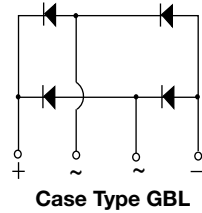




## Glass Passivated Single-Phase Bridge Rectifier



Case Type GBL



RoHS COMPLIANT

### FEATURES

- UL recognition file number E54214
- Ideal for printed circuit boards
- High surge current capability
- Typical  $I_R$  less than 0.1  $\mu A$
- High case dielectric strength
- 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)

### TYPICAL APPLICATIONS

General purpose use in AC/DC bridge full wave rectification for monitor, TV, printer, SMPS, adapter, audio equipment, and home appliances application.

### MECHANICAL DATA

Case: GBL

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

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

E3 suffix meets JESD 201 class 1A whisker test

Polarity: As marked on body

| PRIMARY CHARACTERISTICS |   |
|-------------------------|---|
| Package                 | GBL   |
| $I_{F(AV)}$             | 4 A   |
| $V_{RRM}$               | 50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V |
| $I_{FSM}$               | 150 A   |
| $I_R$                   | 5 $\mu A$                                       |
| $V_F$ at $I_F = 4.0$ A  | 1.0 V   |
| $T_J$ max.              | 150 °C  |
| Diode variations        | In-Line   |

| MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)                                    |                |               |       |       |       |       |       |       |                  |
|--|----------------|---------------|-------|-------|-------|-------|-------|-------|------------------|
| PARAMETER  | SYMBOL         | GBL005        | GBL01 | GBL02 | GBL04 | GBL06 | GBL08 | GBL10 | 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 $T_C = 50$ °C (1)<br>$T_A = 40$ °C (2) | $I_{F(AV)}$    | 4.0           |       |       |       |       |       |       | A                |
|  |                | 3.0           |       |       |       |       |       |       |                  |
| 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 <sup>2</sup> s |
| Operating junction and storage temperature range   | $T_J, T_{STG}$ | - 55 to + 150 |       |       |       |       |       |       | °C               |

### Notes

- (1) Unit mounted on 3.0" x 3.0" x 0.11" thick (7.5 cm x 7.5 cm x 0.3 cm) aluminum plate
- (2) Unit mounted on PCB at 0.375" (9.5 mm) lead length and 0.5" x 0.5" (12 mm x 12 mm) copper pads

| ELECTRICAL CHARACTERISTICS ( $T_A = 25$ °C unless otherwise noted) |                 |        |        |       |       |       |       |       |       |         |
|--|-----------------|--------|--------|-------|-------|-------|-------|-------|-------|---------|
| PARAMETER  | TEST CONDITIONS | SYMBOL | GBL005 | GBL01 | GBL02 | GBL04 | GBL06 | GBL08 | GBL10 | UNIT    |
| Maximum instantaneous forward voltage drop per diode               | 4.0 A           | $V_F$  | 1.0    |       |       |       |       |       |       | V       |
| Maximum DC reverse current at rated DC blocking voltage per diode  | $T_A = 25$ °C   | $I_R$  | 5.0    |       |       |       |       |       |       | $\mu A$ |
|  | $T_A = 125$ °C  |        | 500    |       |       |       |       |       |       |         |
| Typical junction capacitance per diode                             | 4.0 V, 1 MHz    | $C_J$  | 95     |       |       |       | 40    |       |       | pF      |



| <b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) |                     |        |       |       |       |       |       |       |                    |
|---|---------------------|--------|-------|-------|-------|-------|-------|-------|--------------------|
| PARAMETER   | SYMBOL              | GBL005 | GBL01 | GBL02 | GBL04 | GBL06 | GBL08 | GBL10 | UNIT               |
| Typical thermal resistance  | $R_{\theta JA}$ (2) | 22     |       |       |       |       |       |       | $^\circ\text{C/W}$ |
|   | $R_{\theta JC}$ (1) | 3.5    |       |       |       |       |       |       |                    |

**Notes**

- (1) Unit mounted on 3.0" x 3.0" x 0.11" thick (7.5 cm x 7.5 cm x 0.3 cm) aluminum plate
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| <b>ORDERING INFORMATION</b> (Example) |                 |                        |               |                      |
|---------------------------------------|-----------------|------------------------|---------------|----------------------|
| PREFERRED P/N                         | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE        |
| GBL06-E3/45                           | 2.18            | 45                     | 20            | Tube                 |
| GBL06-E3/51                           | 2.18            | 51                     | 400           | Anti-static PVC tray |

