

## 15A, 600V Low $V_F$ Standard Bridge Rectifier

### FEATURES

- Qualification reference AEC-Q101
- Ideal for printed circuit board
- Low forward voltage drop
- High surge current capability
- UL Recognized File # E-326243
- High case dielectric strength of 2000  $V_{RMS}$
- RoHS Compliant
- Halogen-free

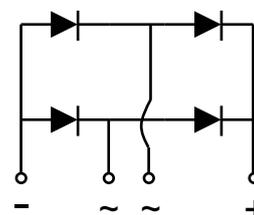
### APPLICATIONS

- Switching mode power supply (SMPS)
- AC to DC
- On board charger

### MECHANICAL DATA

- Case: GBU
- 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: 4.03g (approximately)

| KEY PARAMETERS        |         |      |
|-----------------------|---------|------|
| PARAMETER             | VALUE   | UNIT |
| $I_F$                 | 15      | A    |
| $V_{RRM}$             | 600     | V    |
| $I_{FSM}$             | 280     | A    |
| $T_{JMAX}$            | 175     | °C   |
| Package               | GBU     |      |
| Circuit Configuration | In-line |      |



| ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)            |                    |              |                      |
|--|--------------------|--------------|----------------------|
| PARAMETER  | SYMBOL             | VALUE        | UNIT                 |
| Repetitive peak reverse voltage  | $V_{RRM}$          | 600          | V                    |
| Reverse voltage, total rms value   | $V_{R(RMS)}$       | 420          | V                    |
| Forward current  | $I_F$              | 15           | A                    |
| Surge peak forward current, single half sine-wave superimposed on rated load per diode | $t = 8.3\text{ms}$ | 280          | A                    |
|  | $t = 1.0\text{ms}$ | 620          |                      |
| Rating of fusing ( $t < 8.3\text{ms}$ )  | $I^2t$             | 325          | $\text{A}^2\text{s}$ |
| Junction temperature   | $T_J$              | - 55 to +175 | °C                   |
| Storage temperature  | $T_{STG}$          | - 55 to +175 | °C                   |

| <b>THERMAL PERFORMANCE</b>             |                 |            |             |
|--|-----------------|------------|-------------|
| <b>PARAMETER</b>                       | <b>SYMBOL</b>   | <b>TYP</b> | <b>UNIT</b> |
| Junction-to-lead thermal resistance    | $R_{\theta JL}$ | 1.2        | °C/W        |
| Junction-to-ambient thermal resistance | $R_{\theta JA}$ | 6.6        | °C/W        |
| Junction-to-case thermal resistance    | $R_{\theta JC}$ | 1.0        | °C/W        |

**Thermal Performance Note:** Mounted on Heat sink with 4" x 6" x 0.25" Al-Plate

| <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>  | $I_F = 7.5\text{A}, T_J = 25^\circ\text{C}$                   | $V_F$         | 0.87       | 0.9        | V             |
|   | $I_F = 7.5\text{A}, T_J = 125^\circ\text{C}$                  |               | 0.76       | -          | V             |
| Reverse current @ rated $V_R$ per diode <sup>(2)</sup>                              | $T_J = 25^\circ\text{C}$                                      | $I_R$         | -          | 10         | $\mu\text{A}$ |
|   | $T_J = 125^\circ\text{C}$                                     |               | 0.5        | -          | $\mu\text{A}$ |
| Junction capacitance per diode  | 1MHz, $V_R = 4.0\text{V}$                                     | $C_J$         | 148        | -          | pF            |
| Reverse recovery time   | $I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{rr} = 0.25\text{A}$ | $t_{rr}$      | 915        | -          | ns            |

**Notes:**

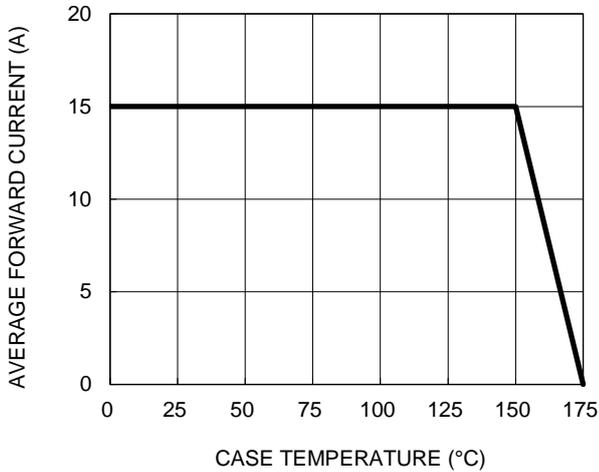
1. Pulse test with  $PW = 0.3\text{ms}$
2. Pulse test with  $PW = 30\text{ms}$

| <b>ORDERING INFORMATION</b> |                |                |
|-----------------------------|----------------|----------------|
| <b>ORDERING CODE</b>        | <b>PACKAGE</b> | <b>PACKING</b> |
| GBUL15J                     | GBU            | 20 / Tube      |

