

## 8A, 50V - 1000V Glass Passivated Single-Phase Bridge Rectifier

### FEATURES

- Ideal for printed circuit board
- High case dielectric strength of 1500 V<sub>RMS</sub>
- High surge current capability
- Typical I<sub>R</sub> less than 0.1μA
- UL Recognized File # E-326243
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

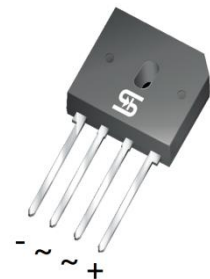
### APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- TV
- Monitor

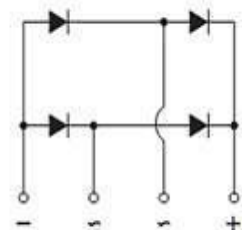
### MECHANICAL DATA

- Case: GBU
- Molding compound meets UL 94V-0 flammability rating
- Packing code with suffix "G" means green compound (halogen-free)
- Part no. with suffix "H" means AEC-Q101 qualified
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Polarity: As marked
- Weight: 4 g (approximately)

| KEY PARAMETERS     |           |      |
|--------------------|-----------|------|
| PARAMETER          | VALUE     | UNIT |
| I <sub>F(AV)</sub> | 8         | A    |
| V <sub>RRM</sub>   | 50 - 1000 | V    |
| I <sub>FSM</sub>   | 200       | A    |
| T <sub>J MAX</sub> | 150       | °C   |
| Package            | GBU       |      |
| Configuration      | Quad      |      |



GBU



| ABSOLUTE MAXIMUM RATINGS (T <sub>A</sub> = 25°C unless otherwise noted)                        |                     |              |         |         |         |         |         |         |                  |
|------------------------------------------------------------------------------------------------|---------------------|--------------|---------|---------|---------|---------|---------|---------|------------------|
| PARAMETER                                                                                      | SYMBOL              | GBU 801      | GBU 802 | GBU 803 | GBU 804 | GBU 805 | GBU 806 | GBU 807 | UNIT             |
| Marking code on the device                                                                     |                     | GBU 801      | GBU 802 | GBU 803 | GBU 804 | GBU 805 | GBU 806 | GBU 807 |                  |
| Repetitive peak reverse voltage                                                                | V <sub>RRM</sub>    | 50           | 100     | 200     | 400     | 600     | 800     | 1000    | V                |
| Reverse voltage, total rms value                                                               | V <sub>R(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                |
| Forward current                                                                                | I <sub>F(AV)</sub>  | 8            |         |         |         |         |         |         | A                |
| Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode) | I <sub>FSM</sub>    | 200          |         |         |         |         |         |         | A                |
| Rating of fusing ( t<8.3ms)                                                                    | I <sup>2</sup> t    | 166          |         |         |         |         |         |         | A <sup>2</sup> s |
| Junction temperature                                                                           | T <sub>J</sub>      | - 55 to +150 |         |         |         |         |         |         | °C               |
| Storage temperature                                                                            | T <sub>STG</sub>    | - 55 to +150 |         |         |         |         |         |         | °C               |

**THERMAL PERFORMANCE**

| PARAMETER                              | SYMBOL          | LIMIT | UNIT |
|----------------------------------------|-----------------|-------|------|
| Junction-to-ambient thermal resistance | $R_{\theta JA}$ | 21    | °C/W |
| Junction-to-case thermal resistance    | $R_{\theta JC}$ | 2     | °C/W |

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

| PARAMETER                                              | CONDITIONS                                                         | SYMBOL | TYP | MAX | UNIT          |
|--------------------------------------------------------|--------------------------------------------------------------------|--------|-----|-----|---------------|
| Forward voltage per diode <sup>(1)</sup>               | $I_F = 4\text{A}, T_J = 25^\circ\text{C}$                          | $V_F$  | -   | 1.0 | V             |
|                                                        | $I_F = 8\text{A}, T_J = 25^\circ\text{C}$                          |        | -   | 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                                   | GBU801<br>GBU802<br>GBU803<br>GBU804<br>1 MHz, $V_R = 4.0\text{V}$ | $C_J$  | 211 | -   | pF            |
|                                                        |                                                                    |        | 94  | -   | pF            |
|                                                        | GBU805<br>GBU806<br>GBU807                                         |        |     |     |               |

**Notes:**

- Pulse test with  $PW = 0.3\text{ ms}$
- Pulse test with  $PW = 30\text{ ms}$

**ORDERING INFORMATION**

| PART NO.           | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX(*) | PACKAGE | PACKING   |
|--------------------|-----------------|--------------|------------------------|---------|-----------|
| GBU80x<br>(Note 1) | H               | C2           | G                      | GBU     | 20 / Tube |
|                    |                 | D2           |                        |         | 20 / Tube |
|                    |                 | X0           |                        |         | Forming   |

