

# ANTREX Electronics

## Electronic Components Sourcing Information

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### Product Reference Information

|                      |                                                |
|----------------------|------------------------------------------------|
| <b>Part Number:</b>  | GBU4A-M3/51                                    |
| <b>Manufacturer:</b> | Vishay General Semiconductor - Diodes Division |
| <b>Package:</b>      | 4-SIP, GBU                                     |
| <b>Availability:</b> | Please confirm with sales                      |

#### Product Page:

<https://antrexco.com/product/details/vishay-general-semiconductor-diodes-division/gbu4a-m3-51.html>

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#### Note:

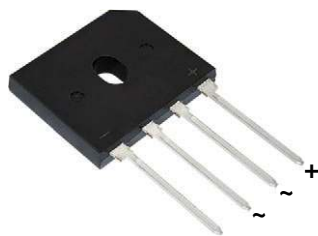
This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.

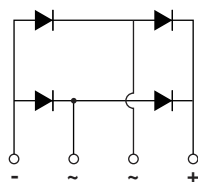
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## Glass Passivated Single-Phase Bridge Rectifier



Case Style GBU



Case Style GBU



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**

### FEATURES

- UL recognition file number E54214
- Ideal for printed circuit boards
- High surge current capability
- High case dielectric strength of 1500 V<sub>RMS</sub>
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

### TYPICAL APPLICATIONS

General purpose use in AC/DC bridge full wave rectification for monitor, TV, printer, switching mode power supply, adapter, audio equipment, and home appliances applications.

### LINKS TO ADDITIONAL RESOURCES



| PRIMARY CHARACTERISTICS |                                                 |
|-------------------------|-------------------------------------------------|
| $I_{F(AV)}$             | 4.0 A                                           |
| $V_{RRM}$               | 50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V |
| $I_{FSM}$               | 150 A                                           |
| $I_R$                   | 5 $\mu$ A                                       |
| $V_F$ at $I_F = 4.0$ A  | 1.0 V                                           |
| $T_J$ max.              | 150 °C                                          |
| Package                 | GBU                                             |
| Circuit configuration   | In-line                                         |

### MECHANICAL DATA

**Case:** GBU

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade  
Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 and M3 suffix meet JESD 201 class 1A whisker test

**Polarity:** as marked on body

**Mounting Torque:** 10 cm·kg (8.8 inches·lbs) max.

**Recommended Torque:** 5.7 cm·kg (5 inches·lbs)

| MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)                                                                        |                                   |             |       |       |       |       |       |       |                  |
|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------|-------|-------|-------|-------|-------|-------|------------------|
| PARAMETER                                                                                                                              | SYMBOL                            | GBU4A       | GBU4B | GBU4D | GBU4G | GBU4J | GBU4K | GBU4M | UNIT             |
| Maximum repetitive peak reverse voltage                                                                                                | V <sub>RRM</sub>                  | 50          | 100   | 200   | 400   | 600   | 800   | 1000  | V                |
| Maximum RMS voltage                                                                                                                    | V <sub>RMS</sub>                  | 35          | 70    | 140   | 280   | 420   | 560   | 700   | V                |
| Maximum DC blocking voltage                                                                                                            | V <sub>DC</sub>                   | 50          | 100   | 200   | 400   | 600   | 800   | 1000  | V                |
| Maximum average forward rectified output current at<br>T <sub>C</sub> = 100 °C <sup>(1)</sup><br>T <sub>A</sub> = 40 °C <sup>(2)</sup> | I <sub>F(AV)</sub>                | 4.0         |       |       |       |       |       |       | A                |
|                                                                                                                                        |                                   | 3.0         |       |       |       |       |       |       |                  |
| Peak forward surge current single sine-wave superimposed on rated load                                                                 | I <sub>FSM</sub>                  | 150         |       |       |       |       |       |       | A                |
| Rating for fusing (t < 8.3 ms)                                                                                                         | I <sup>2</sup> t                  | 93          |       |       |       |       |       |       | A <sup>2</sup> s |
| Operating junction and storage temperature range                                                                                       | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 |       |       |       |       |       |       | °C               |

### Notes

<sup>(1)</sup> Unit case mounted on 1.6" x 1.6" x 0.06" thick (4.0 cm x 4.0 cm x 0.15 cm) aluminum plate

<sup>(2)</sup> Units mounted on PCB with 0.5" x 0.5" (12 mm x 12 mm) copper pads and 0.375" (9.5 mm) lead length

