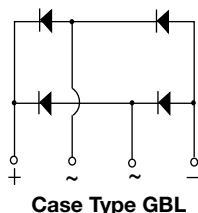
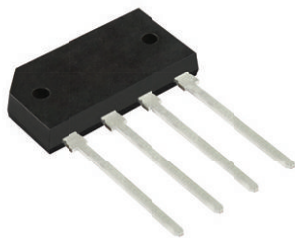




## Glass Passivated Single-Phase Bridge Rectifier



Case Type GBL

RoHS  
COMPLIANT

## FEATURES

- UL recognition file number E54214
- Enhanced thermal capability
- High surge current capability
- Typical reverse leakage current 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)

## LINKS TO ADDITIONAL RESOURCES



3D Models

## PRIMARY CHARACTERISTICS

|                        |                                                 |
|------------------------|-------------------------------------------------|
| $I_{F(AV)}$            | 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                                          |
| Package                | GBL                                             |
| Circuit configuration  | In-line                                         |

## 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

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

| PARAMETER                                                                        | SYMBOL                            | GBL005E            | GBL01E | GBL02E | GBL04E | GBL06E | GBL08E | GBL10E | UNIT             |
|----------------------------------------------------------------------------------|-----------------------------------|--------------------|--------|--------|--------|--------|--------|--------|------------------|
| Maximum repetitive peak reverse voltage                                          | V <sub>RRM</sub>                  | 50                 | 100    | 200    | 400    | 600    | 800    | 1000   | V                |
| Maximum RMS voltage                                                              | V <sub>RMS</sub>                  | 35                 | 70     | 140    | 280    | 420    | 560    | 700    | V                |
| Maximum DC blocking voltage                                                      | V <sub>DC</sub>                   | 50                 | 100    | 200    | 400    | 600    | 800    | 1000   | V                |
| Maximum average forward<br>rectified output current at<br>T <sub>A</sub> = 25 °C | I <sub>F(AV)</sub>                | 4.0 <sup>(1)</sup> |        |        |        |        |        |        | A                |
|                                                                                  |                                   | 2.6 <sup>(2)</sup> |        |        |        |        |        |        |                  |
| Peak forward surge current single sine-wave<br>superimposed on rated load        | I <sub>FSM</sub>                  | 150                |        |        |        |        |        |        | A                |
| Rating for fusing (t < 8.3 ms)                                                   | I <sup>2</sup> t                  | 93                 |        |        |        |        |        |        | A <sup>2</sup> s |
| Operating junction and storage temperature range                                 | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150        |        |        |        |        |        |        | °C               |

## Note

<sup>(1)</sup> 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

<sup>(2)</sup> Free air, mounted on recommended copper pad area

ELECTRICAL CHARACTERISTICS ( $T_J = 25$  °C unless otherwise noted)

| PARAMETER                                                         | TEST CONDITIONS         | SYMBOL         | GBL005E | GBL01E | GBL02E | GBL04E | GBL06E | GBL08E | GBL10E | UNIT |
|-------------------------------------------------------------------|-------------------------|----------------|---------|--------|--------|--------|--------|--------|--------|------|
| Maximum instantaneous forward voltage drop per diode              | 4.0 A                   | V <sub>F</sub> | 1.0     |        |        |        |        |        |        | V    |
| Maximum DC reverse current at rated DC blocking voltage per diode | T <sub>J</sub> = 25 °C  | I <sub>R</sub> | 5.0     |        |        |        |        |        |        | μA   |
|                                                                   | T <sub>J</sub> = 125 °C |                | 500     |        |        |        |        |        |        |      |
| Typical junction capacitance per diode                            | 4.0 V, 1 MHz            | C <sub>J</sub> | 50      |        |        |        |        |        |        | pF   |



| THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                  |                      |        |        |        |        |        |        |      |
|-------------------------------------------------------------------------|------------------|----------------------|--------|--------|--------|--------|--------|--------|------|
| PARAMETER                                                               | SYMBOL           | GBL005E              | GBL01E | GBL02E | GBL04E | GBL06E | GBL08E | GBL10E | UNIT |
| Typical thermal resistance                                              | R <sub>θJA</sub> | 28 <sup>(1)(2)</sup> |        |        |        |        |        |        | °C/W |
|                                                                         | R <sub>θJM</sub> | 2.2 <sup>(3)</sup>   |        |        |        |        |        |        |      |

