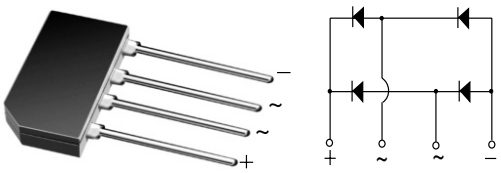
Glass Passivated Single-Phase Bridge Rectifier



Case Type GBL

FEATURES

- UL recognition file number E54214
- Ideal for printed circuit boards
- High surge current capability
- Typical I_R less than 0.1 µA
- High case dielectric strength
- 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, SMPS, adapter, audio equipment, and home appliances application.

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	4 A
V_{RRM}	50 V to 1000 V
I_{FSM}	120 A
I_R	5 µA
V_F	1.0 V
T_J max.	150 °C

MECHANICAL DATA

Case: GBL

Epoxy meets UL 94V-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

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	GBLA005	GBLA01	GBLA02	GBLA04	GBLA06	GBLA08	GBLA10	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 T_C = 50 °C (1) rectified output current at T_A = 40 °C (2)	$I_{F(AV)}$	4.0 3.0							A
Peak forward surge current single sine-wave superimposed on rated load	I_{FSM}	120							A
Rating for fusing (t < 8.3 ms)	I^2t	60							A^2s
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 x 7.5 x 0.3 cm) aluminum plate

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

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)										
PARAMETER	**TEST CONDITIONS**	**SYMBOL**	**GBLA005**	**GBLA01**	**GBLA02**	**GBLA04**	**GBLA06**	**GBLA08**	**GBLA10**	**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 T_A = 125 °C	I_R	5.0 500							µA

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)									
PARAMETER	**SYMBOL**	**GBLA005**	**GBLA01**	**GBLA02**	**GBLA04**	**GBLA06**	**GBLA08**	**GBLA10**	**UNIT**
Typical thermal resistance	$R_{\theta JA}$ $R_{\theta JC}$	47 (2) 10 (1)							°C/W

Notes:

(1) Unit mounted on 3.0 x 3.0 x 0.11" thick (7.5 x 7.5 x 0.3 cm) aluminum plate

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

ORDERING INFORMATION (Example)				
PREFERRED P/N	**UNIT WEIGHT (g)**	**PREFERRED PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
GBLA06-E3/45	2.133	45	20	Tube
GBLA06-E3/51	2.133	51	400	Anti-static PVC tray

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

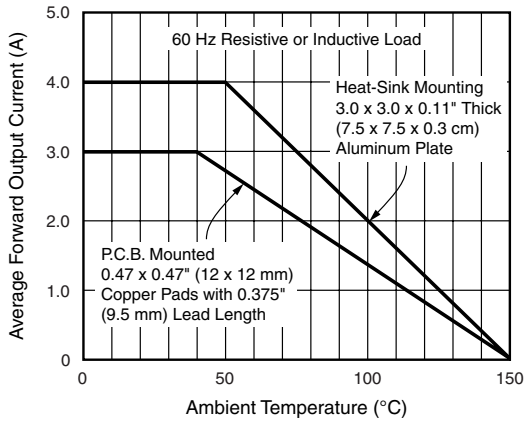


Figure 1. Derating Curves Output Rectified Current

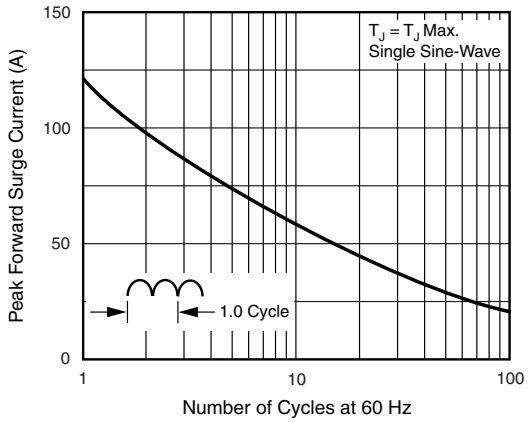


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

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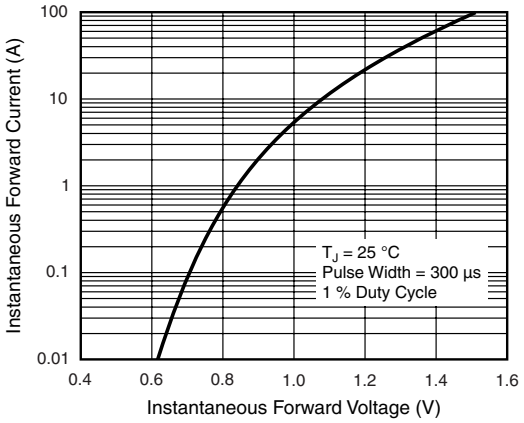


