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# 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



## Ordering Informations

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

## Absolute Maximum Ratings<sup>(1)</sup>

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

| 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                                         | $T_A = 100^\circ\text{C}$ |     |     |     |     |     |      | A                |
|             |                                                                           | $T_A = 40^\circ\text{C}$  |     |     |     |     |     |      | 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               |     |     |     |     |     |      | $^\circ\text{C}$ |

### Note:

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

## Thermal Characteristics

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

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

**Note:**

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

## Electrical Characteristics

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

| Symbol           | Parameter                                            |                        | Value | Units            |
|------------------|------------------------------------------------------|------------------------|-------|------------------|
| V <sub>F</sub>   | Forward Voltage, per Element at 4.0 A                |                        | 1.0   | V                |
| I <sub>R</sub>   | Reverse Current, per Element at Rated V <sub>R</sub> | T <sub>A</sub> = 25°C  | 5.0   | μA               |
|                  |                                                      | T <sub>A</sub> = 125°C | 500   | μA               |
| I <sup>2</sup> t | I <sup>2</sup> t Rating for Fusing                   | t < 8.35 ms            | 93    | A <sup>2</sup> s |

## Typical Performance Characteristics

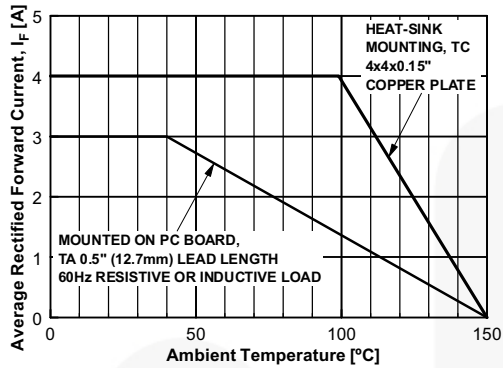


Figure 1. Forward Current Derating Curve

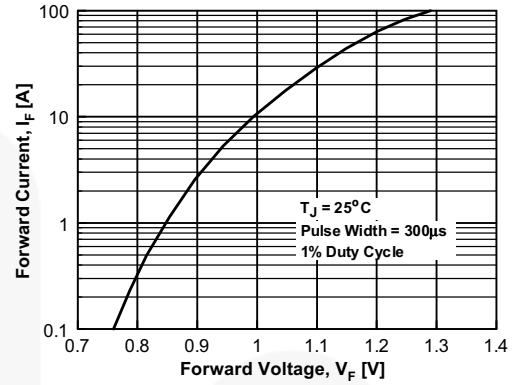


Figure 2. Forward Voltage Characteristics

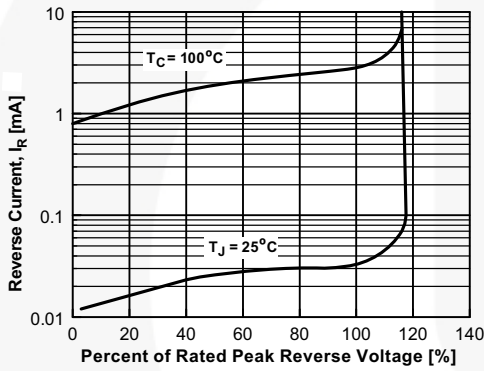


Figure 3. Reverse Current vs. Reverse Voltage

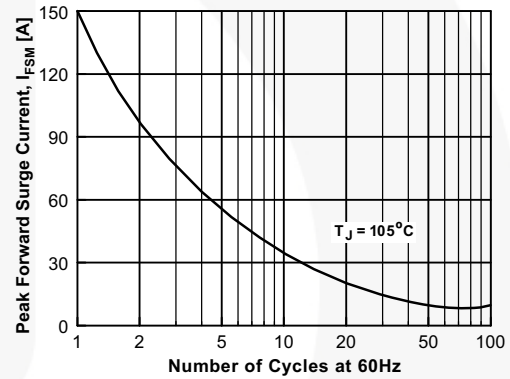


Figure 4. Non-Repetitive Surge Current

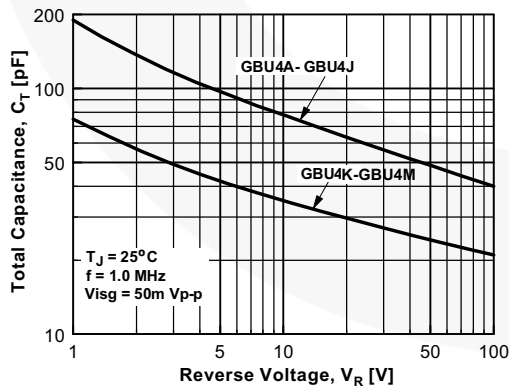
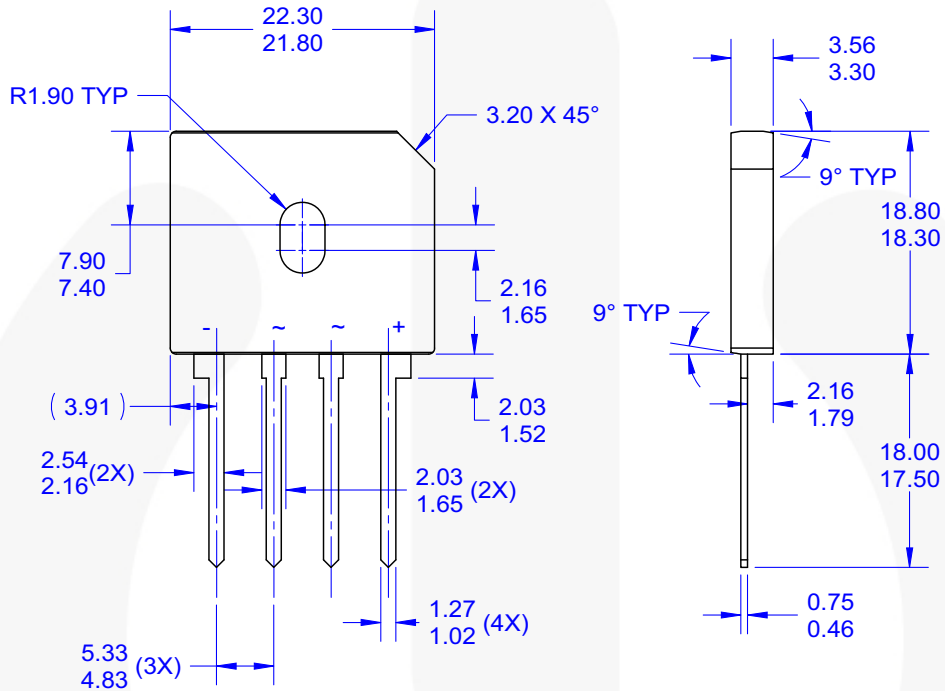


Figure 5. Total Capacitance

## Physical Dimension

## GBU-4L



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- A. THIS PACKAGE DOES NOT CONFORM TO ANY STANDARDS.
- B. ALL DIMENSIONS ARE IN MILLIMETERS.
- C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.
- E. DIMENSION AND TOLERANCE AS PER ASME Y14.5-1994.
- F. DRAWING FILE NAME: GBU04AREV1

Figure 6. 4-LEAD, GBU, THROUGH-HOLE, MOLDED PACKAGE (ACTIVE)

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| FETBench™                                                                         | OPTOPLANAR®                                    | SyncFET™                                                                          | XS™                                                                                 |
| FPS™                                                                              |                                                |                                                                                   |                                                                                     |

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