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

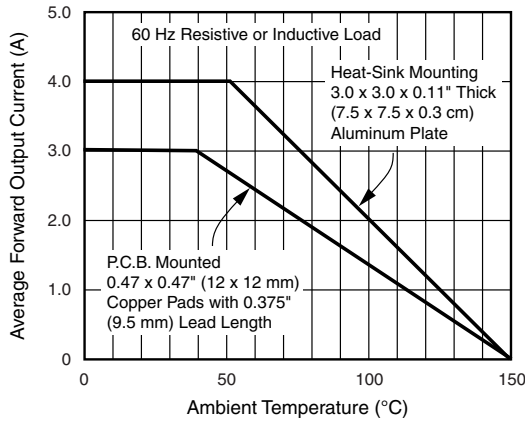


Fig. 1 - Derating Curves Output Rectified Current

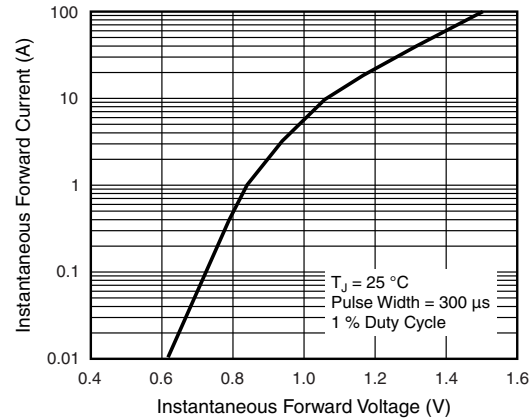


Fig. 3 - Typical Forward Voltage Characteristics Per Diode

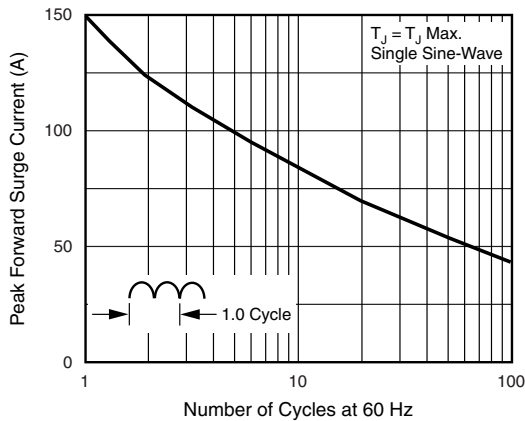


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

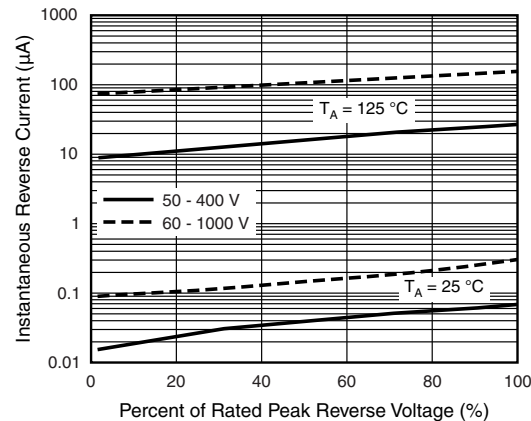


Fig. 4 - Typical Reverse Characteristics Per Diode

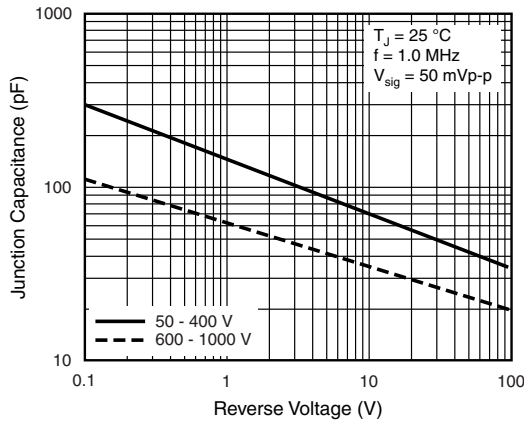


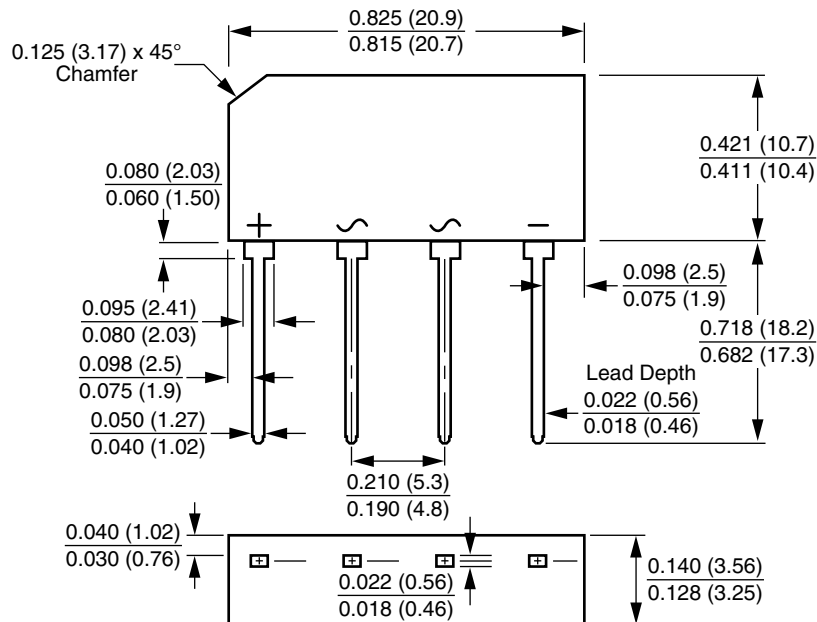
Fig. 5 - Typical Junction Capacitance Per Diode



Fig. 6 - Typical Transient Thermal Impedance Per Diode

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### Case Type GBL



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



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