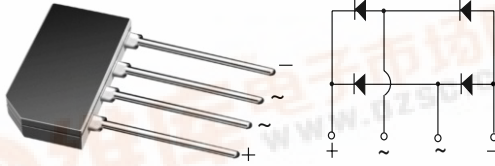




GBL005 thru GBL10

Vishay General Semiconductor

Glass Passivated Single-Phase Bridge Rectifier



Case Type GBL

FEATURES

- UL recognition file number E54214
- Ideal for printed circuit boards
- High surge current capability
- Typical I_R less than 0.1 μA
- High case dielectric strength
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



RoHS COMPLIANT

TYPICAL APPLICATIONS

General purpose use in ac-to-dc bridge full wave rectification for monitor, TV, printer, SMPS, adapter, audio equipment, and home appliances application.

| PRIMARY CHARACTERISTICS | |
|-------------------------|-----------------|
| $I_{F(AV)}$ | 4 A |
| V_{RRM} | 50 V to 1000 V |
| I_{FSM} | 150 A |
| I_R | 5 μA |
| V_F | 1.0 V |
| T_J max. | 150 °C |

MECHANICAL DATA

Case: GBL

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test

Polarity: As marked on body

| MAXIMUM RATINGS ($T_A = 25\text{ °C}$ 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 $T_C = 50\text{ °C}$ $T_A = 40\text{ °C}$ | $I_{F(AV)}$ | | | | | 4.0 ⁽¹⁾ | | | A |
| | | | | | | 3.0 ⁽²⁾ | | | |
| Peak forward surge current single sine-wave superimposed on rated load | I_{FSM} | | | | | 150 | | | A |
| Rating for fusing ($t < 8.3\text{ ms}$) | I^2t | | | | | 93 | | | A ² 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 x 7.5 x 0.3 cm) aluminum plate

(2) Unit mounted on P.C.B. at 0.375" (9.5 mm) lead length and 0.5 x 0.5" (12 x 12 mm) copper pads



GBL005 thru GBL10

Vishay General Semiconductor



| ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ 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 | | | | | 1.00 | | | | V |
| Maximum DC reverse current at rated DC blocking voltage per diode | $T_A = 25\text{ }^\circ\text{C}$ $T_A = 125\text{ }^\circ\text{C}$ | I_R | | | | | 5.0 500 | | | | μA |
| Typical junction capacitance per diode | 4.0 V, 1 MHz | C_J | 95 | | | | 40 | | | | pF |

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

Notes:

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

| ORDERING INFORMATION (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)

