

25A, 400V - 1000V Glass Passivated Single-Phase Bridge Rectifier

FEATURES

- Ideal for printed circuit board
- High surge current capability
- Low forward drop enhance the efficiency
- UL Recognized File # E-326243
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC

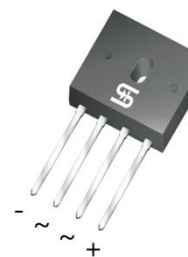
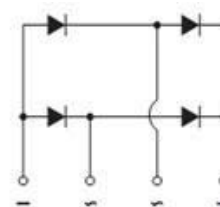
APPLICATIONS

- General purpose single phase bridge rectifier
- Switching mode power supply (SMPS)
- Adapters
- TV
- Monitor

MECHANICAL DATA

- Case: GBU
- Molding compound: UL flammability classification rating 94V-0
- Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Mounting torque: 0.56 Nm max
- Polarity: As marked
- Weight: 4g (approximately)

| KEY PARAMETERS | | |
|----------------|------------|------|
| PARAMETER | VALUE | UNIT |
| $I_{F(AV)}$ | 25 | A |
| V_{RRM} | 400 - 1000 | V |
| I_{FSM} | 300 | A |
| T_{JMAX} | 150 | °C |
| Package | GBU | |
| Configuration | Quad | |


GBU


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

| PARAMETER | SYMBOL | GBU2504 | GBU2505 | GBU2506 | GBU2507 | UNIT |
|---|--------------|-------------|---------|---------|---------|------------------|
| Marking code on the device | | GBU2504 | GBU2505 | GBU2506 | GBU2507 | |
| Repetitive peak reverse voltage | V_{RRM} | 400 | 600 | 800 | 1000 | V |
| Reverse voltage, total RMS value | $V_{R(RMS)}$ | 280 | 420 | 560 | 700 | V |
| Forward current | $I_{F(AV)}$ | 25 | | | | A |
| Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode | I_{FSM} | 300 | | | | A |
| I^2t value (of a surge on-state current) | I^2t | 373 | | | | A ² s |
| Junction temperature | T_J | -55 to +150 | | | | °C |
| Storage temperature | T_{STG} | -55 to +150 | | | | °C |

| THERMAL PERFORMANCE | | | |
|--|-----------------|--------------|-------------|
| PARAMETER | SYMBOL | LIMIT | UNIT |
| Junction-to-lead thermal resistance | $R_{\theta JL}$ | 6 | °C/W |
| Junction-to-ambient thermal resistance | $R_{\theta JA}$ | 22 | °C/W |
| Junction-to-case thermal resistance | $R_{\theta JC}$ | 7 | °C/W |

Thermal Performance Note: Mounted on Heat sink Size of 4"x6"x0.25" Al -Plate.

| ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | | | |
|---|---|---------------|------------|------------|---------------|
| PARAMETER | CONDITIONS | SYMBOL | TYP | MAX | UNIT |
| Forward voltage per diode ⁽¹⁾ | $I_F = 12.5\text{A}, T_J = 25^\circ\text{C}$ | V_F | 0.99 | 1.10 | V |
| | $I_F = 25\text{A}, T_J = 25^\circ\text{C}$ | | 1.08 | 1.20 | V |
| | $I_F = 12.5\text{A}, T_J = 125^\circ\text{C}$ | | 0.89 | 1.00 | V |
| | $I_F = 25\text{A}, T_J = 125^\circ\text{C}$ | | 1.03 | 1.15 | V |
| Reverse current @ rated V_R per diode ⁽²⁾ | $T_J = 25^\circ\text{C}$ | I_R | - | 10 | μA |
| | $T_J = 125^\circ\text{C}$ | | - | 500 | μA |
| Junction capacitance | 1 MHz, $V_R = 4.0\text{V}$ | C_J | 100 | - | pF |

Note:

