

## Glass Passivated Single-Phase Bridge Rectifier



Case Style GBU

### 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 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC


**RoHS**  
COMPLIANT

### TYPICAL APPLICATIONS

General purpose use in ac-to-dc bridge full wave rectification for monitor, TV, printer, power supply, switching mode power supply, adapter, audio equipment and home appliances applications.

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	8.0 A
$V_{RRM}$	50 V to 1000 V
$I_{FSM}$	200 A
$I_R$	5 $\mu$ A
$V_F$	1.0 V
$T_J$ max.	150 °C

### MECHANICAL DATA

**Case:** GBU

Epoxy meets UL 94 V-0 flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, 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)

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)									
PARAMETER	SYMBOL	GBU8A	GBU8B	GBU8D	GBU8G	GBU8J	GBU8K	GBU8M	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
Maximum average forward rectified output current at $T_C = 60$ °C <sup>(1)</sup> $T_A = 40$ °C <sup>(2)</sup>	$I_{F(AV)}$	8.0 3.9						A	
Peak forward surge current single sine-wave super-imposed on rated load	$I_{FSM}$	200						A	
Rating for fusing ( $t < 8.3$ ms)	$I^2t$	166						A <sup>2</sup> s	
Operating junction and storage temperature range	$T_J, T_{STG}$	- 55 to + 150						°C	

#### Notes:

(1) Unit case mounted on aluminum plate heatsink

(2) Units mounted on P.C.B. with 0.5 x 0.5" (12 x 12 mm) copper pads and 0.375" (9.5 mm) lead length

ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)											
PARAMETER	TEST CONDITIONS	SYMBOL	GBU8A	GBU8B	GBU8D	GBU8G	GBU8J	GBU8K	GBU8M	UNIT	
Maximum instantaneous forward voltage drop per diode	8.0 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 T <sub>A</sub> = 125 °C	I <sub>R</sub>					5.0 500				μA
Typical junction capacitance per diode	4 V, 1 MHz	C <sub>J</sub>	211						94		pF

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)										
PARAMETER	SYMBOL	GBU8A	GBU8B	GBU8D	GBU8G	GBU8J	GBU8K	GBU8M	UNIT	
Typical thermal resistance	R <sub>θJA</sub> <sup>(2)</sup> R <sub>θJC</sub> <sup>(1)(3)</sup>					20 4.0				°C/W

**Notes:**

- (1) Units case mounted on aluminum plate heatsink
- (2) Units mounted in free air, no heatsink on P.C.B., 0.5 x 0.5" (12 x 12 mm) copper pads, 0.375" (9.5 mm) lead length
- (3) Recommended mounting position is to bolt down on heatsink with silicone thermal compound for maximum heat transfer with #6 screws

ORDERING INFORMATION				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
GBU8J-E3/45	3.857	45	20	Tube
GBU8J-E3/51	3.857	51	250	Paper tray

## RATINGS AND CHARACTERISTICS CURVES

(T<sub>A</sub> = 25 °C unless otherwise noted)

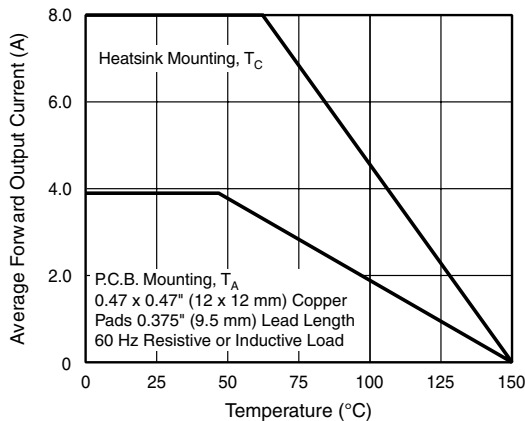


Figure 1. Derating Curve Output Rectified Current

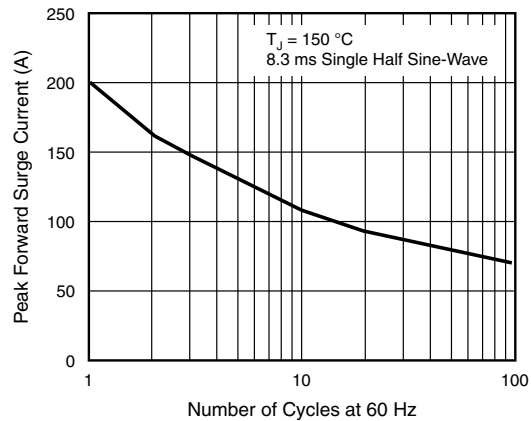


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode



Figure 3. Typical Forward Characteristics Per Diode

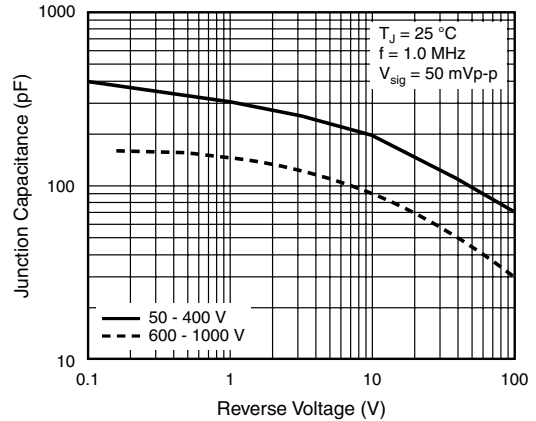


Figure 5. Typical Junction Capacitance Per Diode

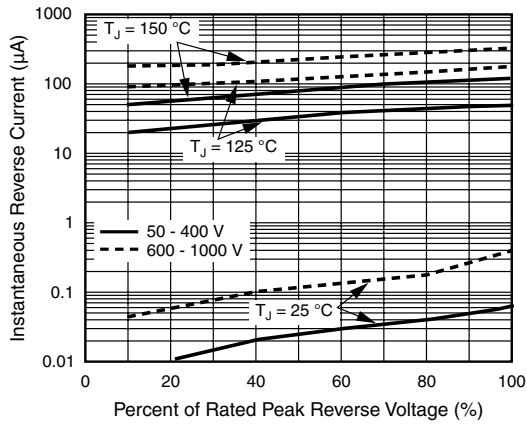


Figure 4. Typical Reverse Leakage Characteristics Per Diode

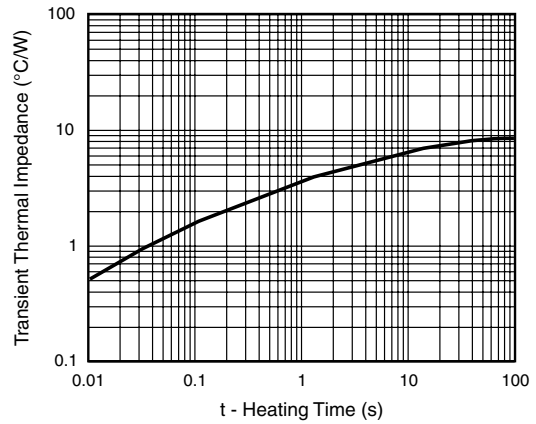


Figure 6. Typical Transient Thermal Impedance Per Diode

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### Case Type GBU



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



## Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.