

10A, 50V - 1000V Glass Passivated Single-Phase Bridge Rectifier

FEATURES

- Ideal for printed circuit board
- High case dielectric strength of 1500 V_{RMS}
- High surge current capability
- Typical I_R 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

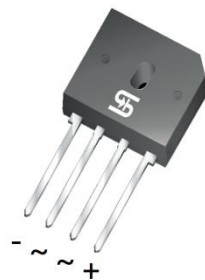
APPLICATIONS

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

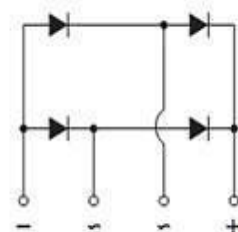
MECHANICAL DATA

- 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 _{F(AV)} | 10 | A |
| V _{RRM} | 50 – 1000 | V |
| I _{FSM} | 220 | A |
| T _{J MAX} | 150 | °C |
| Package | GBU | |
| Configuration | Quad | |



GBU



| ABSOLUTE MAXIMUM RATINGS (T _A = 25°C unless otherwise noted) | | | | | | | | | |
|------------------------------------------------------------------------------------------------|---------------------|--------------|----------|----------|----------|----------|----------|----------|------------------|
| PARAMETER | SYMBOL | GBU 1001 | GBU 1002 | GBU 1003 | GBU 1004 | GBU 1005 | GBU 1006 | GBU 1007 | UNIT |
| Marking code on the device | | GBU 1001 | GBU 1002 | GBU 1003 | GBU 1004 | GBU 1005 | GBU 1006 | GBU 1007 | |
| 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 |
| Maximum DC blocking voltage | V _{DC} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Forward current | I _{F(AV)} | 10 | | | | | | | A |
| Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode) | I _{FSM} | 220 | | | | | | | A |
| Rating of fusing (t<8.3ms) | I ² t | 200 | | | | | | | 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-ambient thermal resistance | $R_{\theta JA}$ | 21 | $^{\circ}\text{C/W}$ |
| Junction-to-case thermal resistance | $R_{\theta JC}$ | 2 | $^{\circ}\text{C/W}$ |

| ELECTRICAL SPECIFICATIONS ($T_A = 25^{\circ}\text{C}$ unless otherwise noted) | | | | | | |
|---------------------------------------------------------------------------------------|------------------------------------------|----------------------------------------------|---------------|------------|------------|---------------|
| PARAMETER | | CONDITIONS | SYMBOL | TYP | MAX | UNIT |
| Forward voltage per diode ⁽¹⁾ | | $I_F = 5\text{A}, T_J = 25^{\circ}\text{C}$ | V_F | - | 1.0 | V |
| | | $I_F = 10\text{A}, T_J = 25^{\circ}\text{C}$ | | - | 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 | GBU1001 GBU1002 GBU1003 GBU1004 | 1 MHz, $V_R = 4.0\text{V}$ | C_J | 211 | - | pF |
| | GBU1005 GBU1006 GBU1007 | | | 94 | - | pF |

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 |
| GBU100x (Note 1) | H | C2 | G | GBU | 20 / Tube |
| | | D2 | | | 20 / Tube |
| | | X0 | | | Forming |

Note:

- "x" defines voltage from 50V (GBU1001) to 1000V (GBU1007)
- *: Optional available

| EXAMPLE P/N | | | | | |
|--------------------|-----------------|------------------------|---------------------|----------------------------|--------------------------------------|
| EXAMPLE P/N | PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION |
| GBU1006HC2G | GBU1006 | H | C2 | G | AEC-Q101 qualified Green compound |

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

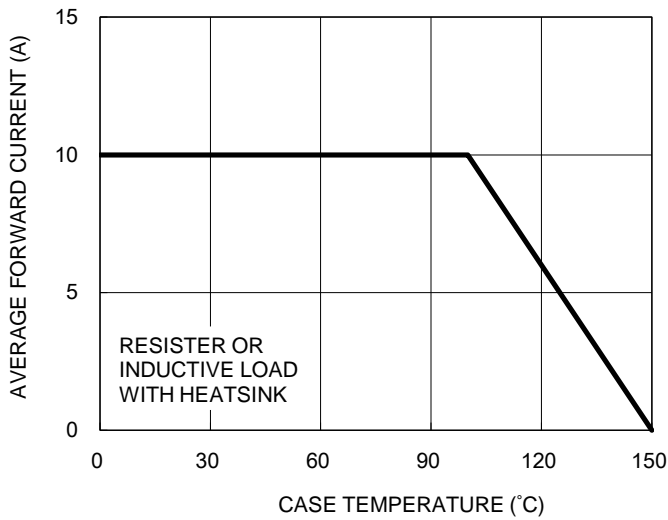


Fig.2 Typical Junction Capacitance

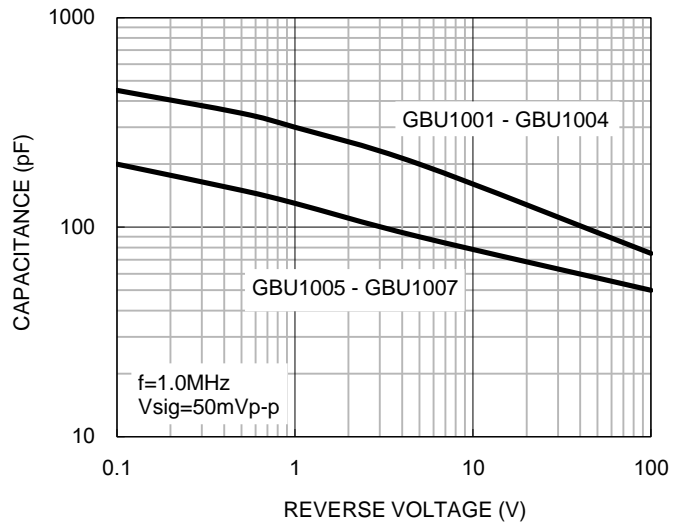
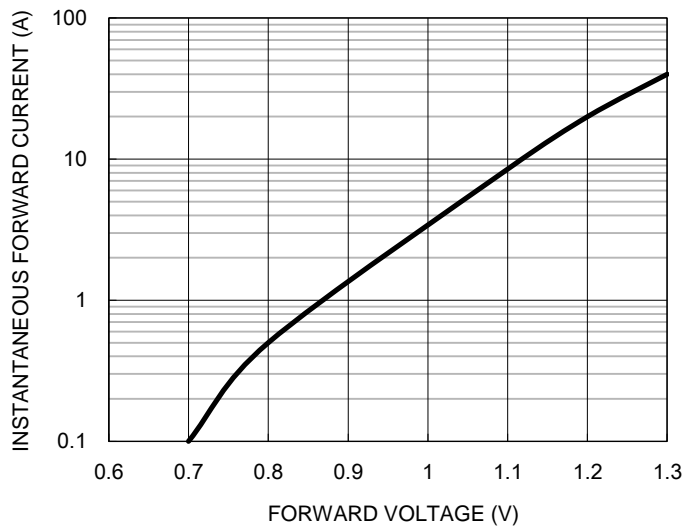


Fig.3 Typical Reverse Characteristics



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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- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



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