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# GBU6A - GBU6M Bridge Rectifiers

## Features

- Glass-Passivated Junction
- Surge Overload Rating: 175 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
GBU6A	GBU6A	GBU 4L	Rail
GBU6B	GBU6B	GBU 4L	Rail
GBU6D	GBU6D	GBU 4L	Rail
GBU6G	GBU6G	GBU 4L	Rail
GBU6J	GBU6J	GBU 4L	Rail
GBU6K	GBU6K	GBU 4L	Rail
GBU6M	GBU6M	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
		6A	6B	6D	6G	6J	6K	6M	
$V_{RRM}$	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 $T_A = 100^\circ\text{C}$	6.0							A
$I_{FSM}$	Non-Repetitive Peak Forward Surge Current 8.3 ms Single Half-Sine-Wave	175							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	12	W
$R_{\theta JA}$	Thermal Resistance per Leg, Junction to Ambient <sup>(2)</sup>	18.6	$^\circ\text{C/W}$
$R_{\theta JL}$	Thermal Resistance per Leg, Junction to Lead <sup>(3)</sup>	3.1	$^\circ\text{C/W}$

### Notes:

- Device mounted on PCB with 0.5 x 0.5 inch (12 x 12 mm).
- Device mounted on Al plate with 2.6 x 1.4 x 0.06 inch (6.5 x 3.5 x 0.15 cm).

## Electrical Characteristics

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

Symbol	Parameter		Value	Units
$V_F$	Forward Voltage, per Element	6.0 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	$t < 8.35 \text{ ms}$	127	$\text{A}^2\text{s}$

## Typical Performance Characteristics

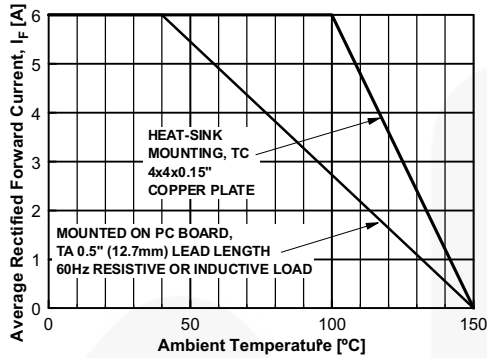


Figure 1. Forward Current Derating Curve

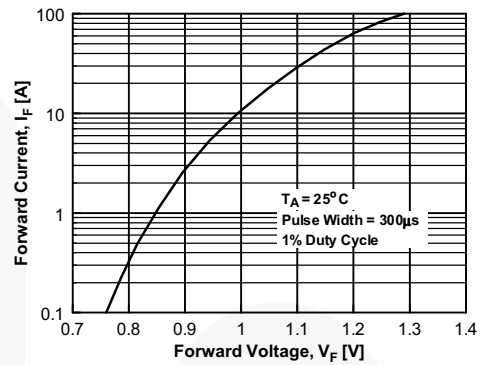


Figure 2. Forward Voltage Characteristics

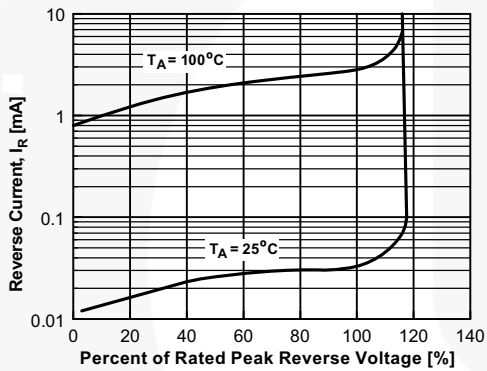


Figure 3. Reverse Current vs. Reverse Voltage

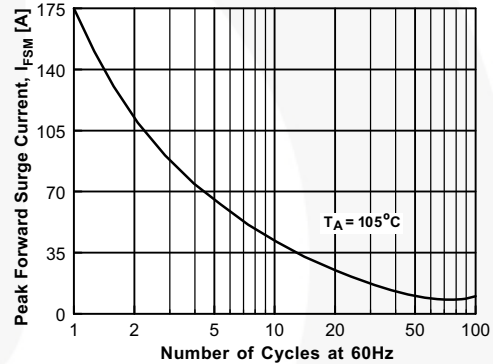


Figure 4. Non-Repetitive Surge Current

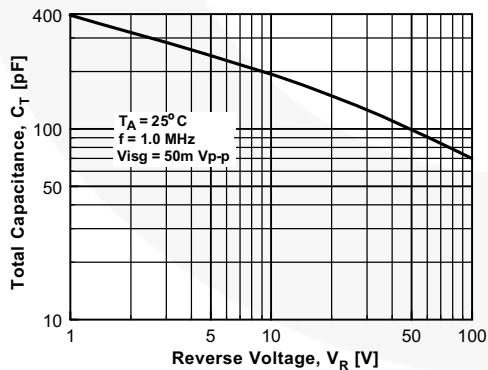
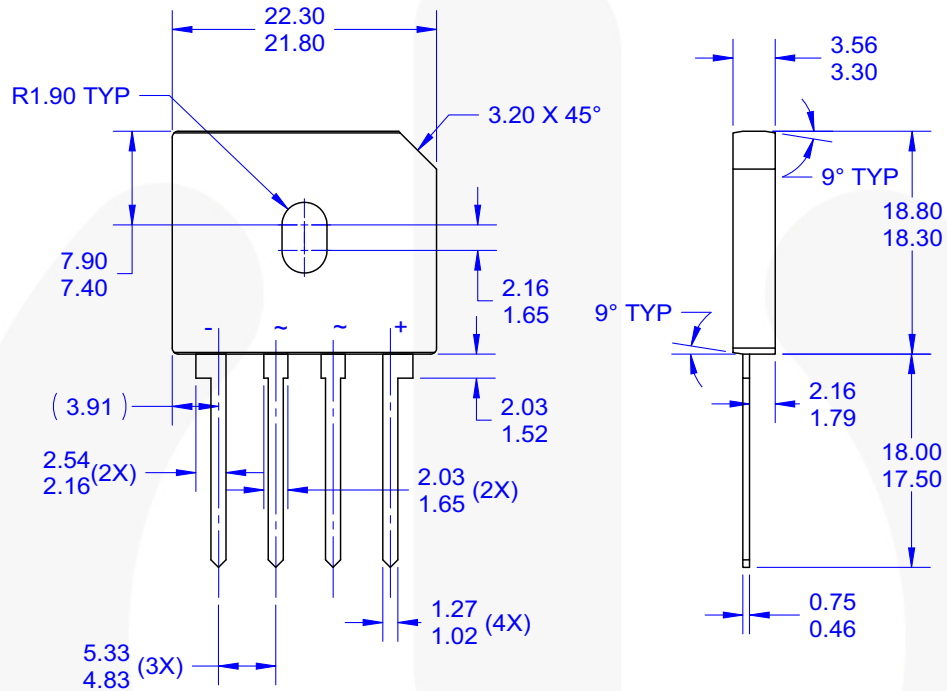


Figure 5. Total Capacitance

## Physical Dimension

## GBU-4L



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- 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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No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
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