Figure 3. Typical Forward Voltage Characteristics Per Diode

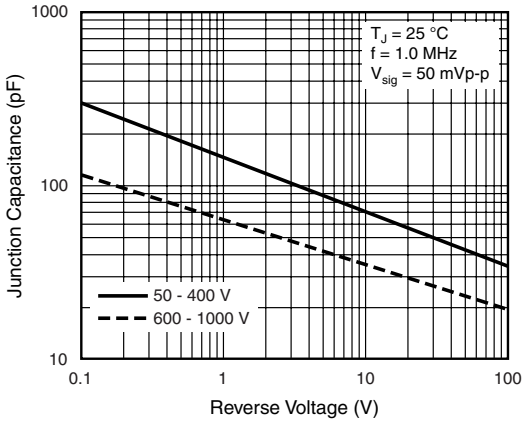


Figure 5. Typical Junction Capacitance Per Diode

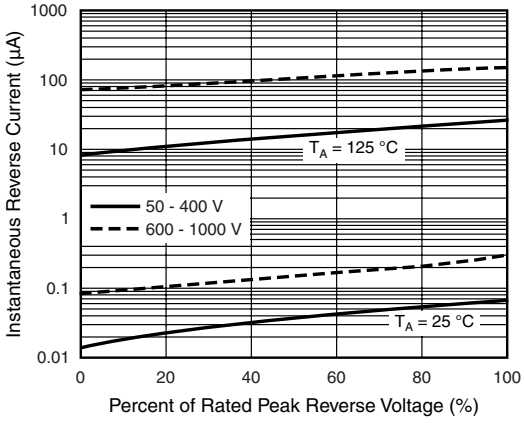


Figure 4. Typical Reverse Characteristics Per Diode

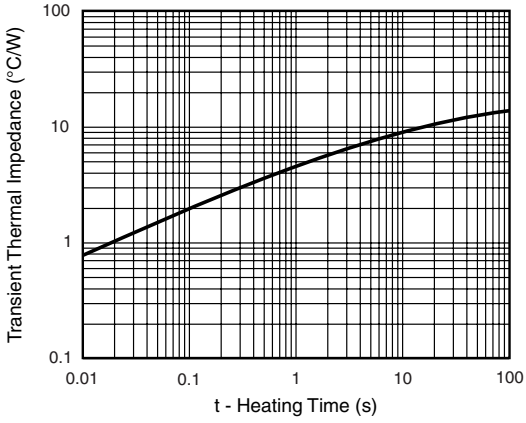
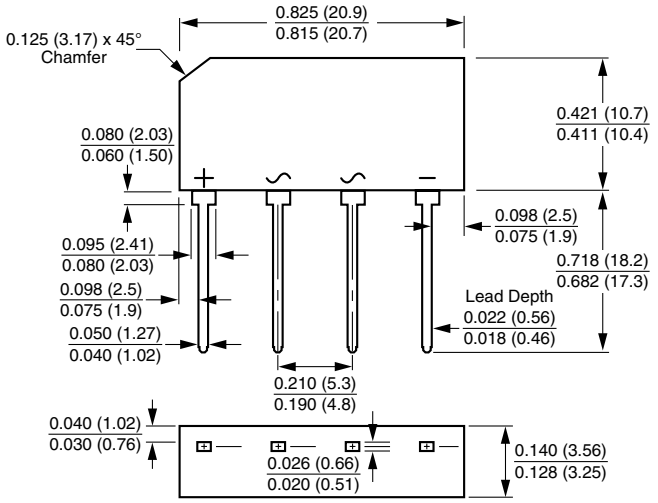


Figure 6. Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

Case Type GBL



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

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