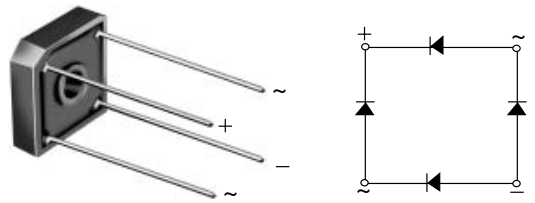
Glass Passivated Single-Phase Bridge Rectifier



Case Style GBPC1

FEATURES

- UL Recognition file number E54214
- Ideal for printed circuit boards
- Typical I_R less than 0.1 µA
- High surge current capability
- High case dielectric strength 1500 V_{RMS}
- Solder Dip 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

TYPICAL APPLICATIONS

General purpose use in ac-to-dc bridge full wave rectification for Switching Power Supply, Home Appliances, Office Equipment, Industrial Automation applications.

MAJOR RATINGS AND CHARACTERISTICS	
$I_{F(AV)}$	3 A
V_{RRM}	50 V to 1000 V
I_{FSM}	60 A
I_R	5 µA
V_F	1.0 V
T_j max.	150 °C

MECHANICAL DATA

Case: GBPC1

Epoxy meets UL 94V-0 flammability rating

Terminals: Silver plated leads, solderable per J-STD-002B and JESD22-B102D
E4 suffix for commercial grade

Polarity: As marked, positive lead by belevled corner

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	GBPC 1005	GBPC 101	GBPC 102	GBPC 104	GBPC 106	GBPC 108	GBPC 110	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS bridge input 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 (1) / T_A = 25 °C (2)	$I_{F(AV)}$	3.0 / 2.0							A
Peak forward surge current single sine-wave superimposed on rated load	I_{FSM}	60							A
Rating for fusing (t < 8.3 ms)	I^2t	15							A^2sec
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150							°C

Note:

(1) Unit mounted on 4.0 x 4.0 x 0.11" thick (10.5 x 10.5 x 0.3 cm) Al. Plate

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

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)										
PARAMETER	**TEST CONDITIONS**	**SYMBOL**	**GBPC 1005**	**GBPC 101**	**GBPC 102**	**GBPC 104**	**GBPC 106**	**GBPC 108**	**GBPC 110**	**UNIT**
Maximum instantaneous forward voltage drop per diode	at 1.5 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
Typical junction capacitance per diode	at 4.0 V, 1 MHz	C_J	21							pF

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)										
PARAMETER	**SYMBOL**	**GBPC 1005**	**GBPC 101**	**GBPC 102**	**GBPC 104**	**GBPC 106**	**GBPC 108**	**GBPC 110**	**UNIT**
Typical thermal resistance (1)	$R_{\theta JA}$ $R_{\theta JC}$	12 8.0							°C/W

Note:

(1) Bolt down on heat-sink with silicone thermal compound between bridge and mounting surface for maximum heat transfer with #6 screw

ORDERING INFORMATION				
PREFERRED P/N	**UNIT WEIGHT (g)**	**PREFERRED PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
GBPC106-E4/51	2.5	51	100	Paper Box

