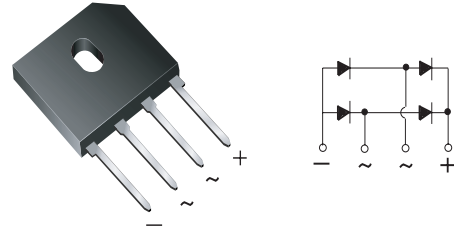


## Glass Passivated Single-Phase Bridge Rectifier

### Major Ratings and Characteristics

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



Case Style GBU

### Features

- UL Recognition file number E54214
- Ideal for printed circuit boards
- High surge current capability
- High case dielectric strength of 1500  $V_{RMS}$
- Meets MSL level 1, per J-STD-020C

### Typical Applications

General purpose use in ac-to-dc bridge full wave rectification for Monitor, TV, Printer, Switching Mode Power Supply, Adapter, Audio equipment, and Home Appliances applications.

### Mechanical Data

**Case:** GBU

Epoxy meets UL-94V-0 Flammability rating

**Terminals:** Matte Tin plated (E3 Suffix) leads, solderable per J-STD-002B and MIL-STD-750, Method 2026

**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 specified

| Parameter   | Symbol              | GBU4A         | GBU4B | GBU4D | GBU4G | GBU4J | GBU4K | GBU4M | 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 $T_C = 100$ °C (1)<br>$T_A = 40$ °C (2) | $I_{F(AV)}$         | 4.0<br>3.0    |       |       |       |       |       |       | A                  |
| 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> sec |
| Operating junction and storage temperature range  | $T_J,$<br>$T_{STG}$ | - 55 to + 150 |       |       |       |       |       |       | °C                 |

#### Note:

(1) Unit case mounted on 1.6 x 1.6 x 0.06" thick (4.0 x 4.0 x 0.15 cm) Al. Plate

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

# GBU4A thru GBU4M



Vishay Semiconductors

## Electrical Characteristics

$T_A = 25\text{ }^\circ\text{C}$ , unless otherwise specified

| Parameter   | Test condition  | Symbol | GBU4A      | GBU4B | GBU4D | GBU4G | GBU4J | GBU4K | GBU4M | Unit |               |
|---|---|--------|------------|-------|-------|-------|-------|-------|-------|------|---------------|
| Maximum instantaneous forward drop per leg                      | at 4.0 A  | $V_F$  | 1.0        |       |       |       |       |       |       |      | V             |
| Maximum DC reverse current at rated DC blocking voltage per leg | $T_A = 25\text{ }^\circ\text{C}$<br>$T_A = 125\text{ }^\circ\text{C}$ | $I_R$  | 5.0<br>500 |       |       |       |       |       |       |      | $\mu\text{A}$ |
| Typical junction capacitance per leg                            | at 4.0 A, 1MHz  | $C_J$  | 100        |       |       | 45    |       |       |       | pF   |               |

## Thermal Characteristics

$T_A = 25\text{ }^\circ\text{C}$ , unless otherwise specified

| Parameter                          | Symbol                | GBU4A | GBU4B | GBU4D | GBU4G | GBU4J | GBU4K | GBU4M | Unit |                    |
|------------------------------------|-----------------------|-------|-------|-------|-------|-------|-------|-------|------|--------------------|
| Typical thermal resistance per leg | $R_{\theta JA}^{(2)}$ | 22    |       |       |       |       |       |       |      | $^\circ\text{C/W}$ |
|                                    | $R_{\theta JC}^{(1)}$ | 4.2   |       |       |       |       |       |       |      |                    |

### Note:

(1) Unit case mounted on Al plate heatsink

(2) Units mounted on P.C.B with 0.5 x 0.5" (12 x 12 mm) Copper pads and 0.375" (9.5 mm) lead length

## Ratings and Characteristics Curves

( $T_A = 25^\circ\text{C}$  unless otherwise specified)

