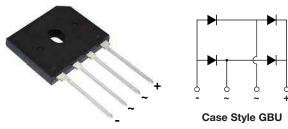
GBU4A, GBU4B, GBU4D, GBU4G, GBU4J, GBU4K, GBU4M

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## **Glass Passivated Single-Phase Bridge Rectifier**



**Case Style GBU** 

PRIMARY CHARACTERISTICS						
Package	GBU					
I <sub>F(AV)</sub>	4.0 A					
V <sub>RRM</sub>	50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V					
I <sub>FSM</sub>	150 A					
I <sub>R</sub>	5 μΑ					
$V_F$ at $I_F$ = 4.0 A	1.0 V					
T <sub>J</sub> max.	150 °C					
Diode variations	In-line					

### **FEATURES**

- UL recognition file number E54214
- · Ideal for printed circuit boards
- High surge current capability
- High case dielectric strength of 1500  $V_{\text{RMS}}$
- Solder dip 275 °C max. 10 s, per JESD 22-B106
   Compliant
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

### **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.

### **MECHANICAL DATA**

#### Case: GBU

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

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

E3 suffix meets 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)

<b>MAXIMUM RATINGS</b> ( $T_A = 25$ °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
$ \begin{array}{l} \mbox{Maximum average forward} \\ \mbox{rectified output current at} \end{array} & \begin{array}{l} T_{C} = 100 \ ^{\circ}C \ ^{(1)} \\ \\ T_{A} = 40 \ ^{\circ}C \ ^{(2)} \end{array} $	I <sub>F(AV)</sub>	4.0 3.0			А				
Peak forward surge current single sine-wave superimposed on rated load     I <sub>FSM</sub> 150				А					
Rating for fusing (t < 8.3 ms)	l <sup>2</sup> t	93						A <sup>2</sup> s	
Operating junction and storage temperature 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



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<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25 \text{ °C}$ 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	T <sub>A</sub> = 25 °C					5.0				
blocking voltage per diode	T <sub>A</sub> = 125 °C	I <sub>R</sub>				500				μA
Typical junction capacitance per diode	4 V, 1 MHz	C <sub>J</sub> 57					pF			

<b>THERMAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)									
PARAMETER SYMBOL GBU4A GBU4B GBU4D GBU4G GBU4J GBU4K GBU4M UNIT							UNIT		
Typical thermal resistance	R <sub>0JA</sub> <sup>(2)</sup>	22							°C/W
Typical merma resistance	R <sub>0JC</sub> <sup>(1)</sup>	$R_{\theta JC}^{(1)}$ 4.2			0/10				

#### Notes

<sup>(1)</sup> 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			

### RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)

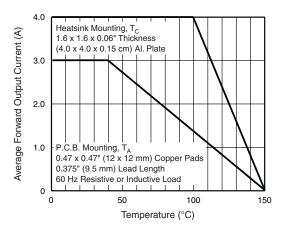


Fig. 1 - Derating Curve Output Rectified Current

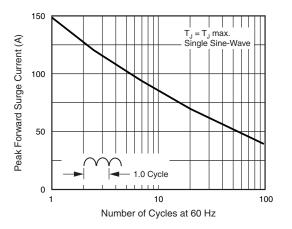
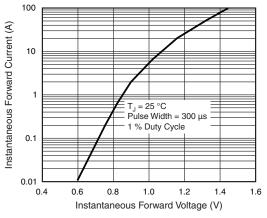


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

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Fig. 3 - Typical Forward Characteristics Per Diode

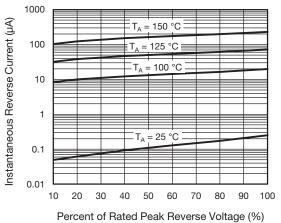


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

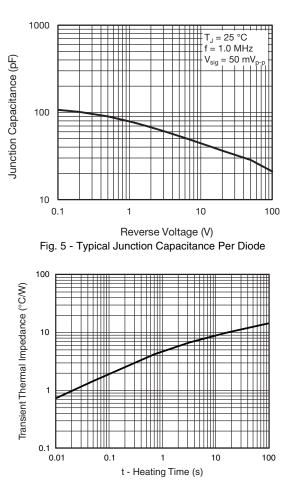
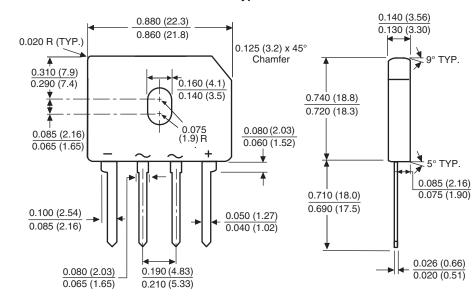


Fig. 6 - Typical Transient Thermal Impedance



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

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



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