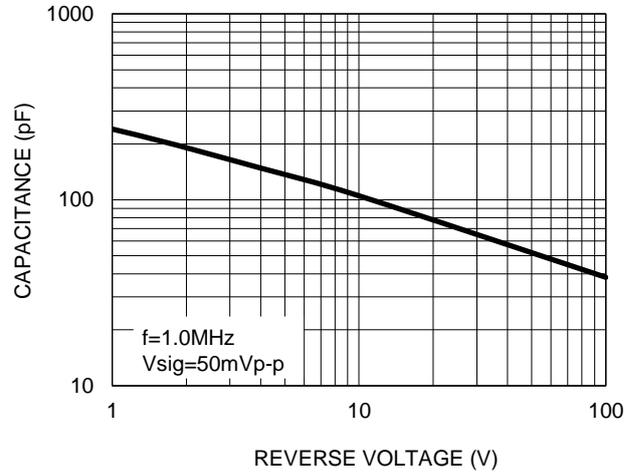
**CHARACTERISTICS CURVES**

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

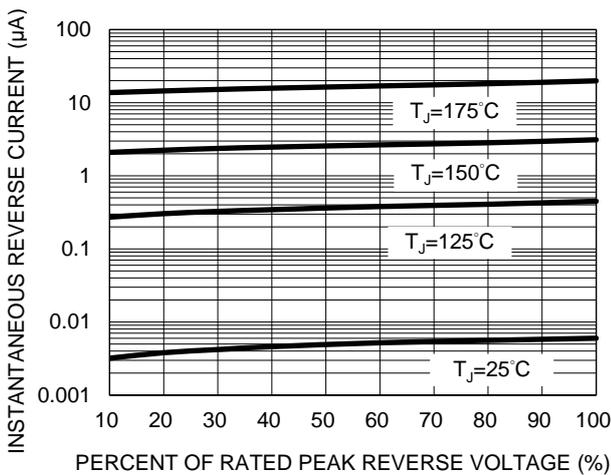
**Fig.1 Forward Current Derating Curve**



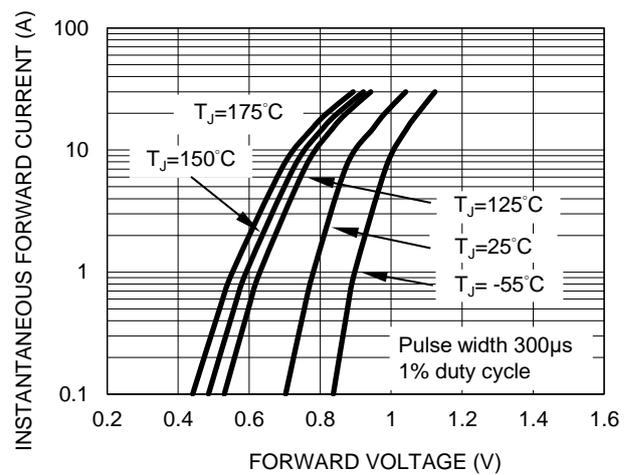
**Fig.2 Typical Junction Capacitance**



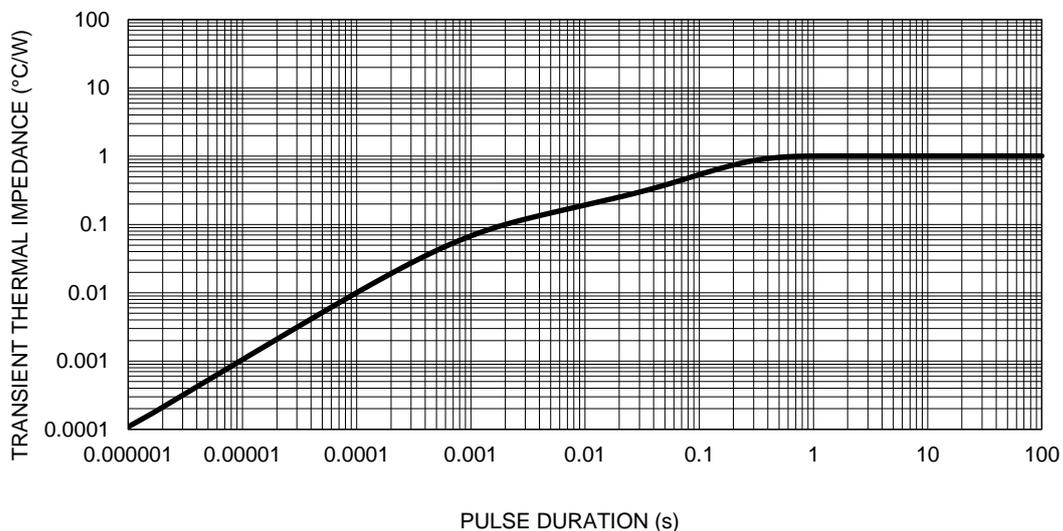
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**