## Notes

- (1) The heat generated must be less than the thermal conductivity from junction-to-ambient:  $dP_D/R_{\theta JA}$
- (2) Thermal resistance junction-to-ambient to follow JEDEC<sup>®</sup> 51-2A, device mounted on FR4 PCB, 2 oz., standard footprint
- (3) Thermal resistance junction-to-mount to follow JEDEC<sup>®</sup> 51-14 transient dual interface test method (TDIM)

| ORDERING INFORMATION (Example) |                 |                        |               |               |
|--------------------------------|-----------------|------------------------|---------------|---------------|
| PREFERRED P/N                  | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| GBL06E-E3/P                    | 2.31            | P                      | 20            | Tube          |
| GBL06E-E3/A                    | 2.31            | A                      | 400           | Paper tray    |

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

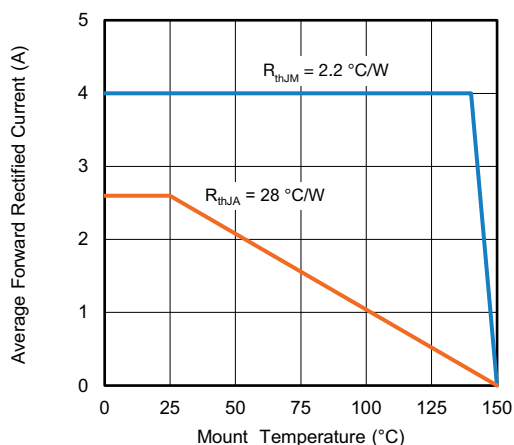


Fig. 1 - Derating Curves Output Rectified Current

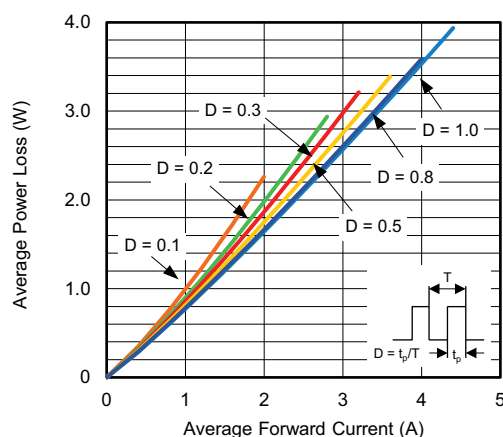


Fig. 3 - Forward Power Loss Characteristics Per Diode

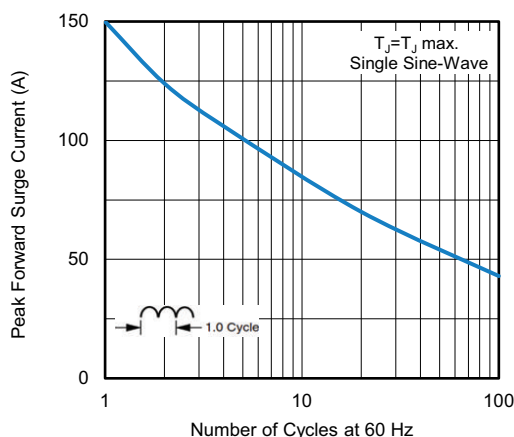


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

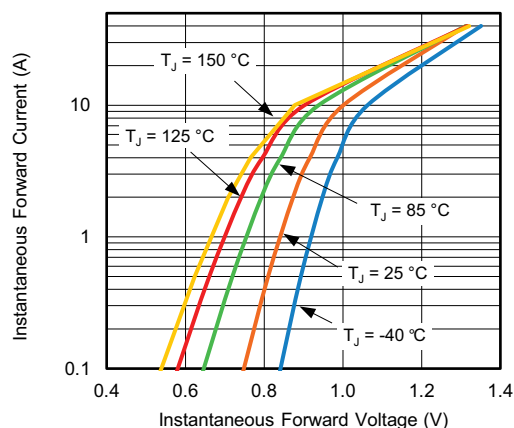


Fig. 4 - Typical Forward Voltage Characteristics Per Diode

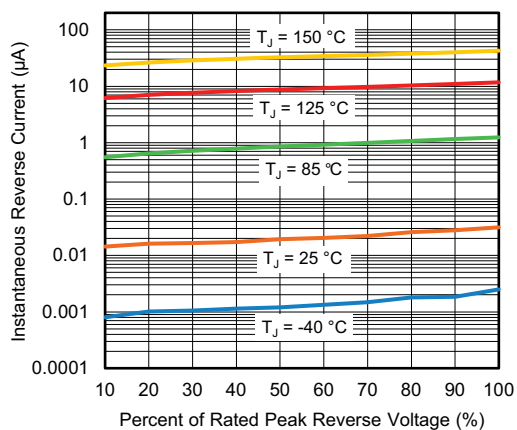


Fig. 5 - Typical Reverse Characteristics Per Diode

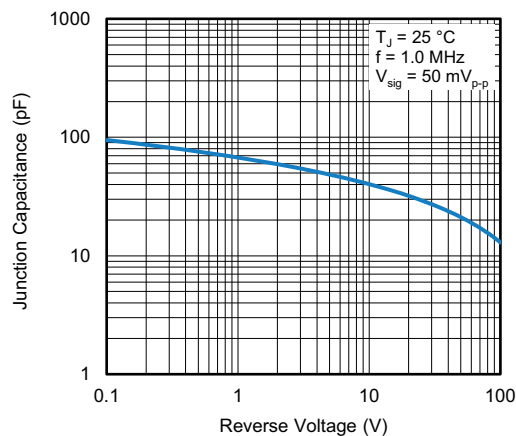


Fig. 6 - Typical Junction Capacitance Per Diode

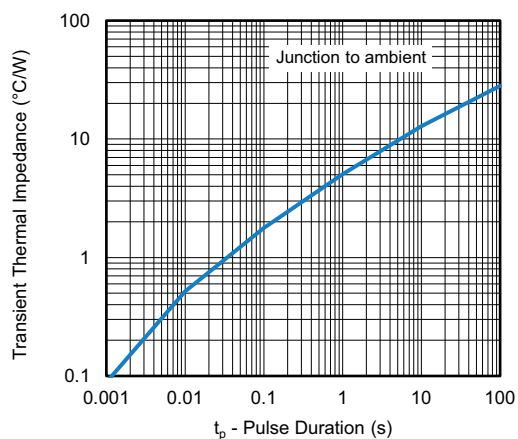
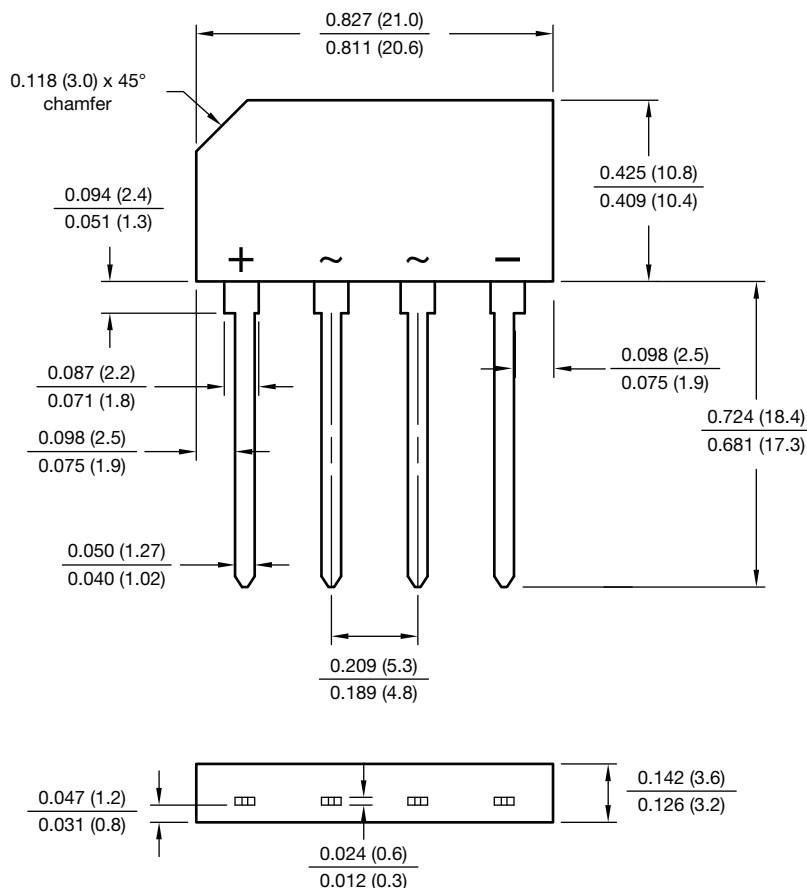


Fig. 7 - Typical Transient Thermal Impedance Per Diode



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





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