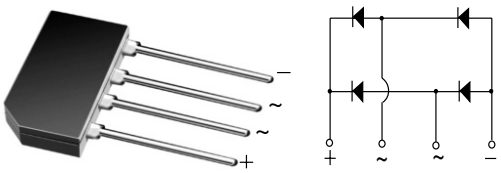
# Glass Passivated Single-Phase Bridge Rectifier



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.

## 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

| PRIMARY CHARACTERISTICS | |
|---|---|
| $I_{F(AV)}$ | 4 A |
| $V_{RRM}$ | 50 V to 1000 V |
| $I_{FSM}$ | 120 A |
| $I_R$ | 5 µA |
| $V_F$ | 1.0 V |
| $T_J$ max. | 150 °C |

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

| PARAMETER | SYMBOL | GBLA005 | GBLA01 | GBLA02 | GBLA04 | GBLA06 | GBLA08 | GBLA10 | 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) / $T_A$ = 40 °C (2) | $I_{F(AV)}$ | 4.0 / 3.0 | | | | | | | A |
| Peak forward surge current single sine-wave superimposed on rated load | $I_{FSM}$ | 120 | | | | | | | A |
| Rating for fusing (t < 8.3 ms) | $I^2t$ | 60 | | | | | | | $A^2s$ |
| 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

| **ELECTRICAL CHARACTERISTICS** ($T_A$ = 25 °C unless otherwise noted) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **PARAMETER** | **TEST CONDITIONS** | **SYMBOL** | **GBLA005** | **GBLA01** | **GBLA02** | **GBLA04** | **GBLA06** | **GBLA08** | **GBLA10** | **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<br>$T_A$ = 125 °C | $I_R$ | 5.0<br>500 | | | | | | | µA |

| **THERMAL CHARACTERISTICS** ($T_A$ = 25 °C unless otherwise noted) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **PARAMETER** | **SYMBOL** | **GBLA005** | **GBLA01** | **GBLA02** | **GBLA04** | **GBLA06** | **GBLA08** | **GBLA10** | **UNIT** |
| Typical thermal resistance | $R_{\theta JA}$<br>$R_{\theta JC}$ | 47 (2)<br>10 (1) | | | | | | | °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** |
| GBLA06-E3/45 | 2.133 | 45 | 20 | Tube |
| GBLA06-E3/51 | 2.133 | 51 | 400 | Anti-static PVC tray |

