

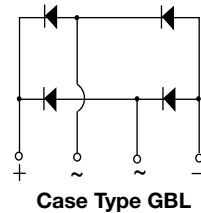


**THE DATASHEET OF  
GBL04-E3/51**





## Glass Passivated Single-Phase Bridge Rectifier



### FEATURES

- UL recognition file number E54214
- Ideal for printed circuit boards
- High surge current capability
- Typical  $I_R$  less than 0.1  $\mu\text{A}$
- High case dielectric strength
- 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)

**RoHS**  
COMPLIANT

### LINKS TO ADDITIONAL RESOURCES



3D Models

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	4 A
$V_{RRM}$	50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V
$I_{FSM}$	150 A
$I_R$	5 $\mu\text{A}$
$V_F$ at $I_F = 4.0$ A	1.0 V
$T_J$ max.	150 °C
Package	GBL
Circuit configuration	In-line

### TYPICAL APPLICATIONS

General purpose use in AC/DC bridge full wave rectification for monitor, TV, printer, SMPS, adapter, audio equipment, and home appliances application.

### MECHANICAL DATA

**Case:** GBL

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

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)										
PARAMETER	SYMBOL	GBL005	GBL01	GBL02	GBL04	GBL06	GBL08	GBL10	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	$I_{F(AV)}$	$T_C = 50$ °C <sup>(1)</sup>							4.0	A
		$T_A = 40$ °C <sup>(2)</sup>							3.0	
Peak forward surge current single sine-wave superimposed on rated load	$I_{FSM}$	150							A	
Rating for fusing ( $t < 8.3$ ms)	$I^2t$	93							A <sup>2</sup> s	
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150							°C	

### Notes

- (1) Unit mounted on 3.0" x 3.0" x 0.11" thick (7.5 cm x 7.5 cm x 0.3 cm) aluminum plate
- (2) Unit mounted on PCB at 0.375" (9.5 mm) lead length and 0.5" x 0.5" (12 mm x 12 mm) copper pads

ELECTRICAL CHARACTERISTICS ( $T_A = 25$ °C unless otherwise noted)										
PARAMETER	TEST CONDITIONS	SYMBOL	GBL005	GBL01	GBL02	GBL04	GBL06	GBL08	GBL10	UNIT
Maximum instantaneous forward voltage drop per diode	4.0 A	$V_F$	1.0							V
Maximum DC reverse current at rated DC blocking voltage per diode	$T_A = 25$ °C	$I_R$	5.0							$\mu\text{A}$
	$T_A = 125$ °C		500							
Typical junction capacitance per diode	4.0 V, 1 MHz	$C_J$	95				40			pF



THERMAL CHARACTERISTICS ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)									
PARAMETER	SYMBOL	GBL005	GBL01	GBL02	GBL04	GBL06	GBL08	GBL10	UNIT
Typical thermal resistance	$R_{\theta JA}$ (2)	22							$^\circ\text{C/W}$
	$R_{\theta JC}$ (1)	3.5							

**Notes**

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ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
GBL06-E3/45	2.18	45	20	Tube
GBL06-E3/51	2.18	51	400	Anti-static PVC tray