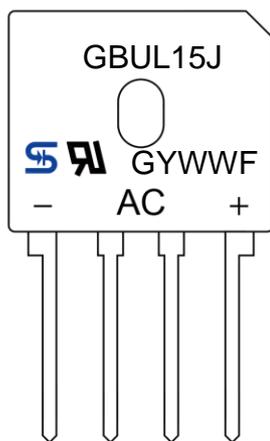
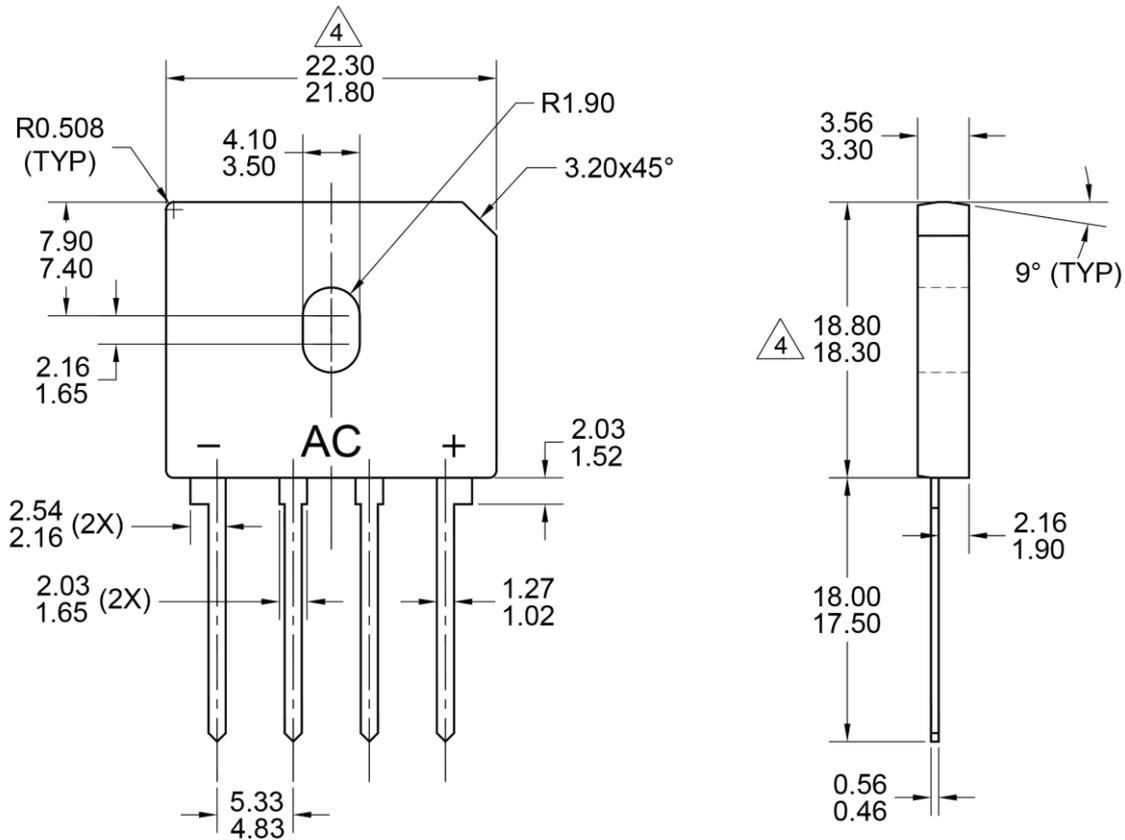


**Fig.5 Typical Transient Thermal Impedance**



**PACKAGE OUTLINE DIMENSIONS**

**GBU**



**MARKING DIAGRAM**

G = GREEN COMPOUND  
 YWW = DATE CODE  
 F = FACTORY CODE

**NOTES: UNLESS OTHERWISE SPECIFIED**

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. THERE IS NO EXISTING PACKAGE OUTLINE INDUSTRY STANDARD FOR THIS PACKAGE.
4. MOLDED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
5. DWG NO. REF: HQ2SD07-GBU-068 REV A.

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