

## 4A, 50V - 1000V Standard Bridge Rectifier

### FEATURES

- AEC-Q101 qualified available
- Glass passivated chip junction
- Ideal for printed circuit board
- High case dielectric strength
- Typical IR less than 0.1 $\mu$ A
- UL Recognized File # E-326243
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

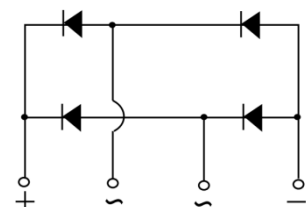
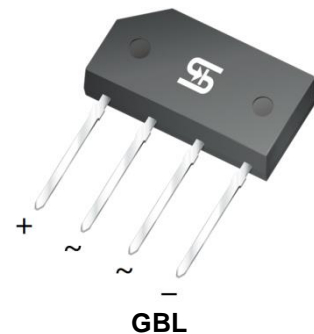
### APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application

### MECHANICAL DATA

- Case: GBL
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 2.00g (approximately)

| KEY PARAMETERS |           |              |
|----------------|-----------|--------------|
| PARAMETER      | VALUE     | UNIT         |
| $I_F$          | 4         | A            |
| $V_{RRM}$      | 50 - 1000 | V            |
| $I_{FSM}$      | 150       | A            |
| $T_{J\ MAX}$   | 150       | $^{\circ}$ C |
| Package        | GBL       |              |
| Configuration  | Quad      |              |



### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^{\circ}$ C unless otherwise noted)

| PARAMETER  | SYMBOL               | GBL 005      | GBL 01 | GBL 02 | GBL 04 | GBL 06 | GBL 08 | GBL 10 | UNIT             |
|--|----------------------|--------------|--------|--------|--------|--------|--------|--------|------------------|
| Marking code on the device   |                      | GBL005       | GBL01  | GBL02  | GBL04  | GBL06  | GBL08  | GBL10  |                  |
| Repetitive peak reverse voltage  | $V_{RRM}$            | 50           | 100    | 200    | 400    | 600    | 800    | 1000   | V                |
| Reverse voltage, total rms value   | $V_{R(RMS)}$         | 35           | 70     | 140    | 280    | 420    | 560    | 700    | V                |
| Forward current  | $T_C = 50^{\circ}$ C | 4            |        |        |        |        |        |        | A                |
|  | $T_A = 40^{\circ}$ C | 3            |        |        |        |        |        |        | A                |
| Surge peak forward current, 8.3ms single half 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 |
| Junction temperature   | $T_J$                | - 55 to +150 |        |        |        |        |        |        | $^{\circ}$ C     |
| Storage temperature  | $T_{STG}$            | - 55 to +150 |        |        |        |        |        |        | $^{\circ}$ C     |

| <b>THERMAL PERFORMANCE</b>             |                 |            |             |
|--|-----------------|------------|-------------|
| <b>PARAMETER</b>                       | <b>SYMBOL</b>   | <b>TYP</b> | <b>UNIT</b> |
| Junction-to-lead thermal resistance    | $R_{\theta JL}$ | 13         | °C/W        |
| Junction-to-ambient thermal resistance | $R_{\theta JA}$ | 32         | °C/W        |
| Junction-to-case thermal resistance    | $R_{\theta JC}$ | 8          | °C/W        |

| <b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted) |   |               |            |            |               |
|---|---|---------------|------------|------------|---------------|
| <b>PARAMETER</b>  | <b>CONDITIONS</b>                         | <b>SYMBOL</b> | <b>TYP</b> | <b>MAX</b> | <b>UNIT</b>   |
| Forward voltage per diode <sup>(1)</sup>  | $I_F = 2\text{A}, T_J = 25^\circ\text{C}$ | $V_F$         | -          | 1.0        | V             |
|   | $I_F = 4\text{A}, T_J = 25^\circ\text{C}$ |               | -          | 1.1        | V             |
| Reverse current @ rated $V_R$ per diode <sup>(2)</sup>                              | $T_J = 25^\circ\text{C}$                  | $I_R$         | -          | 5          | $\mu\text{A}$ |
|   | $T_J = 125^\circ\text{C}$                 |               | -          | 500        | $\mu\text{A}$ |
| Junction capacitance per diode  | 1MHz, $V_R = 4.0\text{V}$                 | $C_J$         | 95         | -          | pF            |
|   |   |               | 40         | -          | pF            |