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

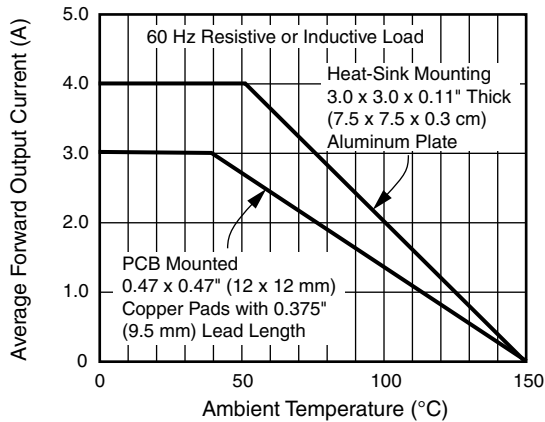


Fig. 1 - Derating Curves Output Rectified Current

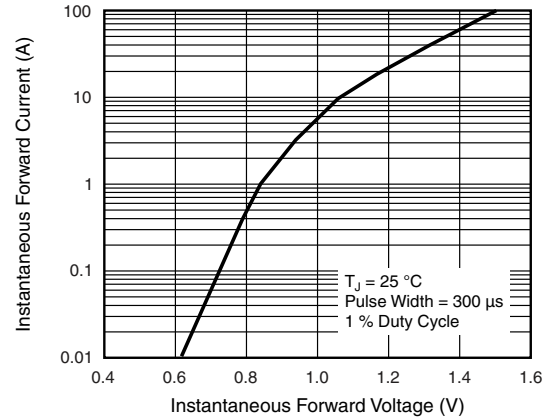


Fig. 3 - Typical Forward Voltage Characteristics Per Diode

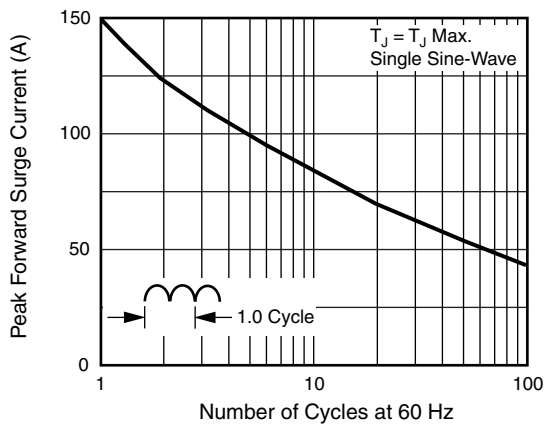


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

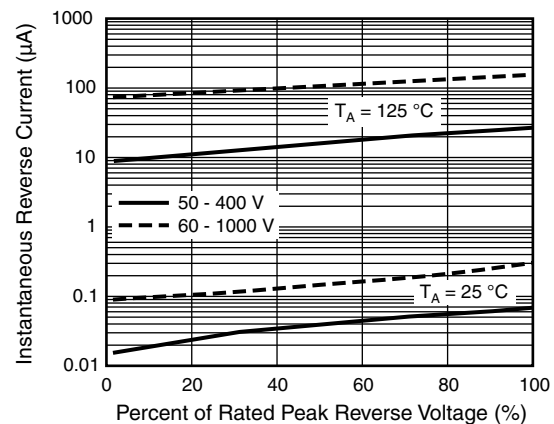


Fig. 4 - Typical Reverse Characteristics Per Diode

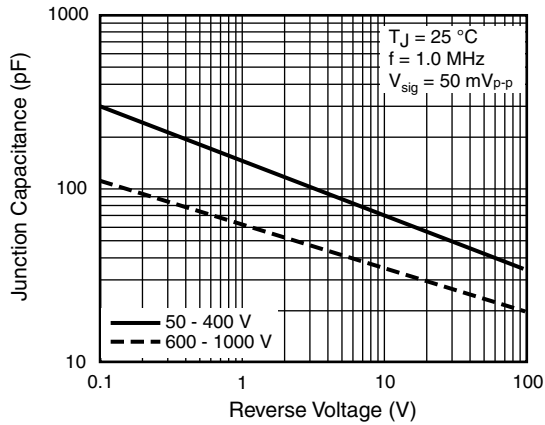


Fig. 5 - Typical Junction Capacitance Per Diode

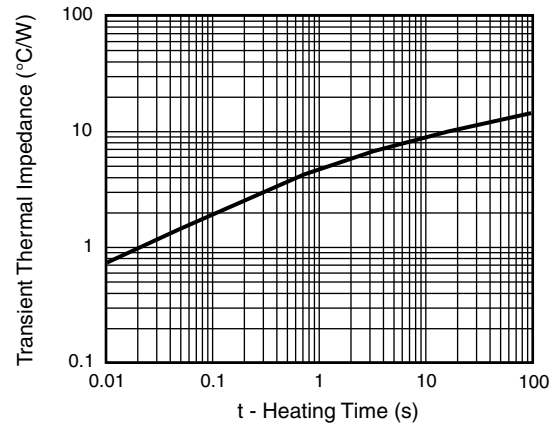
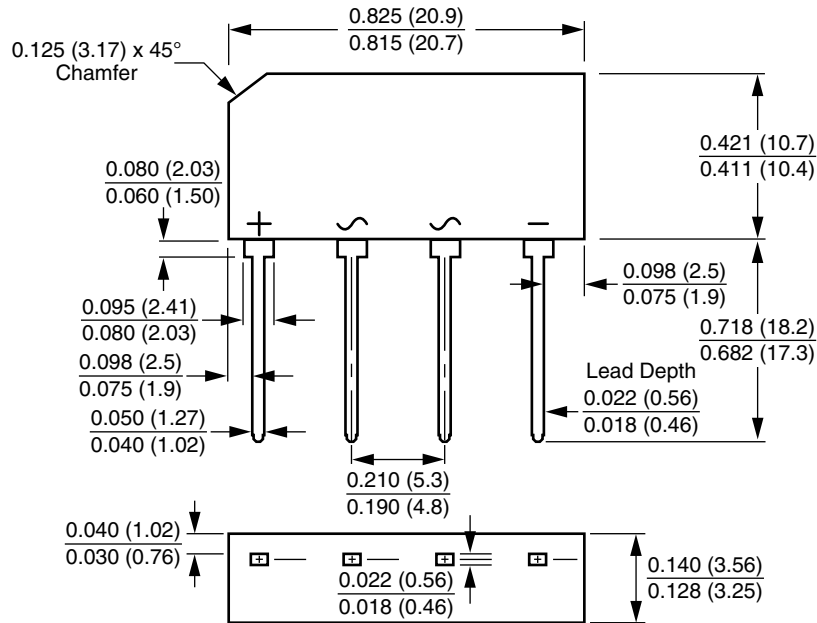


Fig. 6 - Typical Transient Thermal Impedance Per Diode

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**Case Type GBL**



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



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