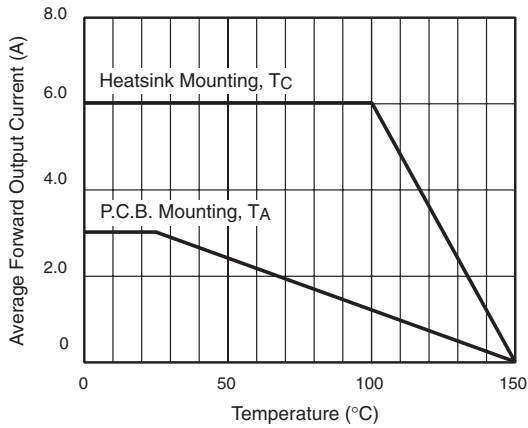


Figure 1. Derating Curve Output Rectified Current

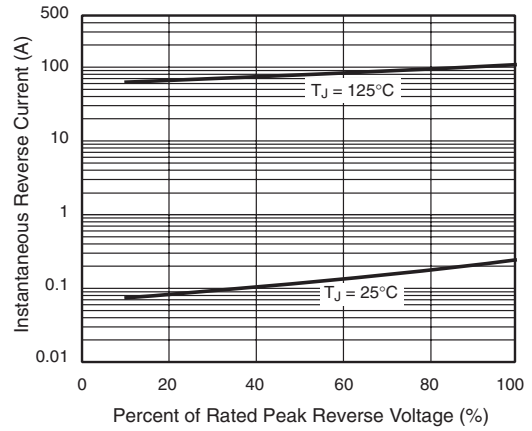


Figure 4. Typical Reverse Leakage Characteristics Per Leg

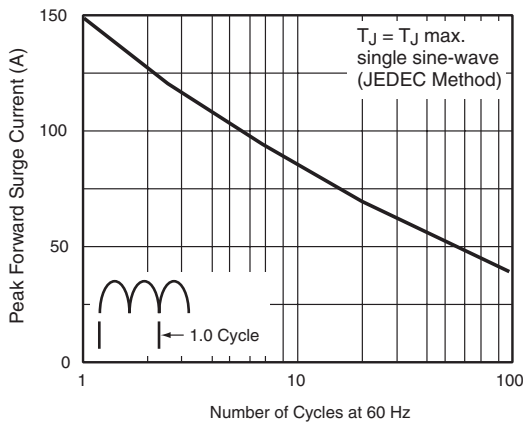


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Leg

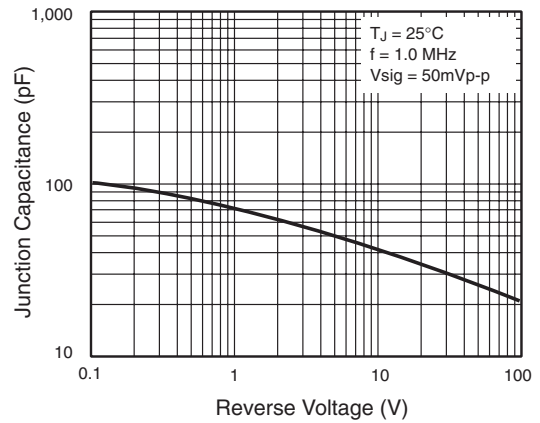


Figure 5. Typical Junction Capacitance Per Leg

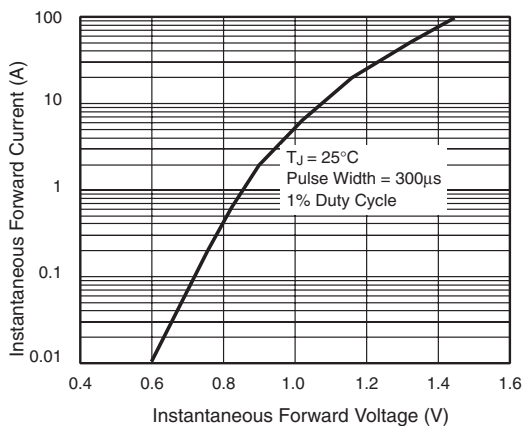


Figure 3. Typical Forward Characteristics Per Leg

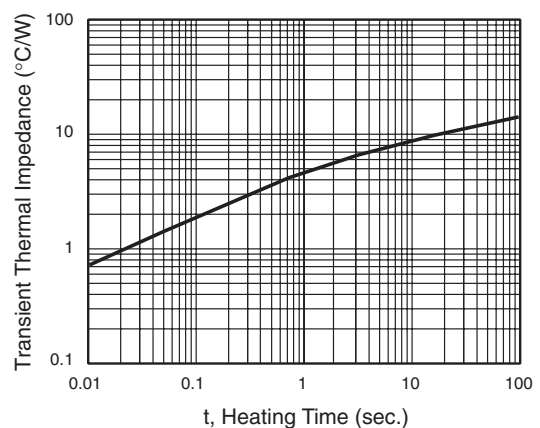


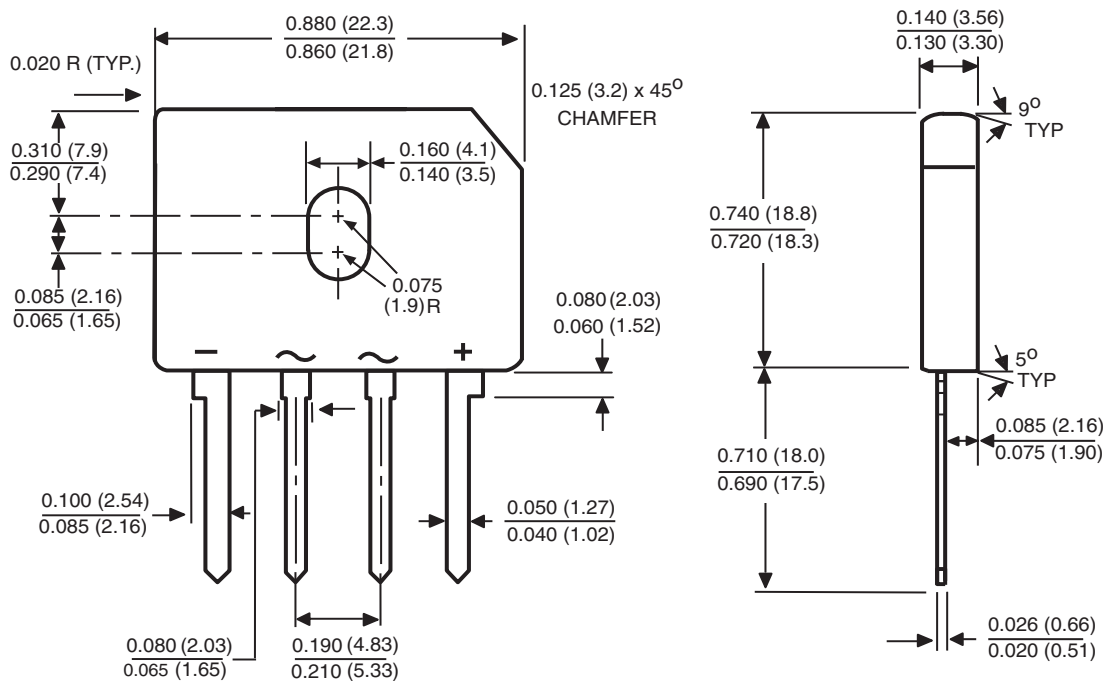
Figure 6. Typical Transient Thermal Impedance

# GBU4A thru GBU4M



Vishay Semiconductors

## Package Dimensions in Inches (millimeters)



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