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

| ORDERING INFORMATION | | | |
|-----------------------------|---------------------|----------------|----------------|
| PART NO. | PACKING CODE | PACKAGE | PACKING |
| GBU250x (Note 1) | D2 | GBU | 20 / Tube |

Note:

1. "x" defines voltage from 400V (GBU2504) to 1000V (GBU2507)

| EXAMPLE | | | |
|--------------------|-----------------|---------------------|--------------------|
| EXAMPLE P/N | PART NO. | PACKING CODE | DESCRIPTION |
| GBU2504 D2 | GBU2504 | D2 | |

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

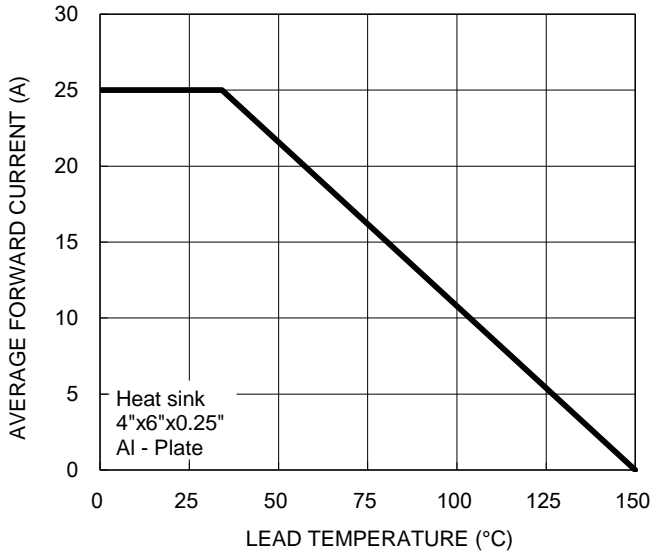


Fig.2 Typical Junction Capacitance

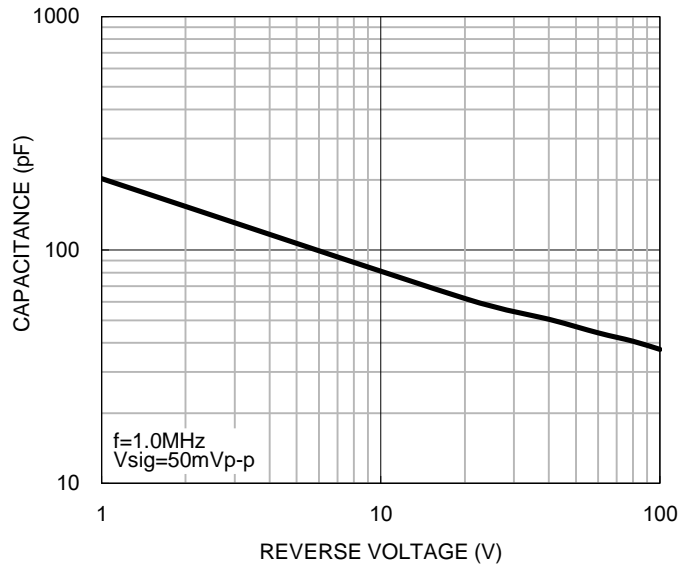


