



Glass Passivated Single-Phase Bridge Rectifier



Case Style GBU



Case Style GBU

FEATURES

- UL recognition file number E54214
- Ideal for printed circuit boards
- High surge current capability
- High case dielectric strength of 1500 V_{RMS}
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

LINKS TO ADDITIONAL RESOURCES



3D Models

TYPICAL APPLICATIONS

General purpose use in AC/DC bridge full wave rectification for monitor, TV, printer, power supply, switching mode power supply, adapter, audio equipment, and home appliances applications.

| PRIMARY CHARACTERISTICS | |
|-------------------------|---|
| $I_{F(AV)}$ | 8.0 A |
| V_{RRM} | 50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V |
| I_{FSM} | 200 A |
| I_R | 5 μ A |
| V_F at $I_F = 8.0$ A | 1.0 V |
| T_J max. | 150 °C |
| Package | GBU |
| Circuit configuration | In-line |

MECHANICAL DATA

Case: GBU

Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, commercial grade
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

E3 and M3 suffix meet 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)

| MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted) | | | | | | | | | |
|---|----------------|-------------------|-------|-------|-------|-------|-------|-------|------------------|
| PARAMETER | SYMBOL | GBU8A | GBU8B | GBU8D | GBU8G | GBU8J | GBU8K | GBU8M | UNIT |
| Maximum repetitive peak reverse voltage | V_{RRM} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS voltage | V_{RMS} | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC blocking voltage | V_{DC} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum average forward rectified output current at | $T_C = 60$ °C | $I_{F(AV)}^{(1)}$ | | | | | | | A |
| | $T_A = 40$ °C | $I_{F(AV)}^{(2)}$ | | | | | | | |
| Peak forward surge current single sine-wave super-imposed on rated load | I_{FSM} | 200 | | | | | | | A |
| Rating for fusing ($t < 8.3$ ms) | I^2t | 166 | | | | | | | 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 ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | | | | | | |
|--|-----------------------------------|--------|-------|-------|-------|-------|-------|-------|-------|---------------|
| PARAMETER | TEST CONDITIONS | SYMBOL | GBU8A | GBU8B | GBU8D | GBU8G | GBU8J | GBU8K | GBU8M | UNIT |
| Maximum instantaneous forward voltage drop per diode | 8.0 A | V_F | | | | 1.0 | | | | V |
| Maximum DC reverse current at rated DC blocking voltage per diode | $T_A = 25\text{ }^\circ\text{C}$ | I_R | | | | 5.0 | | | | μA |
| | $T_A = 125\text{ }^\circ\text{C}$ | | | | | 500 | | | | |
| Typical junction capacitance per diode | 4 V, 1 MHz | C_J | | | | 68 | | | | pF |

| THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | | | | | | |
|---|------------------------|-------|-------|-------|-------|-------|-------|-------|--------------------|--|
| PARAMETER | SYMBOL | GBU8A | GBU8B | GBU8D | GBU8G | GBU8J | GBU8K | GBU8M | UNIT | |
| Typical thermal resistance | $R_{\theta JA}$ (2) | | | | 20 | | | | $^\circ\text{C/W}$ | |
| | $R_{\theta JC}$ (1)(3) | | | | 4.0 | | | | | |

Notes

- (1) Units case mounted on aluminum plate heatsink
- (2) Units mounted in free air, no heatsink on PCB, 0.5" x 0.5" (12 mm x 12 mm) copper pads, 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 screws

| ORDERING INFORMATION | | | | |
|-----------------------------|-----------------|------------------------|---------------|---------------|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| GBU8J-E3/45 | 3.857 | 45 | 20 | Tube |
| GBU8J-E3/51 | 3.857 | 51 | 250 | Paper tray |
| GBU8J-M3/45 | 3.857 | 45 | 20 | Tube |
| GBU8J-M3/51 | 3.857 | 51 | 250 | Paper tray |