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

| PARAMETER                                                         | TEST CONDITIONS         | SYMBOL         | GBU4A | GBU4B | GBU4D | GBU4G | GBU4J | GBU4K | GBU4M | UNIT |
|-------------------------------------------------------------------|-------------------------|----------------|-------|-------|-------|-------|-------|-------|-------|------|
| Maximum instantaneous forward voltage drop per diode              | 4.0 A                   | V <sub>F</sub> | 1.0   |       |       |       |       |       |       | V    |
| Maximum DC reverse current at rated DC blocking voltage per diode | T <sub>A</sub> = 25 °C  | I <sub>R</sub> | 5.0   |       |       |       |       |       |       | μA   |
|                                                                   | T <sub>A</sub> = 125 °C |                | 500   |       |       |       |       |       |       |      |
| Typical junction capacitance per diode                            | 4 V, 1 MHz              | C <sub>J</sub> | 57    |       |       |       |       |       |       | pF   |

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

| PARAMETER                  | SYMBOL                          | GBU4A | GBU4B | GBU4D | GBU4G | GBU4J | GBU4K | GBU4M | UNIT |
|----------------------------|---------------------------------|-------|-------|-------|-------|-------|-------|-------|------|
| Typical thermal resistance | R <sub>θJA</sub> <sup>(2)</sup> | 22    |       |       |       |       |       |       | °C/W |
|                            | R <sub>θJC</sub> <sup>(1)</sup> | 4.2   |       |       |       |       |       |       |      |

**Notes**

- (1) Units case mounted on aluminum plate heatsink  
(2) Units mounted in free air, no heatsink on PCB, 0.5" x 0.5" (12 mm x 12 mm) copper pads, 0.375" (9.5 mm) lead length

**ORDERING INFORMATION**

| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
|---------------|-----------------|------------------------|---------------|---------------|
| GBU4J-E3/45   | 3.857           | 45                     | 20            | Tube          |
| GBU4J-E3/51   | 3.857           | 51                     | 250           | Paper tray    |
| GBU4J-M3/45   | 3.565           | 45                     | 20            | Tube          |
| GBU4J-M3/51   | 3.565           | 51                     | 250           | Paper tray    |

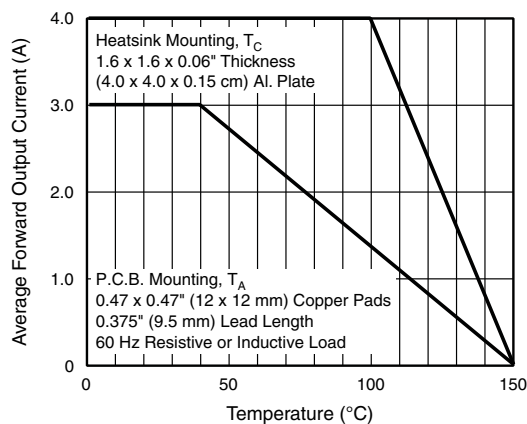
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Derating Curve Output Rectified Current

