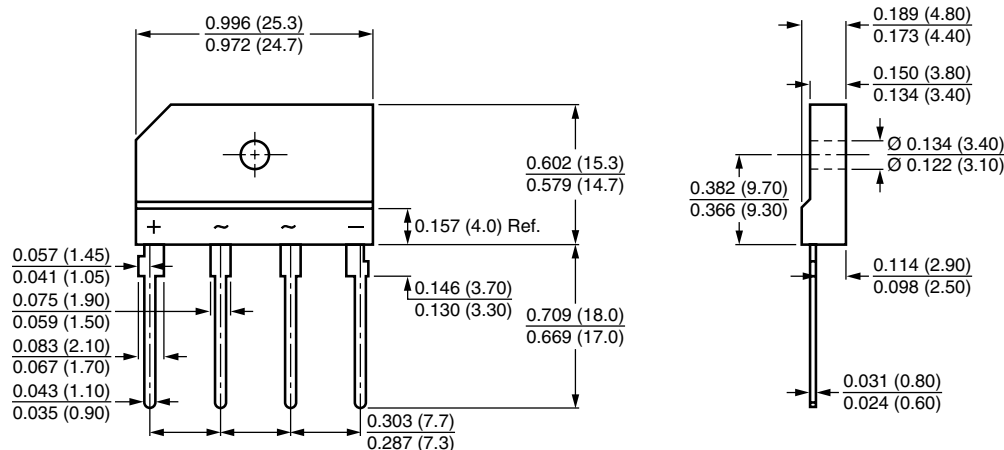


Figure 6. Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

Case Style GSIB-3S





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