## RATINGS AND CHARACTERISTICS CURVES

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

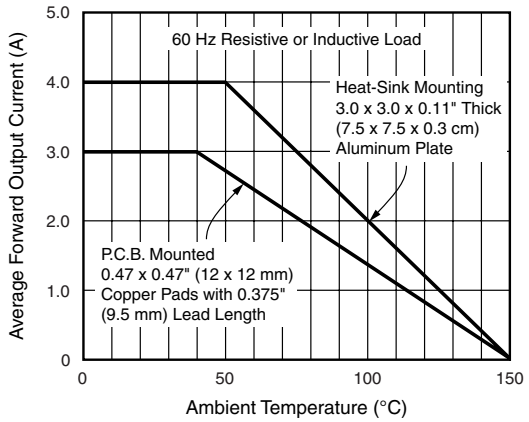



Figure 1. Derating Curves Output Rectified Current

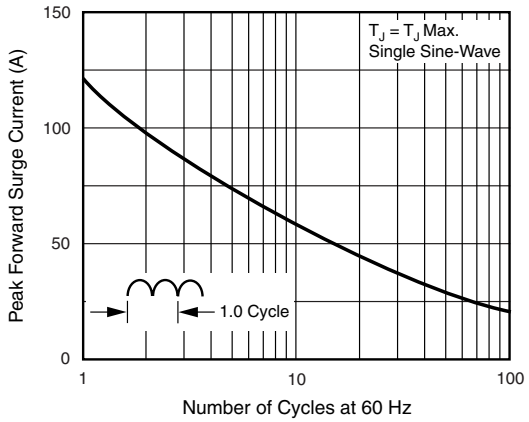



Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

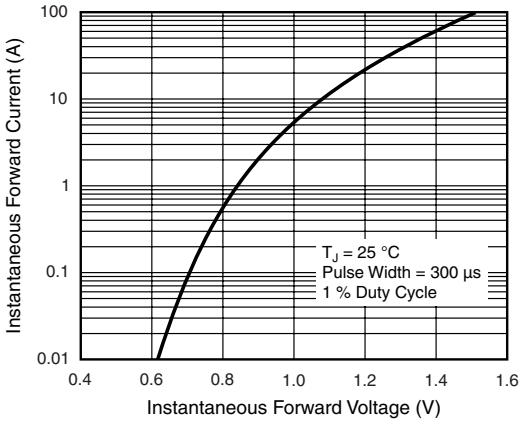



Figure 3. Typical Forward Voltage Characteristics Per Diode

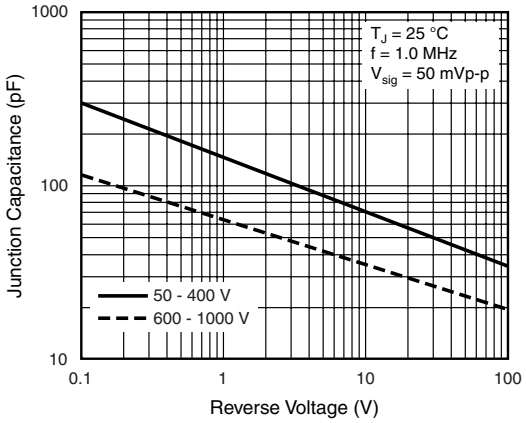



Figure 5. Typical Junction Capacitance Per Diode

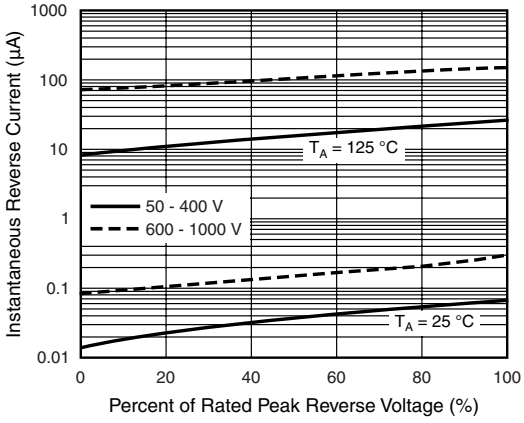



Figure 4. Typical Reverse Characteristics Per Diode

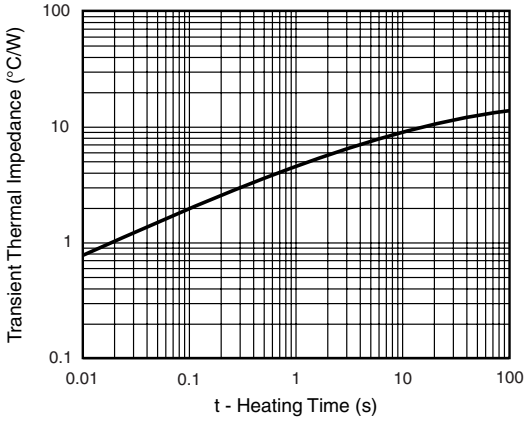
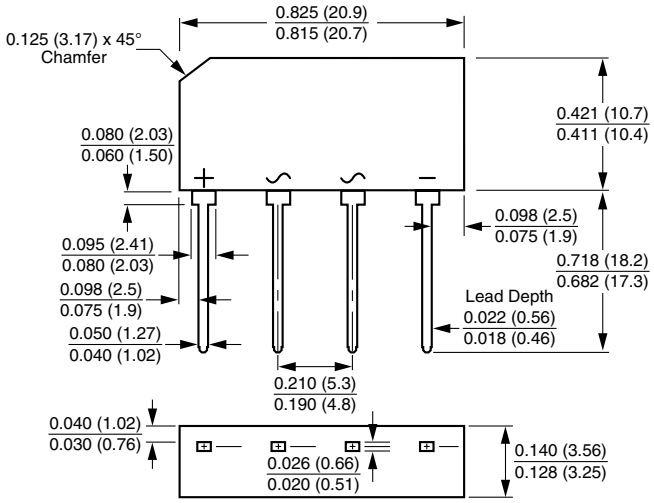



Figure 6. Typical Transient Thermal Impedance Per Diode

## **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**Case Type GBL**




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

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