**Note:**

- "x" defines voltage from 50V (GBU801) to 1000V (GBU807)

\*: Optional available

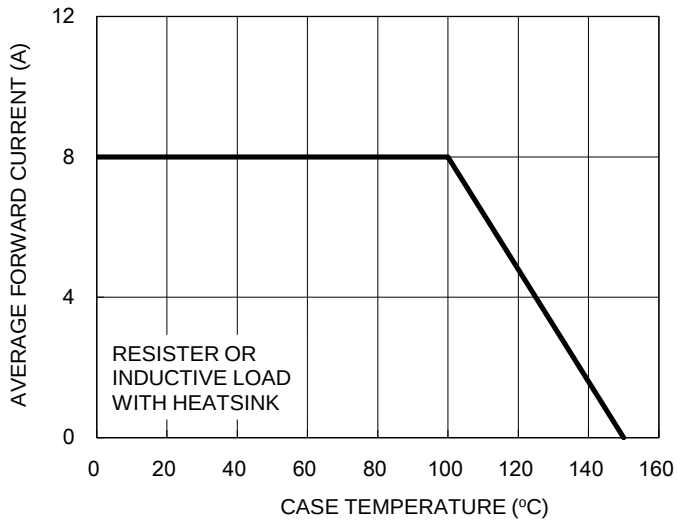
**EXAMPLE P/N**

| EXAMPLE P/N | PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION                          |
|-------------|----------|-----------------|--------------|---------------------|--------------------------------------|
| GBU806HC2G  | GBU806   | H               | C2           | G                   | AEC-Q101 qualified<br>Green compound |

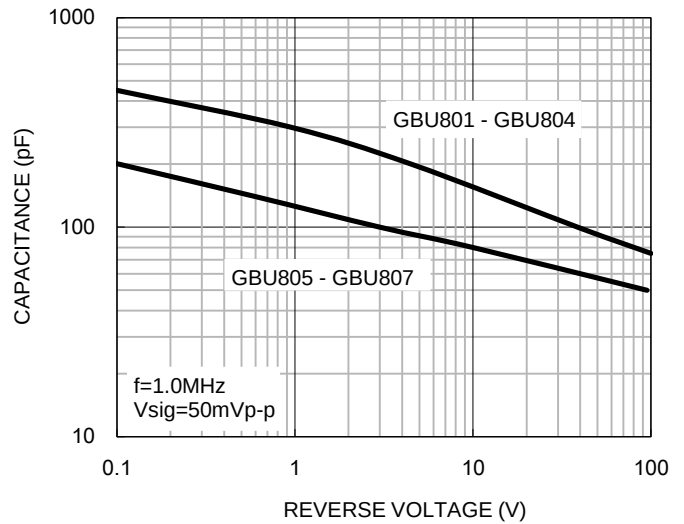
## CHARACTERISTICS CURVES

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

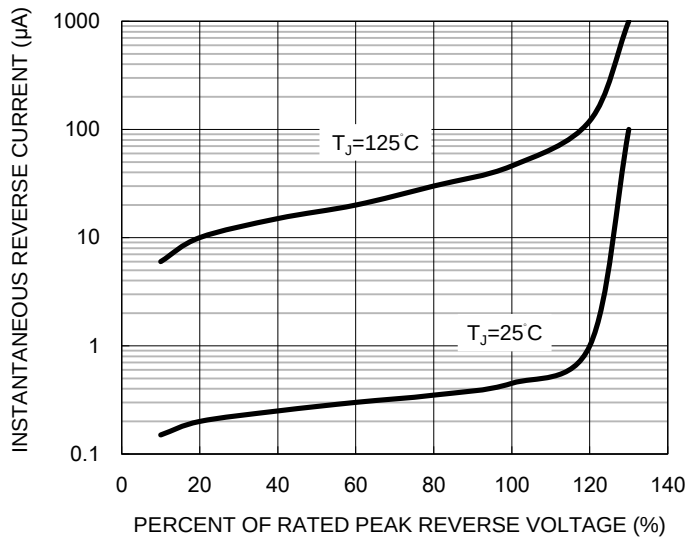
**Fig.1 Forward Current Derating Curve**