**Notes:**

1. Pulse test with  $PW = 0.3\text{ms}$
2. Pulse test with  $PW = 30\text{ms}$

| <b>ORDERING INFORMATION</b>            |                |                |
|--|----------------|----------------|
| <b>ORDERING CODE</b> <sup>(1)(2)</sup> | <b>PACKAGE</b> | <b>PACKING</b> |
| GBLx                                   | GBL            | 25 / Tube      |
| GBLxH                                  | GBL            | 25 / Tube      |

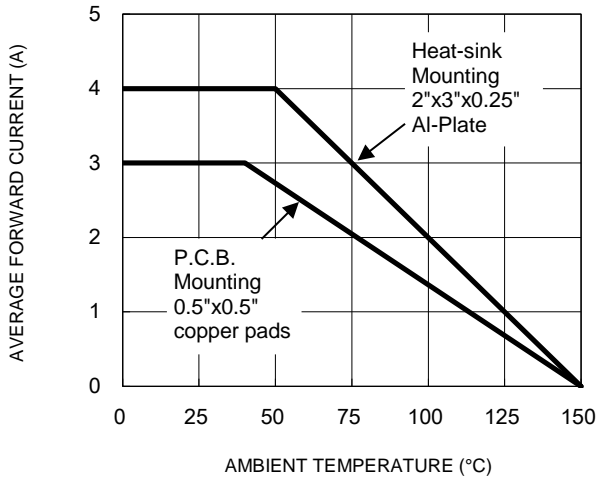
**Notes:**

1. "x" defines voltage from 50V(GBL005) to 1000V(GBL10)
2. "H" means AEC-Q101 qualified

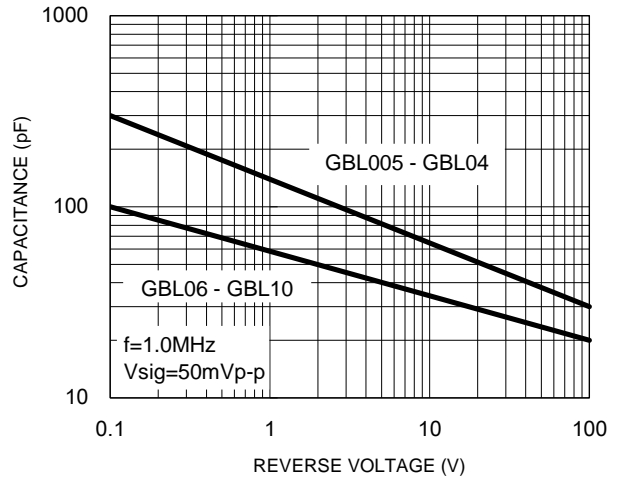
**CHARACTERISTICS CURVES**

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

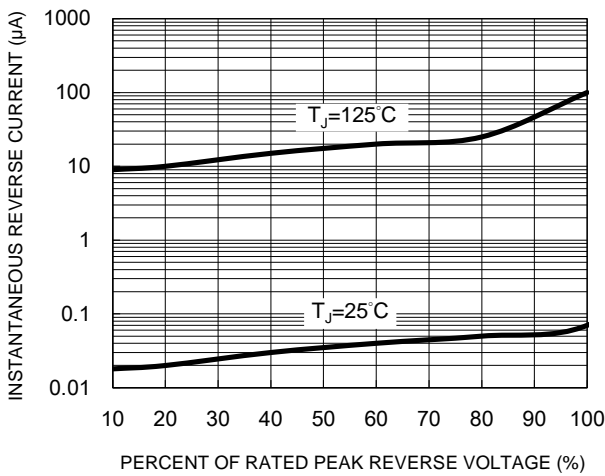
**Fig.1 Forward Current Derating Curve**



