

# GBU4A - GBU4M

## Bridge Rectifiers

### Features

- Glass–Passivated Junction
- Surge Overload Rating: 150 A Peak
- Reliable Low–Cost Construction Utilizing Molded Plastic Technique
- Ideal for Printed Circuit Board
- UL Certified: UL #E258596

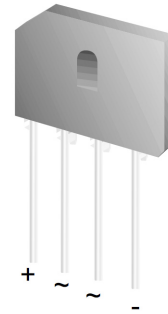
### PACKAGE MARKING AND ORDERING INFORMATION

| Part Number | Marking | Package | Packing Method |
|-------------|---------|---------|----------------|
| GBU4A       | GBU4A   | GBU 4L  | Rail           |
| GBU4B       | GBU4B   |         |                |
| GBU4D       | GBU4D   |         |                |
| GBU4G       | GBU4G   |         |                |
| GBU4J       | GBU4J   |         |                |
| GBU4K       | GBU4K   |         |                |
| GBU4M       | GBU4M   |         |                |



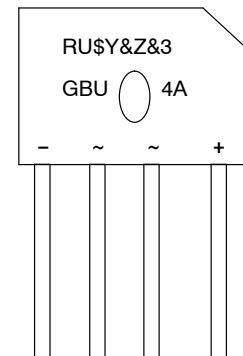
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SIP4  
CASE 127EL

### MARKING DIAGRAM



- |       |                         |
|-------|-------------------------|
| RU    | = UL Marking            |
| \$Y   | = ON Semiconductor Logo |
| &Z    | = Assembly Plant Code   |
| &3    | = Numeric Date Code     |
| GBU4A | = Specific Device Code  |

# GBU4A – GBU4M

## ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted) (Note 1)

| Symbol      | Parameter   | Value                     |     |     |     |     |     |      | Units            |   |
|-------------|---|---------------------------|-----|-----|-----|-----|-----|------|------------------|---|
|             |   | 4A                        | 4B  | 4D  | 4G  | 4J  | 4K  | 4M   |                  |   |
| $V_{RRM}$   | Maximum Repetitive Reverse Voltage  | 50                        | 100 | 200 | 400 | 600 | 800 | 1000 | V                |   |
| $V_{RMS}$   | Maximum RMS Bridge Input Voltage  | 35                        | 70  | 140 | 280 | 420 | 560 | 700  | V                |   |
| $V_R$       | DC Reverse Voltage (Rated $V_R$ )   | 50                        | 100 | 200 | 400 | 600 | 800 | 1000 | V                |   |
| $I_{F(AV)}$ | Average Rectified Forward Current   | $T_A = 100^\circ\text{C}$ |     |     |     |     |     |      | 4.0              | A |
|             |   | $T_A = 40^\circ\text{C}$  |     |     |     |     |     |      | 3.0              | A |
| $I_{FSM}$   | Non-Repetitive Peak Forward Surge Current<br>8.3 ms Single Half-Sine-Wave | 150                       |     |     |     |     |     |      | A                |   |
| $T_{STG}$   | Storage Temperature Range   | -55 to +150               |     |     |     |     |     |      | $^\circ\text{C}$ |   |
| $T_J$       | Operating Junction Temperature  | -55 to +150               |     |     |     |     |     |      | $^\circ\text{C}$ |   |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

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

| Symbol          | Parameter  | Value | Units                     |
|-----------------|--|-------|---------------------------|
| $P_D$           | Power Dissipation  | 8     | W                         |
| $R_{\theta JA}$ | Thermal Resistance per Leg, Junction to Ambient (Note 2) | 19    | $^\circ\text{C}/\text{W}$ |

2. Device mounted on PCB with  $0.5 \times 0.5$  inch ( $12 \times 12$  mm)

## ELECTRICAL CHARACTERISTICS ( $T_J = 25^\circ\text{C}$ unless otherwise noted)

| Symbol | Parameter                                   | Value                     | Units                |
|--------|---|---------------------------|----------------------|
| $V_F$  | Forward Voltage, per Element at 4.0 A       | 1.0                       | V                    |
| $I_R$  | Reverse Current, per Element at Rated $V_R$ | $T_A = 25^\circ\text{C}$  | 5.0 $\mu\text{A}$    |
|        |   | $T_A = 125^\circ\text{C}$ | 500 $\mu\text{A}$    |
| $I^2t$ | $I^2t$ Rating for Fusing                    | 93                        | $\text{A}^2\text{s}$ |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

