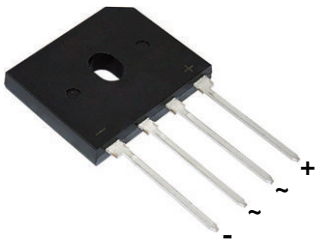
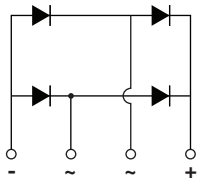
# Glass Passivated Single-Phase Bridge Rectifier




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

## TYPICAL APPLICATIONS

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

## LINKS TO ADDITIONAL RESOURCES

3D Models

## 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)

| PRIMARY CHARACTERISTICS | |
|---|---|
| $I_{F(AV)}$ | 6.0 A |
| $V_{RRM}$ | 200 V, 600 V, 800 V |
| $I_{FSM}$ | 150 A |
| $I_R$ | 5 µA |
| $V_F$ at $I_F$ = 3.0 V | 1.05 V |
| $T_J$ max. | 150 °C |
| Package | GBU |
| Circuit configuration | In-line |

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

| PARAMETER | | SYMBOL | G5SBA20 | G5SBA60 | G5SBA80 | UNIT |
|---|---|---|---|---|---|---|
| Maximum repetitive peak reverse voltage | | $V_{RRM}$ | 200 | 600 | 800 | V |
| Maximum RMS reverse voltage | | $V_{RWM}$ | 140 | 420 | 560 | V |
| Maximum DC blocking voltage | | $V_{DC}$ | 200 | 600 | 800 | V |
| Maximum average forward rectified output current at | $T_C$ = 100 °C (1) | $I_{F(AV)}$ | 6.0 | | | A |
| | $T_A$ = 25 °C (2) | | 2.8 | | | |
| Peak forward surge current single sine-wave superimposed on rated load | | $I_{FSM}$ | 150 | | | A |
| Rating for fusing (t < 8.3 ms) | | $I^2t$ | 93 | | | $A^2s$ |
| 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 | G5SBA20 | G5SBA60 | G5SBA80 | UNIT |
|---|---|---|---|---|---|---|
| Maximum instantaneous forward voltage per diode | 3.0 A | $V_F$ | 1.05 | | | V |
| Maximum DC reverse current at rated DC blocking voltage per diode | $T_J$ = 25 °C | $I_R$ | 5.0 | | | µA |
| | $T_J$ = 125 °C | | 300 | | | |

| THERMAL CHARACTERISTICS ($T_A$ = 25 °C unless otherwise noted) | | | | | |
|---|---|---|---|---|---|
| PARAMETER | SYMBOL | G5SBA20 | G5SBA60 | G5SBA80 | UNIT |
| Typical thermal resistance | $R_{\theta JA}$ (2) | 22 | | | °C/W |
| | $R_{\theta JC}$ (1) | 3.4 | | | |

**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

| ORDERING INFORMATION (Example) | | | | |
|---|---|---|---|---|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| G5SBA60-E3/45 | 3.565 | 45 | 20 | Tube |
| G5SBA60-E3/51 | 3.565 | 51 | 250 | Paper tray |
| G5SBA60-M3/45 | 3.565 | 45 | 20 | Tube |
| G5SBA60-M3/51 | 3.565 | 51 | 250 | Paper tray |