Fig.3 Typical Reverse Characteristics

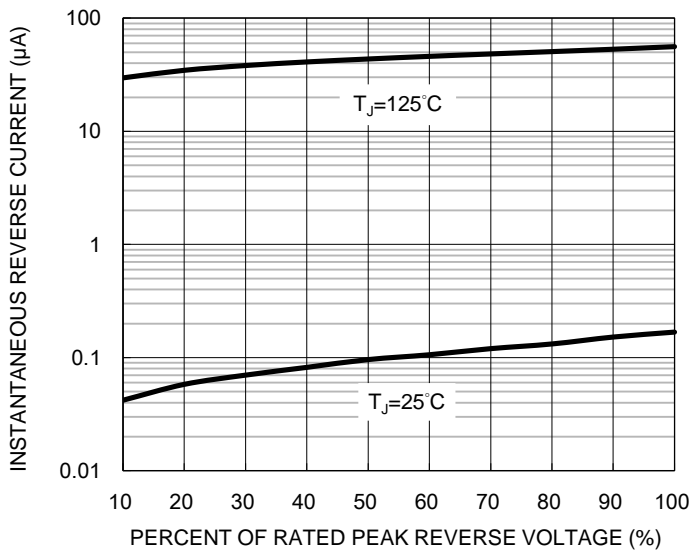
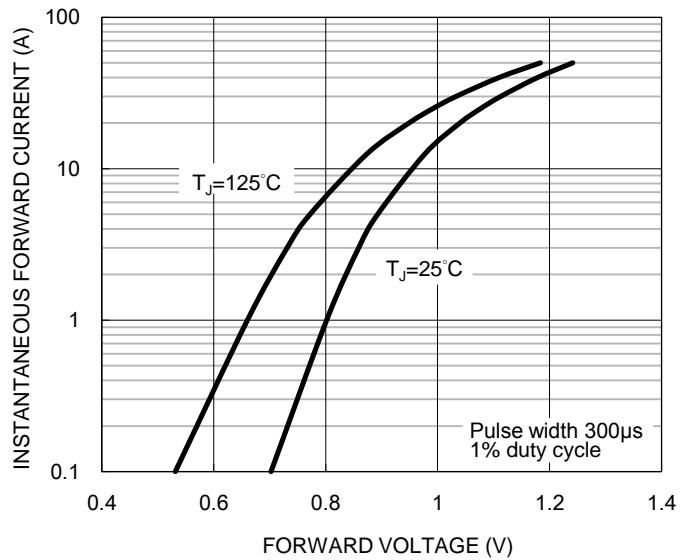
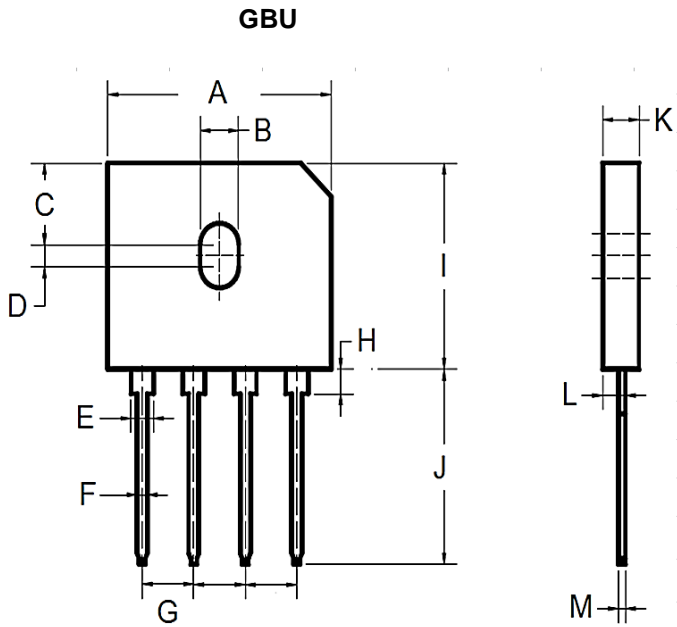


Fig.4 Typical Forward Characteristics



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 | 2.06 | 2.54 | 0.081 | 0.100 |
| F | 1.02 | 1.27 | 0.040 | 0.050 |
| G | 4.83 | 5.33 | 0.190 | 0.210 |
| H | 1.91 | 2.54 | 0.075 | 0.100 |
| I | 18.30 | 18.80 | 0.720 | 0.740 |
| J | 17.50 | 18.00 | 0.689 | 0.709 |
| K | 3.30 | 3.56 | 0.130 | 0.140 |
| L | 2.40 | 2.66 | 0.094 | 0.105 |
| M | 0.46 | 0.56 | 0.018 | 0.022 |

MARKING DIAGRAM



P/N = Marking code
 YWWF = Date Code
 F = Factory Code

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