# GBU4A – GBU4M

## TYPICAL PERFORMANCE CHARACTERISTICS

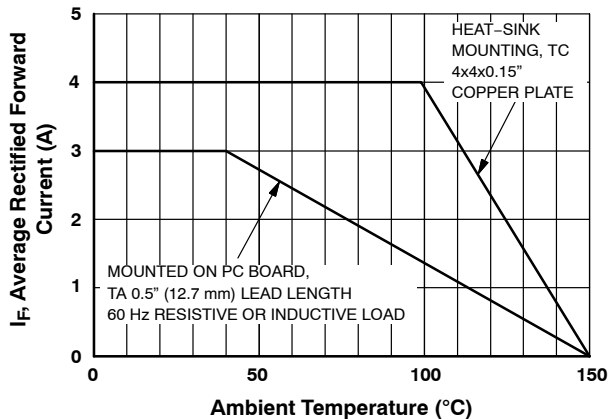


Figure 1. Forward Current Derating Curve

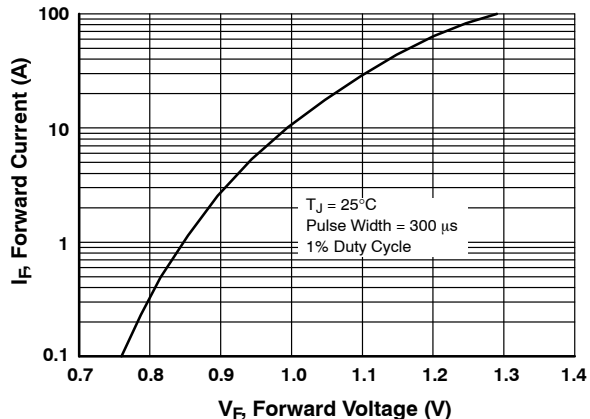


Figure 2. Forward Voltage Characteristics

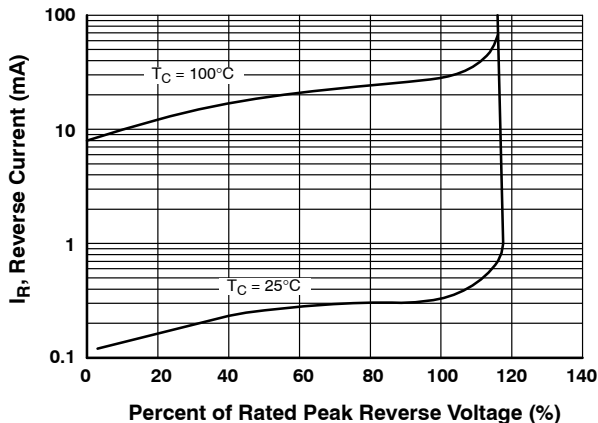


Figure 3. Reverse Current vs. Reverse Voltage

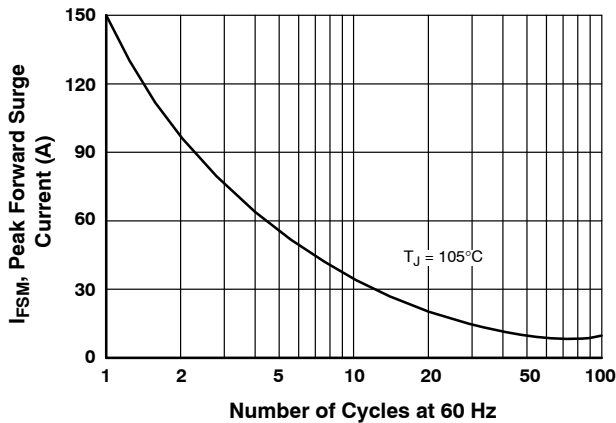


Figure 4. Non-Repetitive Surge Current

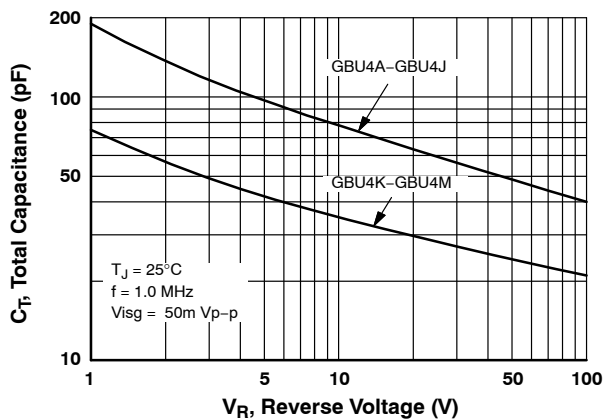


Figure 5. Total Capacitance

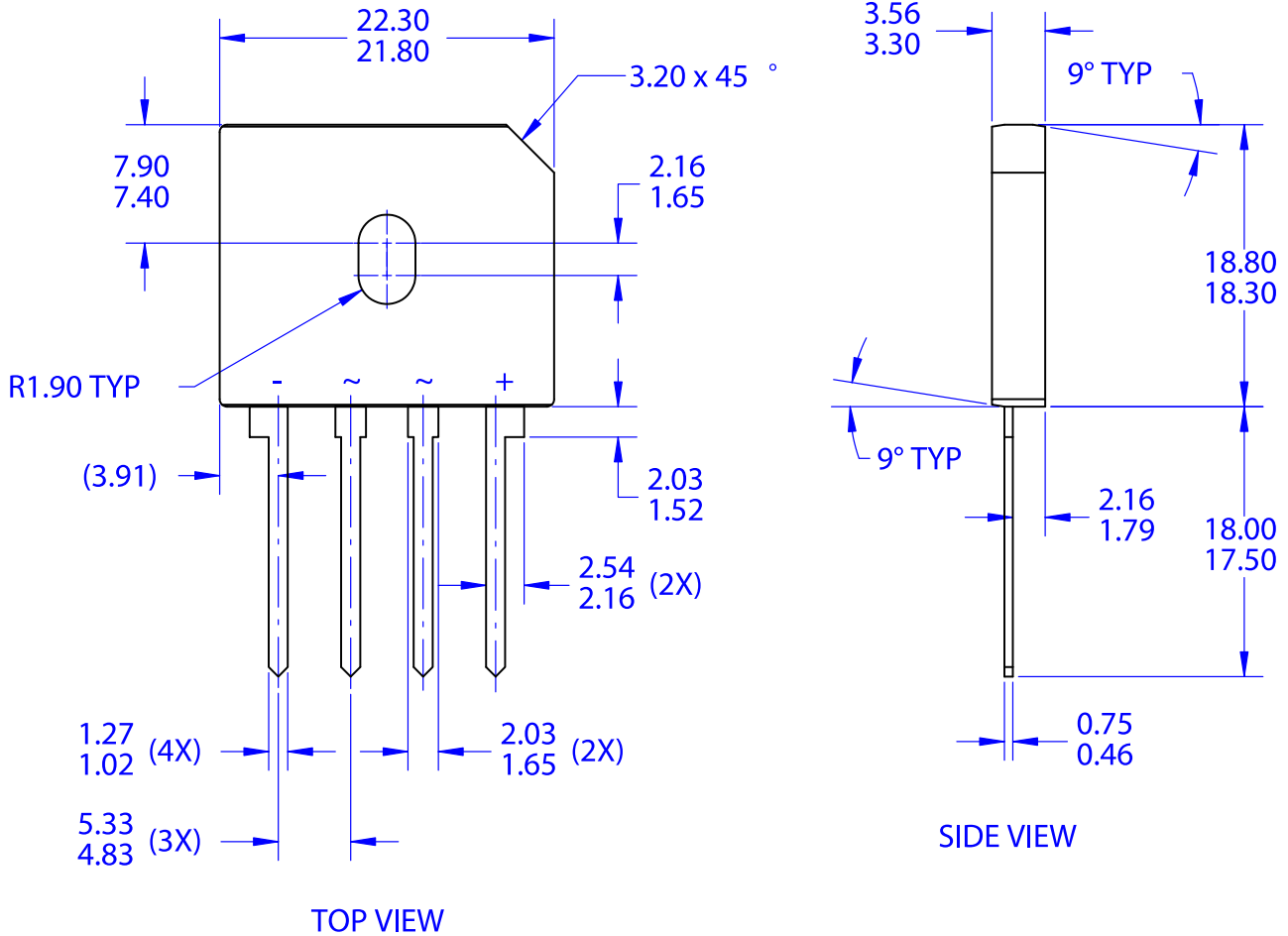
**MECHANICAL CASE OUTLINE**  
**PACKAGE DIMENSIONS**

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SIP4 22.05x18.55  
CASE 127EL  
ISSUE O

DATE 31 DEC 2016



**NOTES:**

- A. NO INDUSTRY STANDARD APPLIES TO THIS PACKAGE
- B. ALL DIMENSIONS ARE IN MILLIMETERS
- C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.
- D. DIMENSIONS AND TOLERANCES AS PER ASME Y14.5-2009

|                         |                         |  |
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