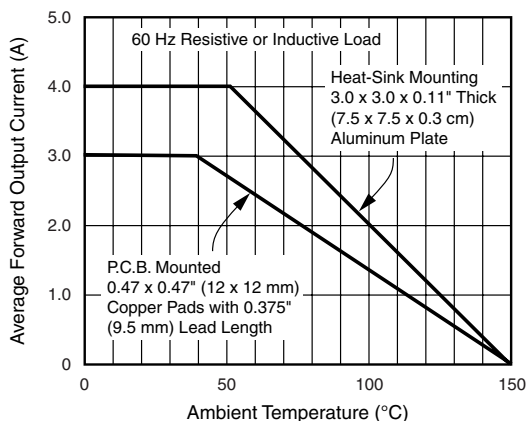


Figure 1. Derating Curves Output Rectified Current

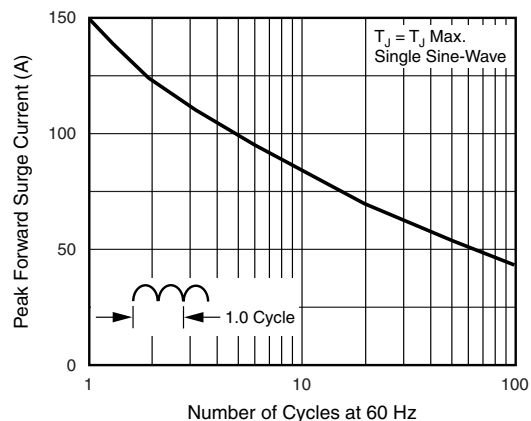


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode



GBL005 thru GBL10

Vishay General Semiconductor

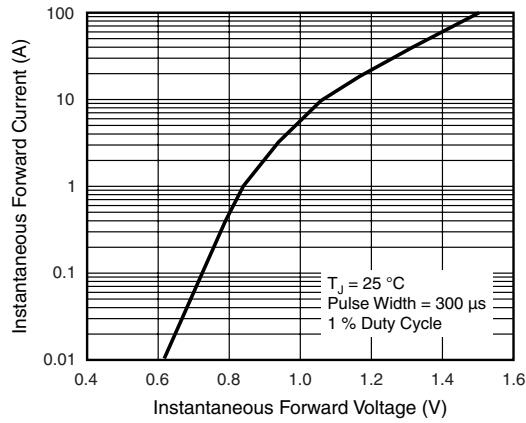


Figure 3. Typical Forward Voltage Characteristics Per Diode

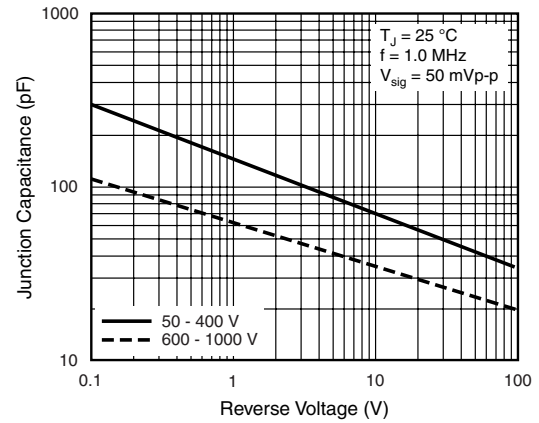


Figure 5. Typical Junction Capacitance Per Diode

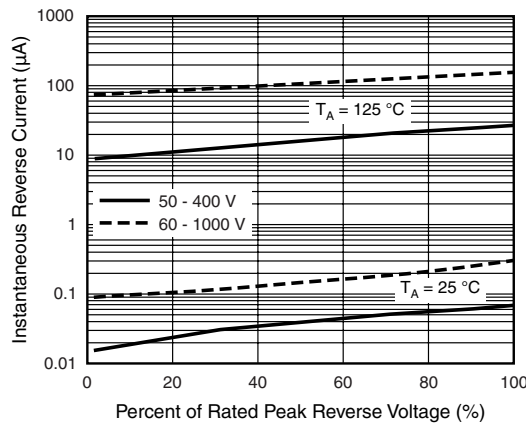


Figure 4. Typical Reverse Characteristics Per Diode

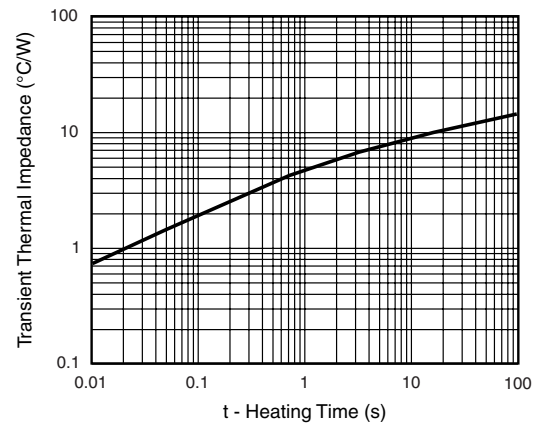
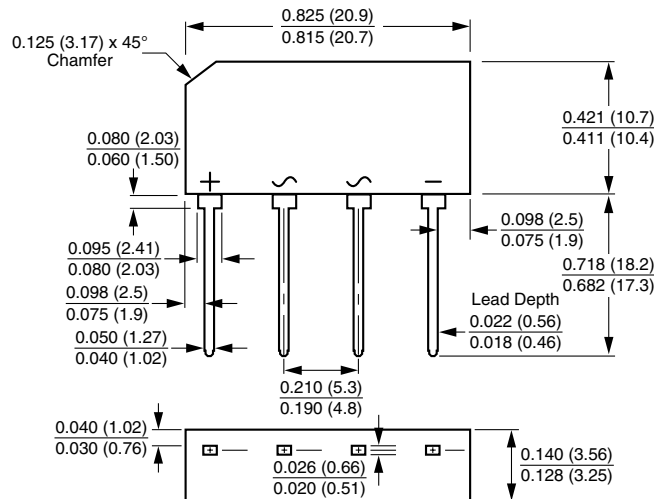


Figure 6. Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

Case Type GBL



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



Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.