

4A, 50V - 1000V Glass Passivated Single-Phase Bridge Rectifiers

FEATURES

- Ideal for printed circuit board
- High case dielectric strength of 1500 VRMS
- High surge current capability
- 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



GBU

MECHANICAL DATA

Case: GBU

Molding compound, UL flammability classification rating 94V-0

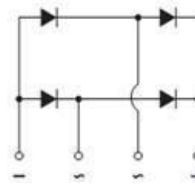
Part no. with suffix "H" means AEC-Q101 qualified

Packing code with suffix "G" means green compound (halogen-free)

Terminal: Matte tin plated leads, solderable per JESD22-B102

Polarity: As marked

Weight: 4 g (approximately)



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

| PARAMETER | SYMBOL | GBU 401 | GBU 402 | GBU 403 | GBU 404 | GBU 405 | GBU 406 | GBU 407 | UNIT | |
|--|------------------------|------------------|---------|---------|---------|---------|---------|---------|------------------|----|
| Maximum repetitive peak reverse voltage | V _{RRM} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V | |
| Maximum RMS voltage | V _{RMS} | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V | |
| Maximum DC blocking voltage | V _{DC} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V | |
| Maximum average forward rectified current | I _{F(AV)} | 4 | | | | | | | A | |
| Peak forward surge current, 8.3 ms single half sine-wave | T _J = 25°C | I _{FSM} | | | | | | | 150 | A |
| | T _J = 125°C | | | | | | | | 80 | |
| Peak forward surge current, 1.0 ms single half sine-wave | T _J = 25°C | I _{FSM} | | | | | | | 280 | A |
| | T _J = 125°C | | | | | | | | 260 | |
| Rating of fusing (t < 8.3ms) | I ² t | 93 | | | | | | | A ² s | |
| Maximum Instantaneous Forward Voltage (Note 1) I _F = 2 A I _F = 4 A | V _F | | | | | | | | 1.0 | V |
| | | | | | | | | | 1.1 | |
| Maximum reverse current @ rated V _R | I _R | | | | | | | | 5 | μA |
| | | | | | | | | | 500 | |
| Typical junction capacitance per leg (Note 2) | C _J | 100 | | | | 45 | | | pF | |
| Typical thermal resistance | R _{θJC} | 4 | | | | | | | °C/W | |
| | R _{θJA} | 20 | | | | | | | | |
| Operating junction temperature range | T _J | - 55 to +150 | | | | | | | °C | |
| Storage temperature range | T _{STG} | - 55 to +150 | | | | | | | °C | |

Note 1: Pulse test with PW=300μs, 1% duty cycle

Note 2: Measured at 1MHz and applied Reverse bias of 4.0V DC

| ORDERING INFORMATION | | | | | |
|----------------------|-----------------|--------------|-------------------------|---------|-----------|
| PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX (*) | PACKAGE | PACKING |
| GBU40x (Note 1) | H | C2 | G | GBU | 20 / Tube |
| | | D2 | | | 20 / Tube |
| | | X0 | | | Forming |

Note 1: "x" defines voltage from 50V (GBU401) to 1000V (GBU407)

*: Optional available

| EXAMPLE | | | | | |
|---------------|----------|-----------------|--------------|---------------------|--------------------------------------|
| PREFERRED P/N | PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION |
| GBU406HC2G | GBU406 | H | C2 | G | AEC-Q101 qualified Green compound |