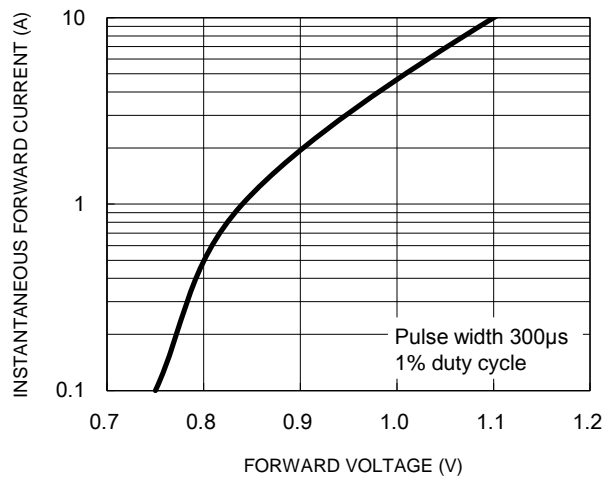
**Fig.2 Typical Junction Capacitance**



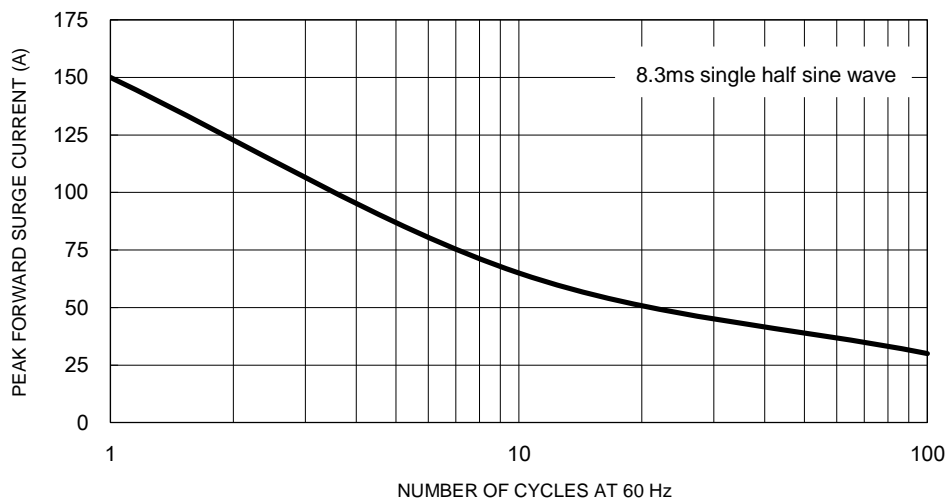
**Fig.3 Typical Reverse Characteristics**



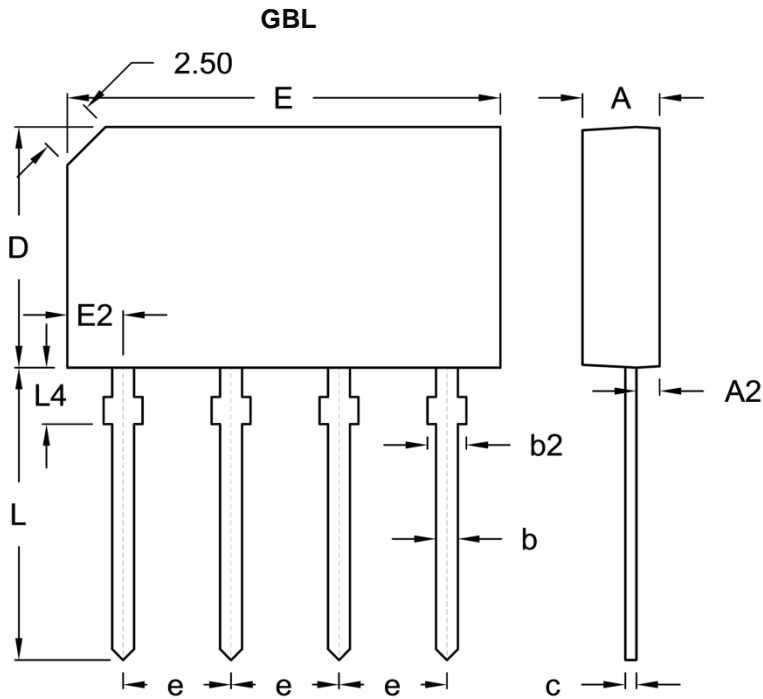
**Fig.4 Typical Forward Characteristics**



**Fig.5 Maximum Non-Repetitive Forward Surge Current**



**PACKAGE OUTLINE DIMENSIONS**



| DIM. | Unit (mm) |       | Unit (inch) |       |
|------|-----------|-------|-------------|-------|
|      | Min.      | Max.  | Min.        | Max.  |
| A    | 3.30      | 3.70  | 0.130       | 0.146 |
| A2   | 0.80      | 1.20  | 0.031       | 0.047 |
| b    | 0.90      | 1.10  | 0.035       | 0.043 |
| b2   | 1.30      | 2.00  | 0.051       | 0.079 |
| c    | 0.40      | 0.60  | 0.016       | 0.024 |
| D    | 10.70     | 11.30 | 0.421       | 0.445 |
| E    | 19.70     | 20.30 | 0.776       | 0.799 |
| E2   | 2.30      | 2.70  | 0.091       | 0.106 |
| e    | 4.80      | 5.20  | 0.189       | 0.205 |
| L    | 13.00     | 14.00 | 0.512       | 0.551 |
| L4   | 2.30      | 2.70  | 0.091       | 0.106 |

**MARKING DIAGRAM**



- P/N = Marking Code
- G = Green Compound
- YWW = Date Code
- F = Factory Code