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

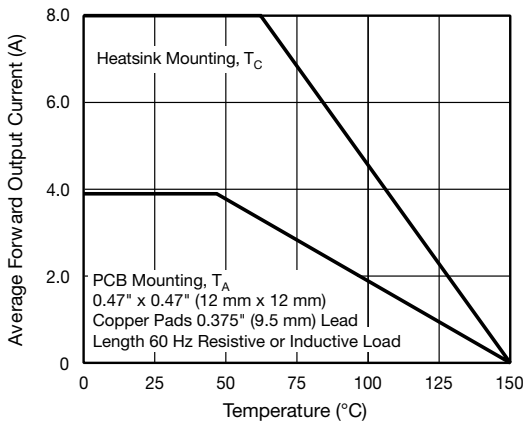


Fig. 1 - Derating Curve Output Rectified Current

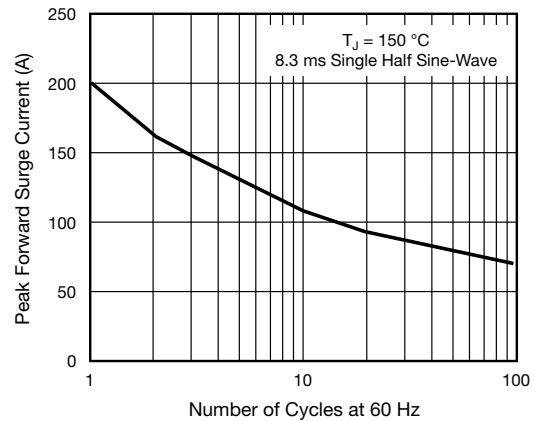


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode



Fig. 3 - Typical Forward Characteristics Per Diode

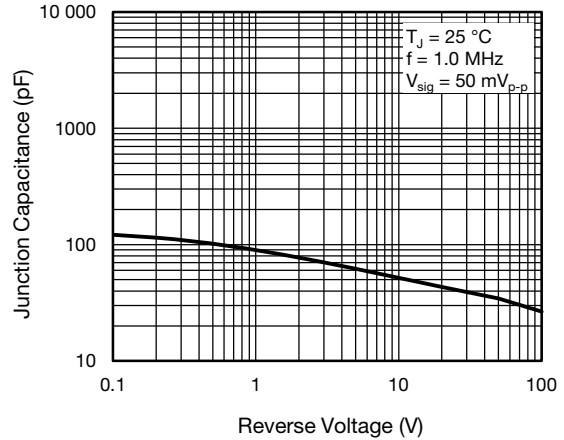


Fig. 5 - Typical Junction Capacitance Per Diode

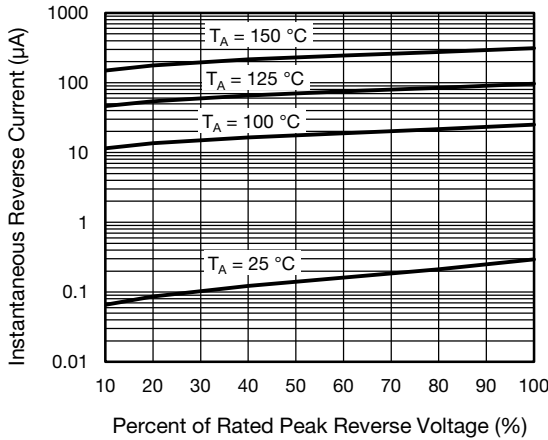


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

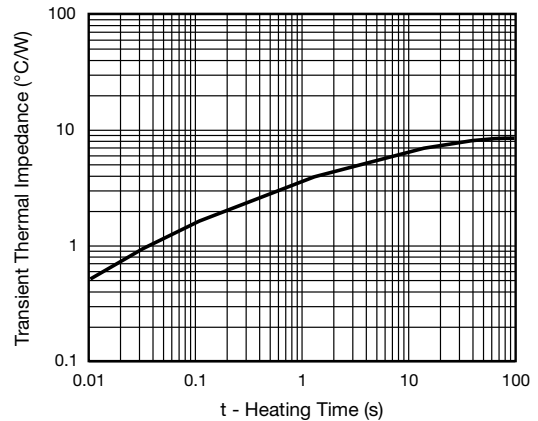


Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

Case Type GBU



Polarity shown on front side of case, positive lead by beveled corner



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