## RATINGS AND CHARACTERISTICS CURVES ($T_A$ = 25 °C unless otherwise noted)

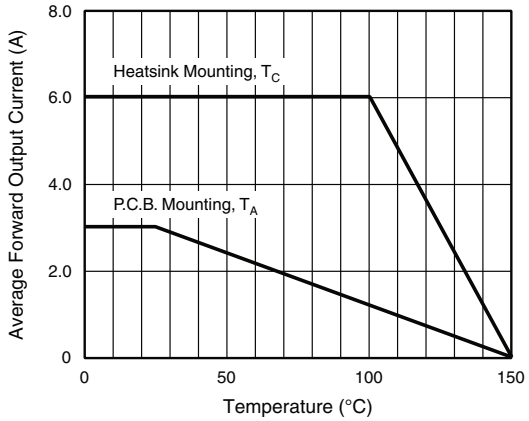



Fig. 1 - Derating Curve Output Rectified Current

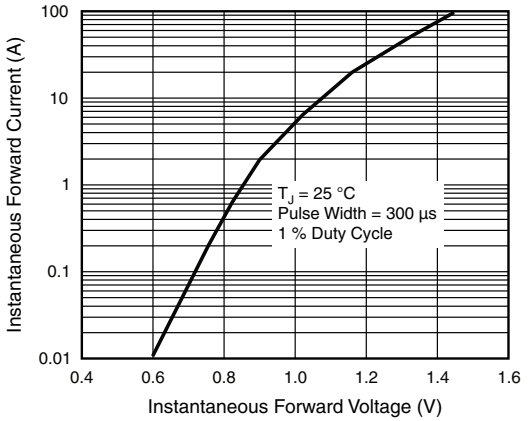



Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

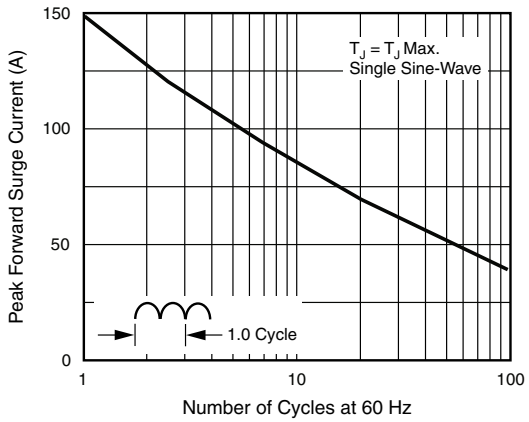



Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

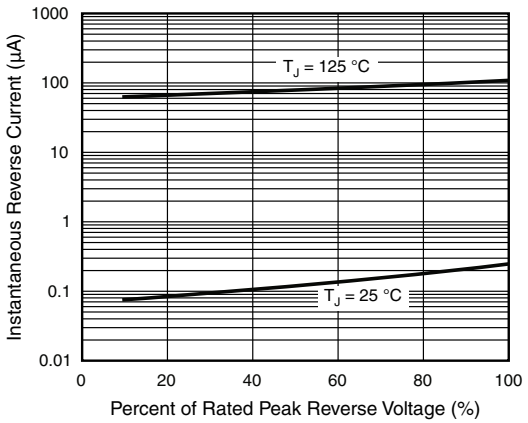



Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

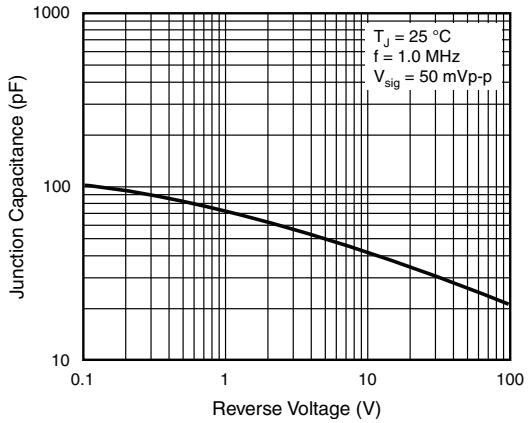



Fig. 5 - Typical Junction Capacitance Per Diode

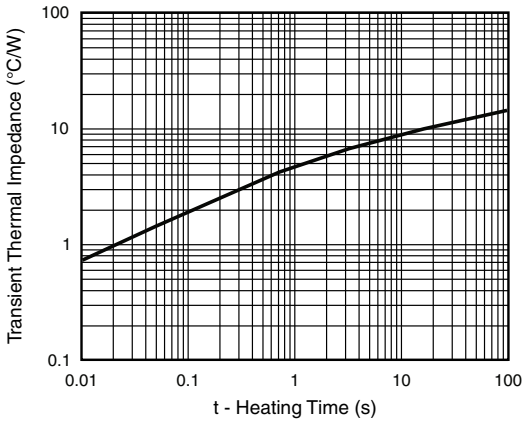
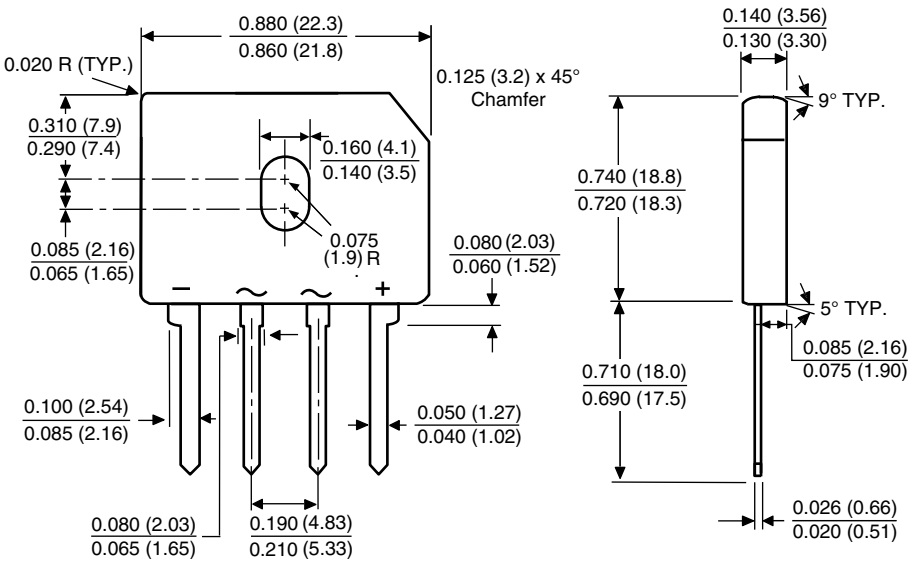



Fig. 6 - Typical Transient Thermal Impedance

## **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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