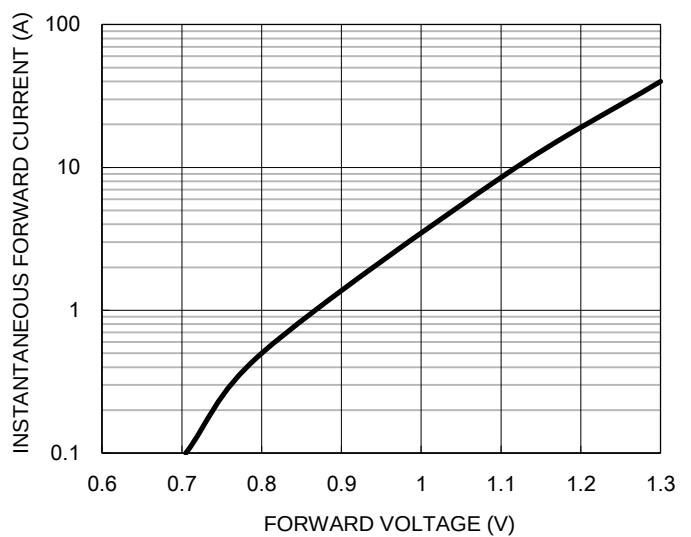
**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Reverse Characteristics**



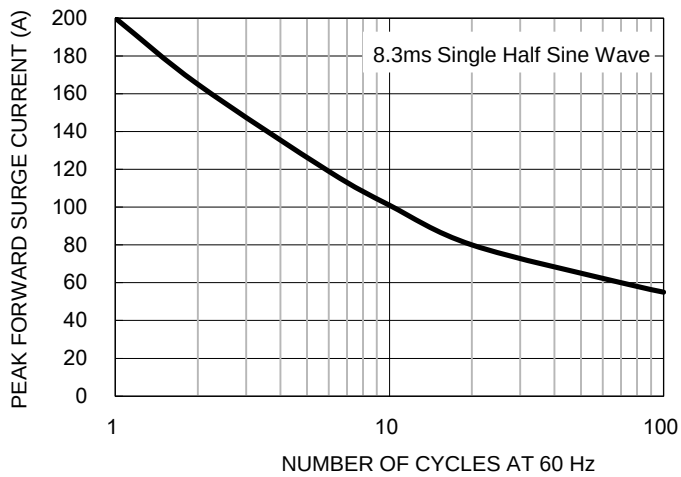
**Fig.4 Typical Forward Characteristics**



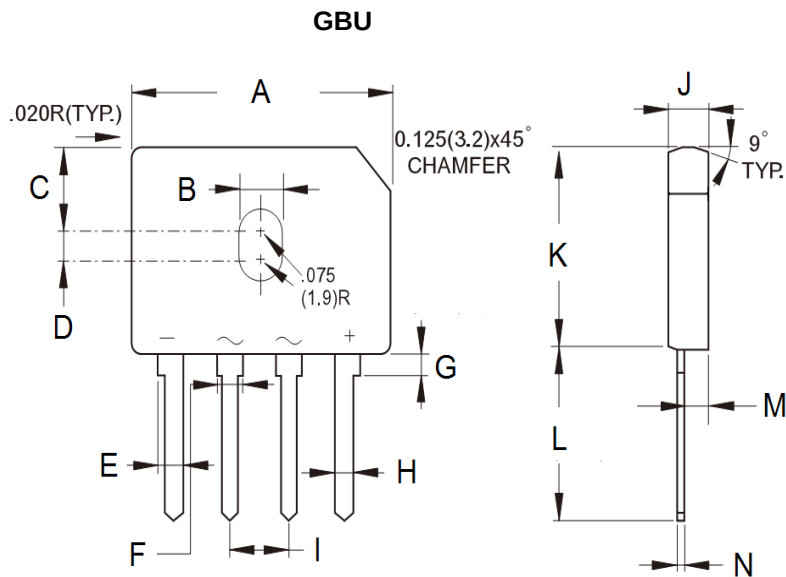
## CHARACTERISTICS CURVES

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

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



## PACKAGE OUTLINE DIMENSIONS



| DIM. | Unit (mm) |       | Unit (inch) |       |
|------|-----------|-------|-------------|-------|
|      | Min       | Max   | Min         | Max   |
| A    | 21.80     | 22.30 | 0.858       | 0.878 |
| B    | 3.50      | 4.10  | 0.138       | 0.161 |
| C    | 7.40      | 7.90  | 0.291       | 0.311 |
| D    | 1.65      | 2.16  | 0.065       | 0.085 |
| E    | 2.16      | 2.54  | 0.085       | 0.100 |
| F    | 1.65      | 2.03  | 0.065       | 0.080 |
| G    | 1.52      | 2.03  | 0.060       | 0.080 |
| H    | 1.02      | 1.27  | 0.040       | 0.050 |
| I    | 4.83      | 5.33  | 0.190       | 0.210 |
| J    | 3.30      | 3.56  | 0.130       | 0.140 |
| K    | 18.30     | 18.80 | 0.720       | 0.740 |
| L    | 17.50     | 18.00 | 0.689       | 0.709 |
| M    | 1.90      | 2.16  | 0.075       | 0.085 |
| N    | 0.46      | 0.56  | 0.018       | 0.022 |

## MARKING DIAGRAM



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

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