

6A, 50V - 1000V Standard Bridge Rectifier

FEATURES

- AEC-Q101 qualified available
- Ideal for printed circuit board
- High case dielectric strength of 1500V_{RMS}
- High surge current capability
- Typical IR less than 0.1μA
- UL Recognized File # E-326243
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

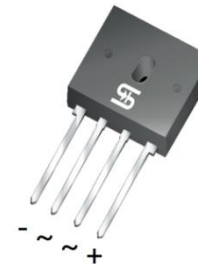
APPLICATIONS

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

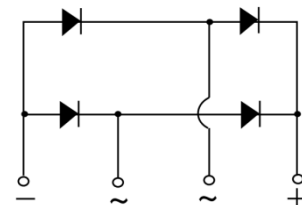
MECHANICAL DATA

- Case: GBU
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Mounting torque: 0.56 N·m maximum
- Polarity: As marked
- Weight: 4.00g (approximately)

| KEY PARAMETERS | | |
|----------------|-----------|------|
| PARAMETER | VALUE | UNIT |
| I_F | 6 | A |
| V_{RRM} | 50 - 1000 | V |
| I_{FSM} | 175 | A |
| $T_{J\ MAX}$ | 150 | °C |
| Package | GBU | |
| Configuration | Quad | |



GBU



| ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | | | | | | | |
|--|--------------|--------------|---------|---------|---------|---------|---------|---------|------------------|
| PARAMETER | SYMBOL | GBU 601 | GBU 602 | GBU 603 | GBU 604 | GBU 605 | GBU 606 | GBU 607 | UNIT |
| Marking code on the device | | GBU 601 | GBU 602 | GBU 603 | GBU 604 | GBU 605 | GBU 606 | GBU 607 | |
| 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 | I_F | 6 | | | | | | | A |
| Surge peak forward current, 8.3ms single half sine-wave superimposed on rated load | I_{FSM} | 175 | | | | | | | A |
| Rating for fusing ($t < 8.3\text{ms}$) | I^2t | 127 | | | | | | | A ² s |
| Junction temperature | T_J | - 55 to +150 | | | | | | | °C |
| Storage temperature | T_{STG} | - 55 to +150 | | | | | | | °C |

| THERMAL PERFORMANCE | | | |
|--|-----------------|------------|-------------|
| PARAMETER | SYMBOL | TYP | 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 ⁽¹⁾ | | $I_F = 3\text{A}, T_J = 25^\circ\text{C}$ | V_F | - | 1.0 | V |
| | | $I_F = 6\text{A}, T_J = 25^\circ\text{C}$ | | - | 1.1 | V |
| Reverse current @ rated V_R per diode ⁽²⁾ | | $T_J = 25^\circ\text{C}$ | I_R | - | 5 | μA |
| | | $T_J = 125^\circ\text{C}$ | | - | 500 | μA |
| Junction capacitance per diode | GBU601 GBU602 GBU603 GBU604 | 1MHz, $V_R = 4.0\text{V}$ | C_J | 211 | - | pF |
| | GBU605 GBU606 GBU607 | | | 94 | - | pF |

Notes:

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

| ORDERING INFORMATION | | |
|--|----------------|----------------|
| ORDERING CODE ⁽¹⁾⁽²⁾ | PACKAGE | PACKING |
| GBU60x | GBU | 20 / Tube |
| GBU60xH | GBU | 20 / Tube |

Notes:

1. "x" defines voltage from 50V(GBU601) to 1000V(GBU607)
2. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

