# 6A, 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

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

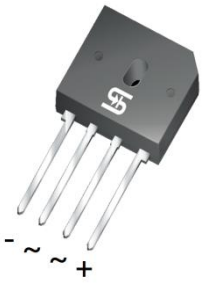
## APPLICATIONS

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

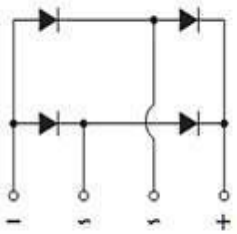
## MECHANICAL DATA

- 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
- Mounting torque: 0.56 Nm max
- Weight: 4 g (approximately)

Pb-Free RoHS COMPLIANT




GBU




## ABSOLUTE MAXIMUM RATINGS ($T_A$ = 25°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 |
| Maximum DC blocking voltage | $V_{DC}$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Forward current | $I_{F(AV)}$ | 6 | | | | | | | A |
| Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode) | $I_{FSM}$ | 175 | | | | | | | A |
| Rating of fusing ( t<8.3ms) | $I^2t$ | 127 | | | | | | | $A^2s$ |
| 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 | °C/W |
| Junction-to-case thermal resistance | $R_{\Theta JC}$ | 2 | °C/W |

## ELECTRICAL SPECIFICATIONS ($T_A$ = 25°C unless otherwise noted)

| PARAMETER | | CONDITIONS | SYMBOL | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| Forward voltage per diode (1) | | $I_F$ =3A, $T_J$=25°C | $V_F$ | - | 1.0 | V |
| | | $I_F$ =6A, $T_J$=25°C | | - | 1.1 | V |
| Reverse current @ rated $V_R$ per diode (2) | | $T_J$ = 25°C | $I_R$ | - | 5 | μA |
| | | $T_J$ =125°C | | - | 500 | μA |
| Junction capacitance | GBU601<br>GBU602<br>GBU603<br>GBU604 | 1 MHz, $V_R$=4.0V | $C_J$ | 211 | - | pF |
| | GBU605<br>GBU606<br>GBU607 | | | 94 | - | pF |

**Notes:**

1. Pulse test with PW=0.3 ms
2. Pulse test with PW=30 ms

## ORDERING INFORMATION

| PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX(*) | PACKAGE | PACKING |
|---|---|---|---|---|---|
| GBU60x (Note 1) | H | C2 | G | GBU | 20 / Tube |
| | | D2 | | | 20 / Tube |
| | | X0 | | | Forming |

**Note:**

1. "x" defines voltage from 50V (GBU601) to 1000V (GBU607)

*: Optional available

## EXAMPLE P/N

| EXAMPLE P/N | PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION |
|---|---|---|---|---|---|
| GBU606HC2G | GBU606 | H | C2 | G | AEC-Q101 qualified<br>Green compound |

## CHARACTERISTICS CURVES

($T_A$ = 25°C unless otherwise noted)