RATINGS AND CHARACTERISTICS CURVES

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

FIG. 1 FORWARD CURRENT DERATING CURVE

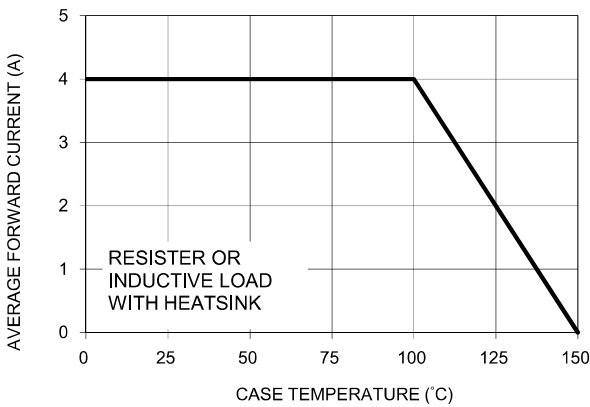


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

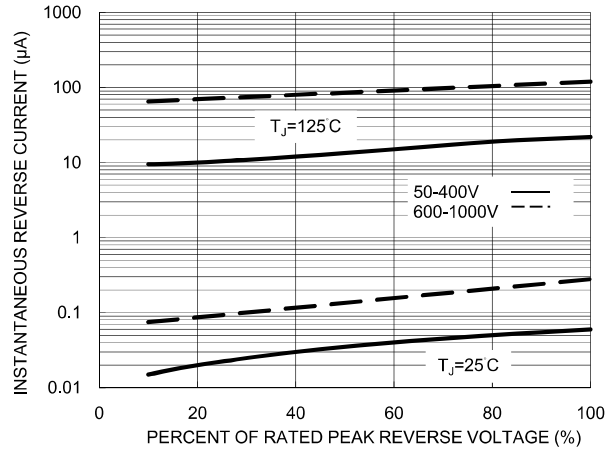


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

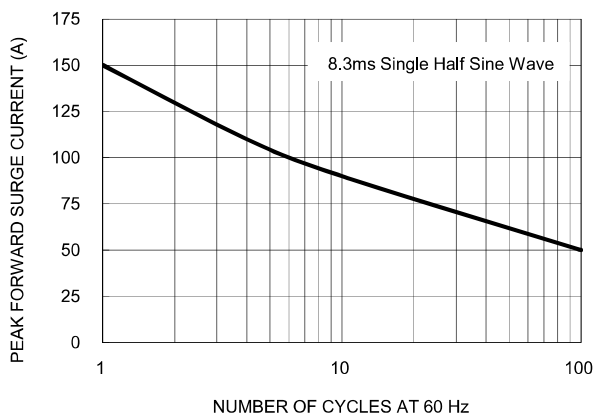


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

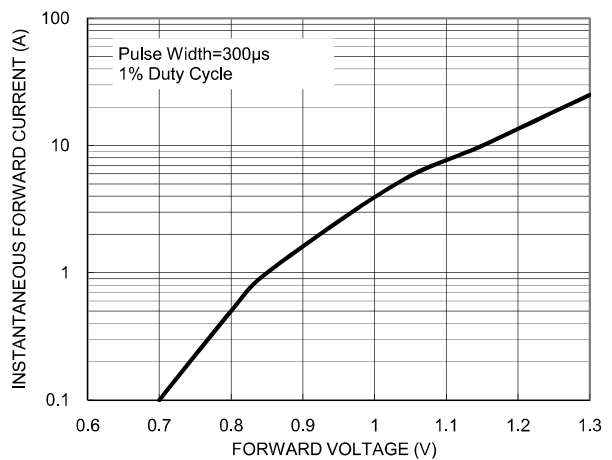
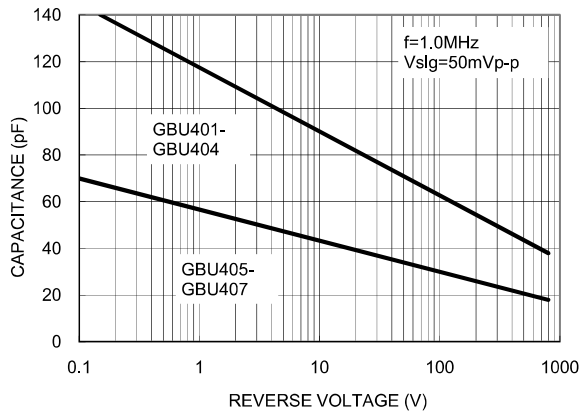
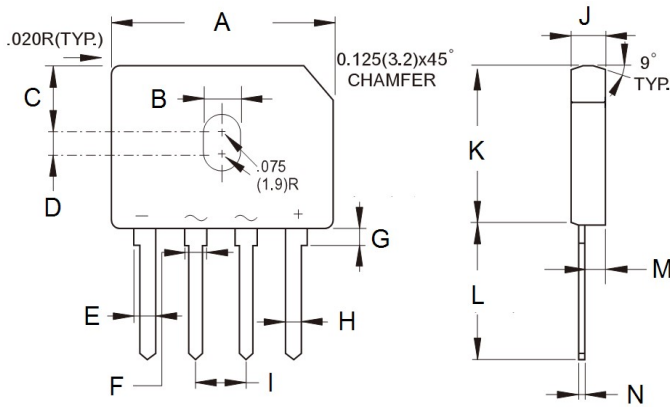


FIG. 5 TYPICAL JUNCTION CAPACITANCE



PACKAGE OUTLINE DIMENSIONS

GBU



| 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 = Specific Device Code
- G = Green Compound
- YW = Date Code
- F = Factory Code

Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.