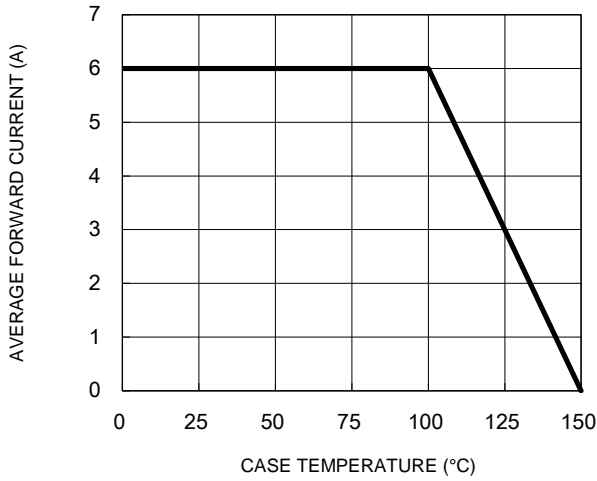


Fig.2 Typical Junction Capacitance

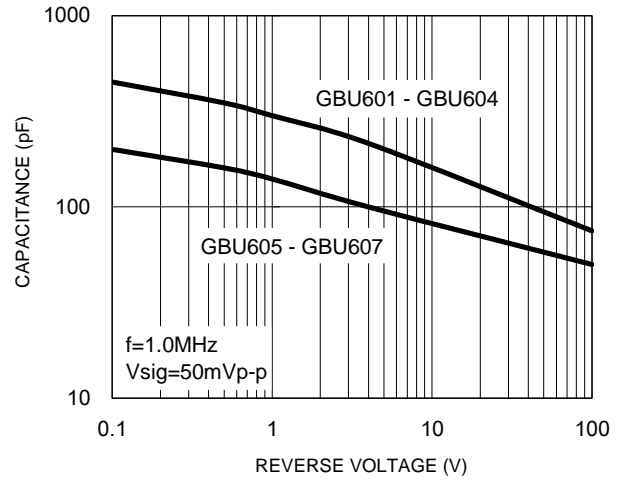


Fig.3 Typical Reverse Characteristics

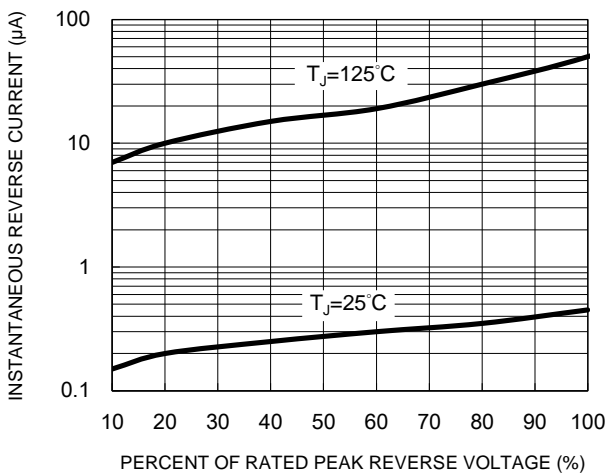


Fig.4 Typical Forward Characteristics

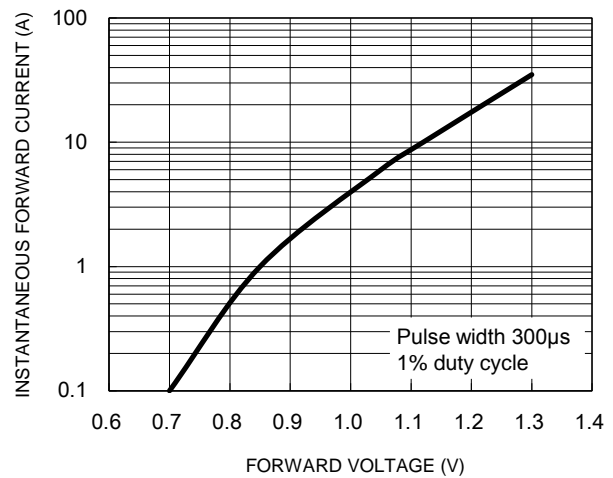
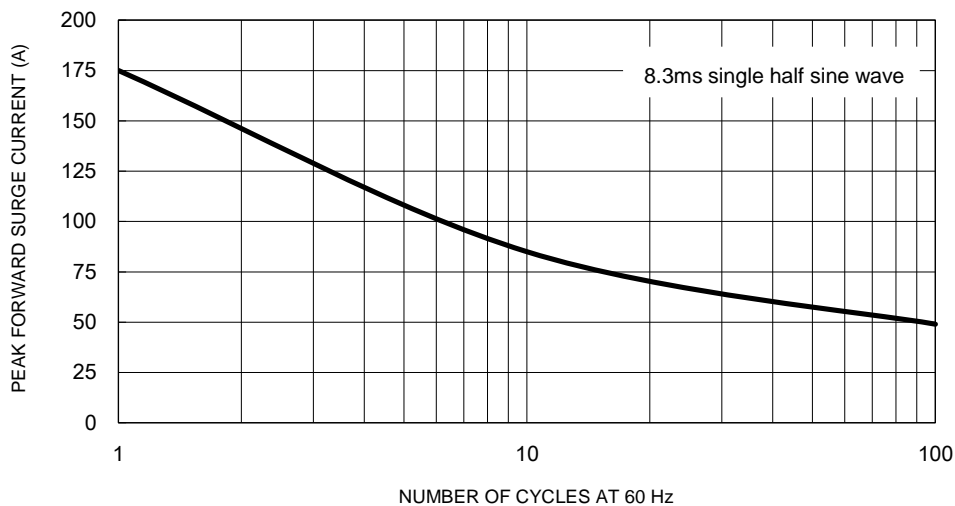
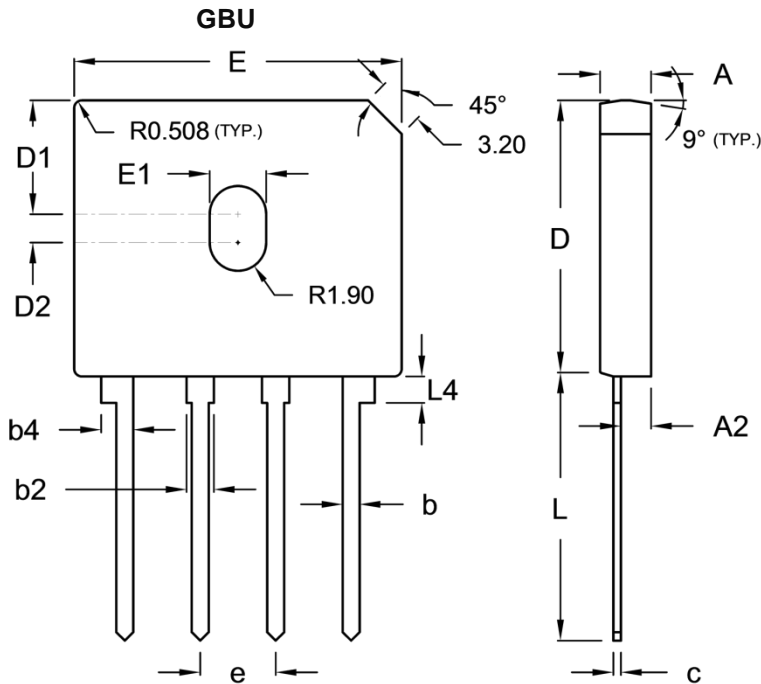


Fig.5 Maximum Non-Repetitive Forward Surge Current



PACKAGE OUTLINE DIMENSIONS



| DIM. | Unit (mm) | | Unit (inch) | |
|------|-----------|-------|-------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 3.30 | 3.56 | 0.130 | 0.140 |
| A2 | 1.90 | 2.16 | 0.075 | 0.085 |
| b | 1.02 | 1.27 | 0.040 | 0.050 |
| b2 | 1.65 | 2.03 | 0.065 | 0.080 |
| b4 | 2.16 | 2.54 | 0.085 | 0.100 |
| c | 0.46 | 0.56 | 0.018 | 0.022 |
| D | 18.30 | 18.80 | 0.720 | 0.740 |
| D1 | 7.40 | 7.90 | 0.291 | 0.311 |
| D2 | 1.65 | 2.16 | 0.065 | 0.085 |
| E | 21.80 | 22.30 | 0.858 | 0.878 |
| E1 | 3.50 | 4.10 | 0.138 | 0.161 |
| e | 4.83 | 5.33 | 0.190 | 0.210 |
| L | 17.50 | 18.00 | 0.689 | 0.709 |
| L4 | 1.52 | 2.03 | 0.060 | 0.080 |

MARKING DIAGRAM



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

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