**Fig.1 Forward Current Derating Curve**

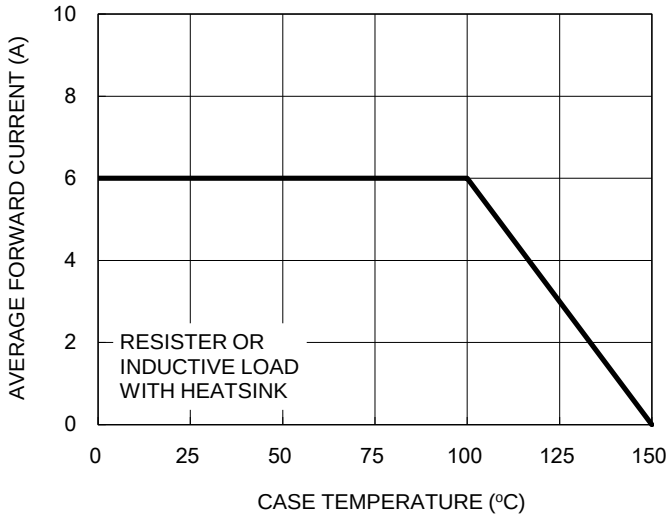



**Fig.2 Typical Junction Capacitance**

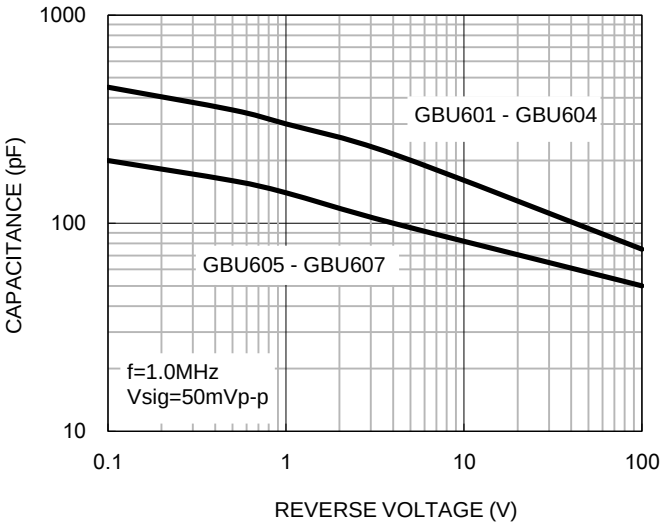



**Fig.3 Typical Reverse Characteristics**

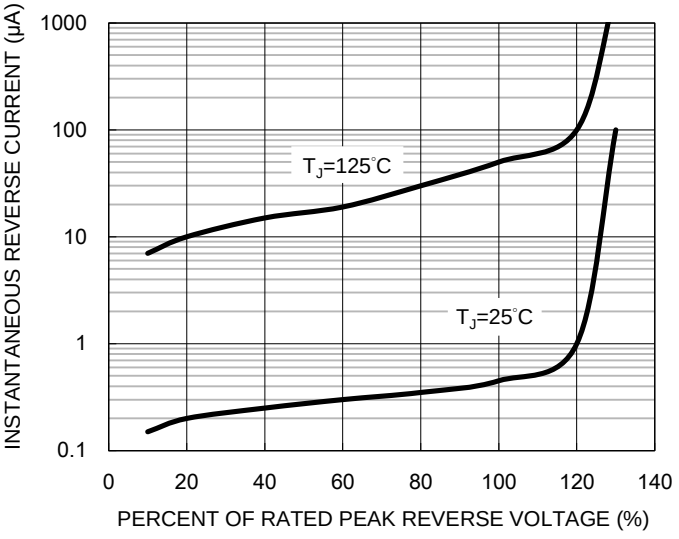
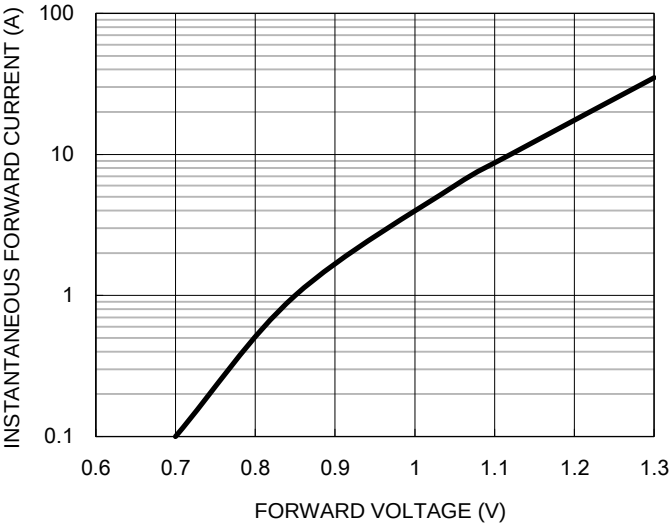


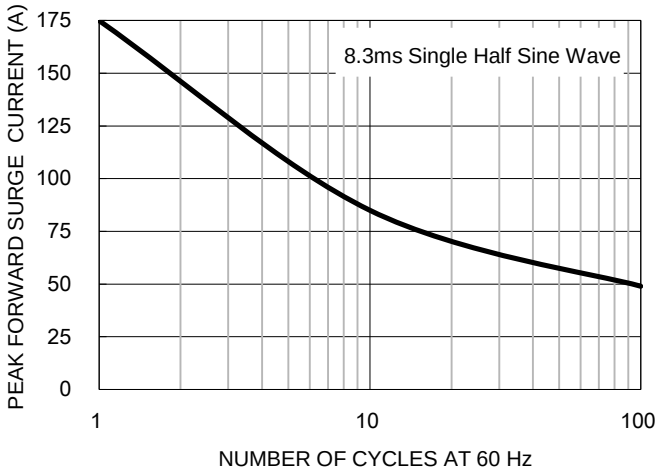

**Fig.4 Typical Forward Characteristics**



## CHARACTERISTICS CURVES

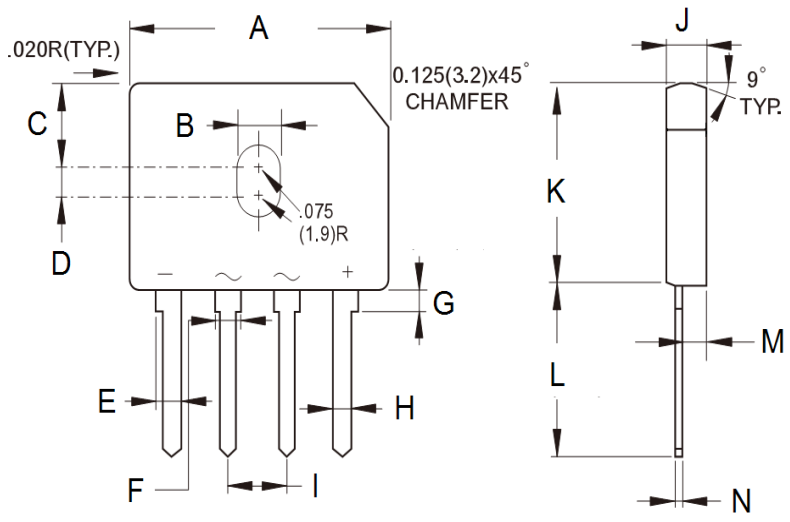
($T_A$ = 25°C unless otherwise noted)

**Fig.5 Maximum Non-repetitive Forward Surge Current**



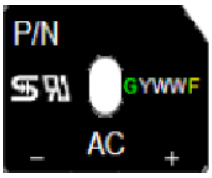
## PACKAGE OUTLINE DIMENSIONS

**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 = Marking Code
G = Green Compound
YWW = Date Code
F = Factory Code

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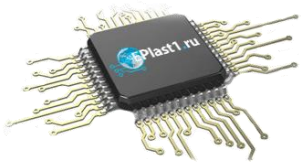
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.




**Как с нами связаться**

**Телефон:** 8 (812) 309 58 32 (многоканальный)
**Факс:** 8 (812) 320-02-42
**Электронная почта:** org@eplast1.ru
**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.