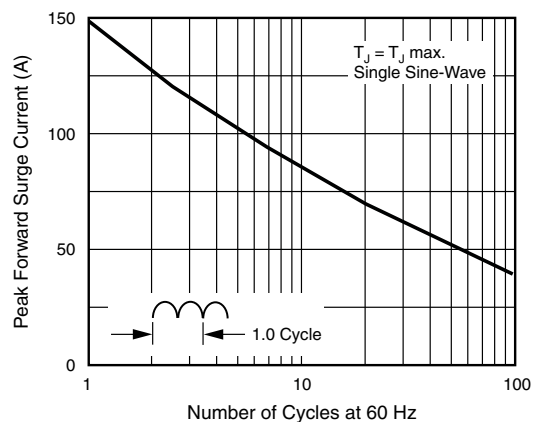


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

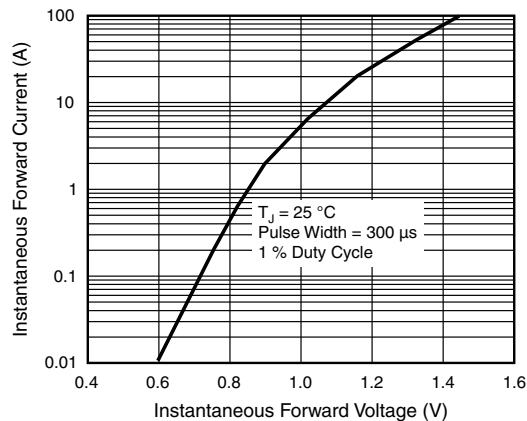


Fig. 3 - Typical Forward Characteristics Per Diode

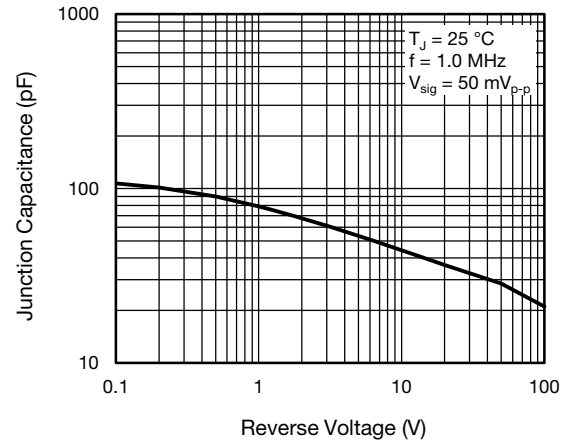


Fig. 5 - Typical Junction Capacitance Per Diode

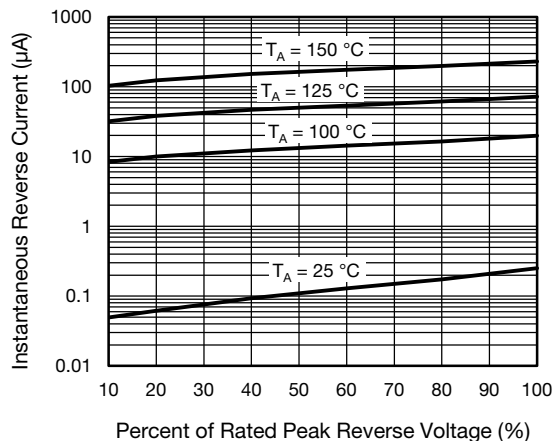


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

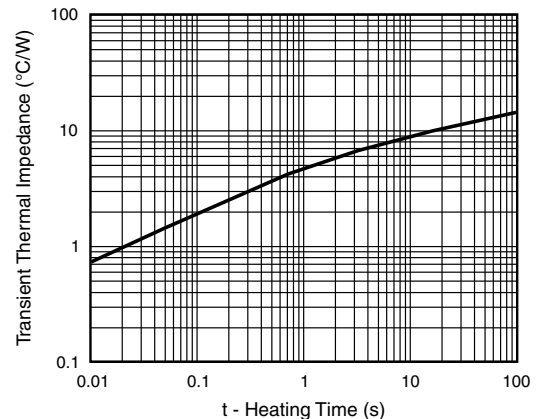
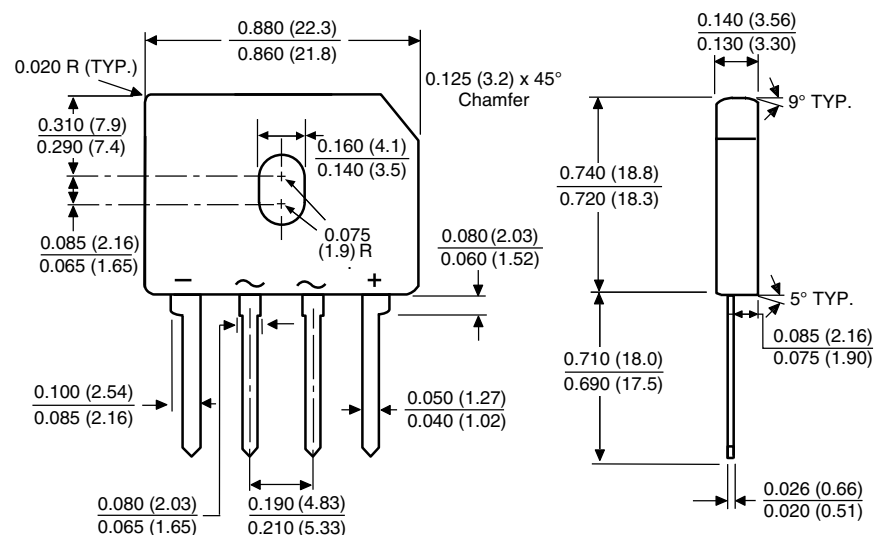


Fig. 6 - Typical Transient Thermal Impedance

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters) Case Type GBU



Polarity shown on front side of case, positive lead by beveled corner



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