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

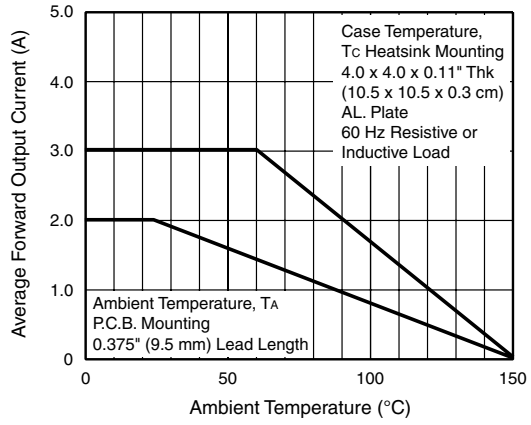


Figure 1. Derating Curve Output Rectified Current

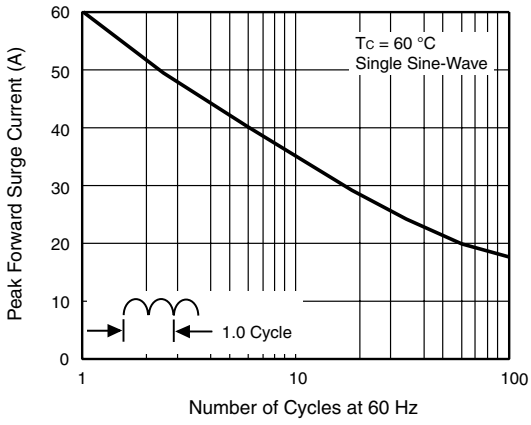


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

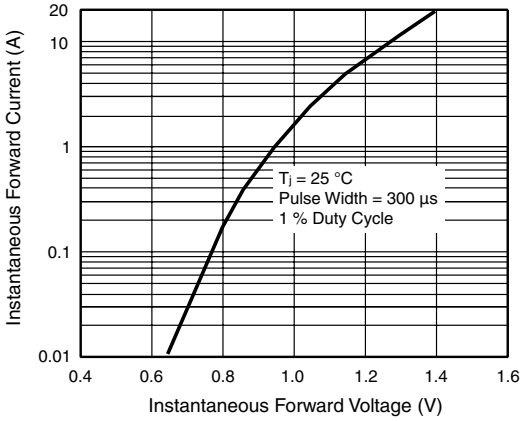


Figure 3. Typical Forward Characteristics Per Diode

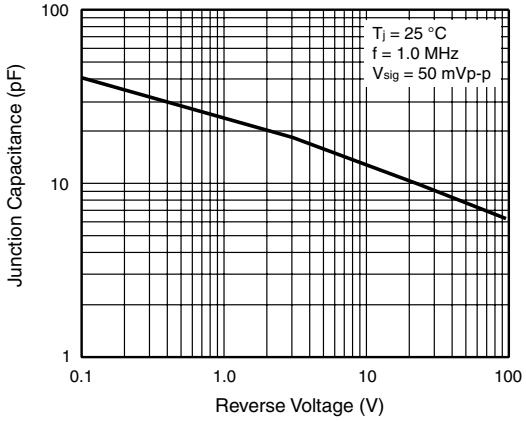


Figure 5. Typical Junction Capacitance Per Diode

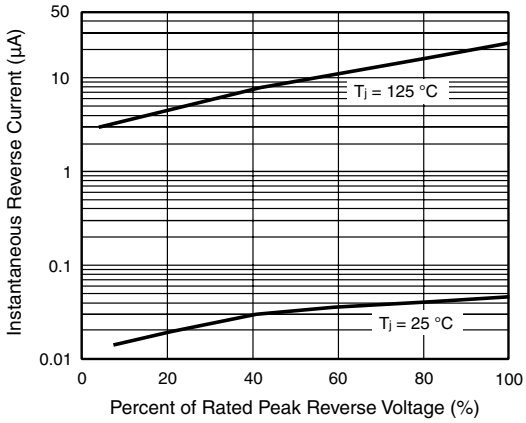


Figure 4. Typical Reverse Leakage Characteristics Per Diode

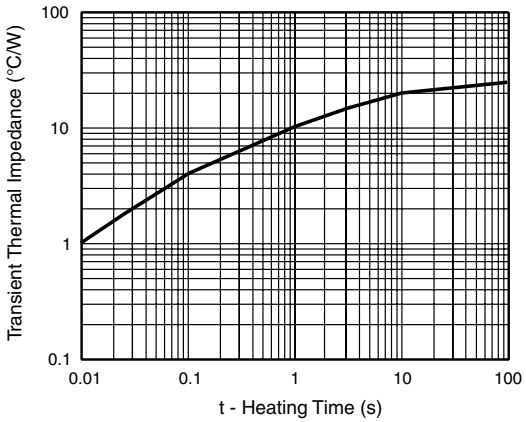
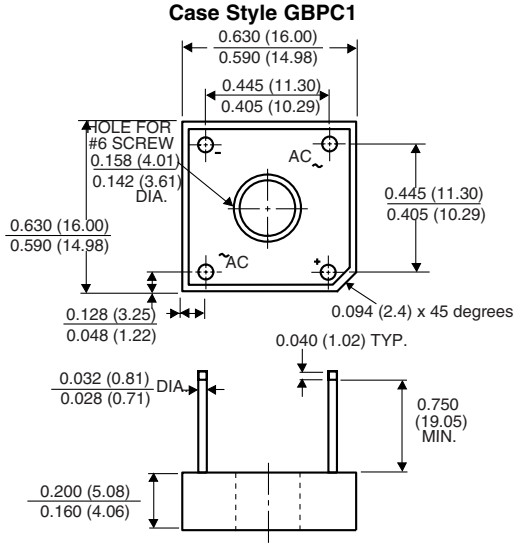


Figure 6. Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



Polarity shown on side of case: Positive lead by beveled corner

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