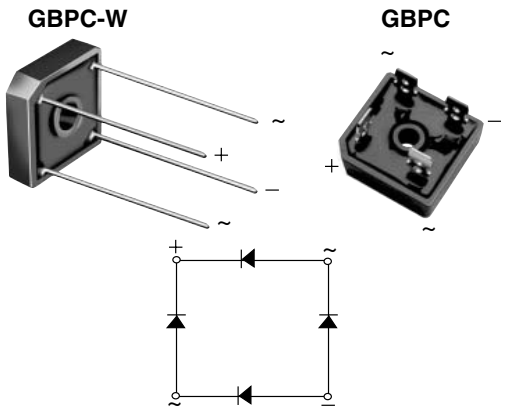
Glass Passivated Single-Phase Bridge Rectifier



FEATURES

- UL recognition file number E54214
- Universal 3-way terminals: snap-on, wire wrap-around, or P.C.B. mounting
- Typical I_R less than 0.3 µA
- High surge current capability
- Low thermal resistance
- 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 power supply, home appliances, office equipment, industrial automation applications.

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	12 A, 15 A, 25 A, 35 A
V_{RRM}	50 V to 1000 V
I_{FSM}	200 A, 300 A, 300 A, 400 A
I_R	5 µA
V_F	1.1 V
T_J max.	150 °C

MECHANICAL DATA

Case: GBPC, GBPC-W

Epoxy meets UL 94V-0 flammability rating

Terminals: Nickel plated on faston lugs or silver plated on wire leads, solderable per J-STD-002 and JESD22-B102. E4 suffix for consumer grade. Suffix letter “W” added to indicate wire leads (e.g. GBPC12005W).

Polarity: As marked, positive lead by belevled corner

Mounting Torque: 20 inches-lbs. max.

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

PARAMETER	SYMBOL	GBPC12, 15, 25, 35							UNIT
		005	01	02	04	06	08	10	
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 (Fig. 1) GBPC12 / GBPC15 / GBPC25 / GBPC35	$I_{F(AV)}$	12 / 15 / 25 / 35							A
Peak forward surge current single sine-wave superimposed on rated load GBPC12 / GBPC15 / GBPC25 / GBPC35	I_{FSM}	200 / 300 / 300 / 400							A
Rating (non-repetitive, for t greater than 1 ms and less than 8.3 ms) for fusing GBPC12 / GBPC15 / GBPC25 / GBPC35	I^2t	160 / 375 / 375 / 660							A^2s
RMS isolation voltage from case to leads	V_{ISO}	2500							V
Operating junction storage temperature range	T_J, T_{STG}	- 55 to + 150							°C

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)											
PARAMETER	**TEST CONDITIONS**	**SYMBOL**	**GBPC12, 15, 25, 35**							**UNIT**
			005	**01**	**02**	**04**	**06**	**08**	**10**	
Maximum instantaneous forward drop per diode GBPC12 GBPC15 GBPC25 GBPC35	I_F = 6.0 A I_F = 7.5 A I_F = 12.5 A I_F = 17.5 A	V_F	1.1							V
Maximum reverse DC 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	4 V, 1 MHz	C_J	300							pF

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)										
PARAMETER		**SYMBOL**	**GBPC12, 15, 25, 35**							**UNIT**
			005	**01**	**02**	**04**	**06**	**08**	**10**	
Typical thermal resistance (1)	GBPC12-25 GBPC35	$R_{\theta JC}$	1.9 1.4							°C/W

Notes:

(1) With heatsink

(2) Bolt down on heatsink with silicone thermal compound between bridge and mounting surface for maximum heat transfer with #10 screw

ORDERING INFORMATION (Example)				
PREFERRED P/N	**UNIT WEIGHT (g)**	**PREFERRED PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
GBPC1206-E4/51	15.79	51	100	Paper box
GBPC1506-E4/51	15.79	51	100	Paper box
GBPC2506-E4/51	15.79	51	100	Paper box
GBPC3506-E4/51	15.79	51	100	Paper box
GBPC1206W-E4/51	13.8	51	100	Paper box
GBPC1506W-E4/51	13.8	51	100	Paper box
GBPC2506W-E4/51	13.8	51	100	Paper box
GBPC3506W-E4/51	13.8	51	100	Paper box

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

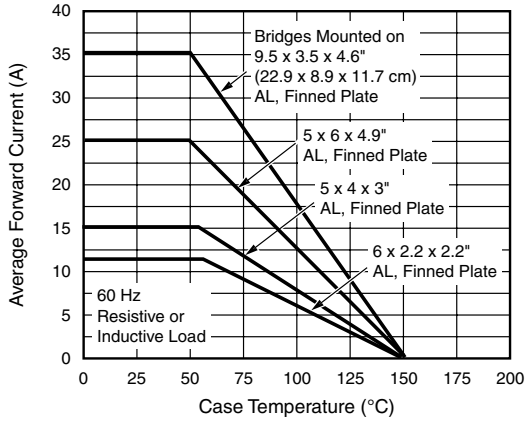


Figure 1. Maximum Output Rectified Current

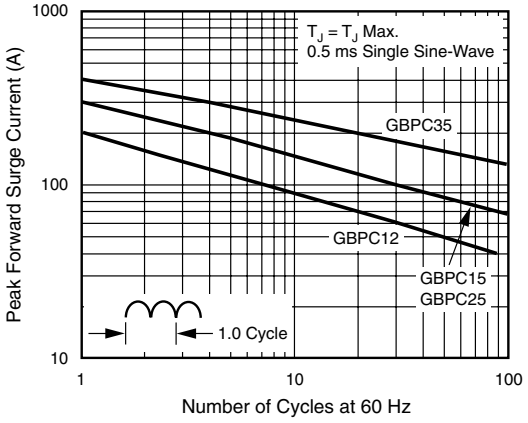


Figure 4. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

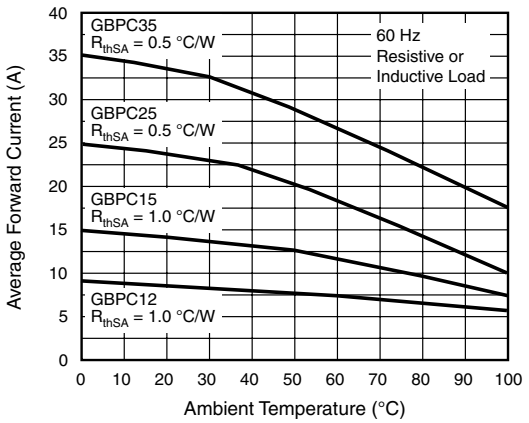


Figure 2. Maximum Output Rectified Current

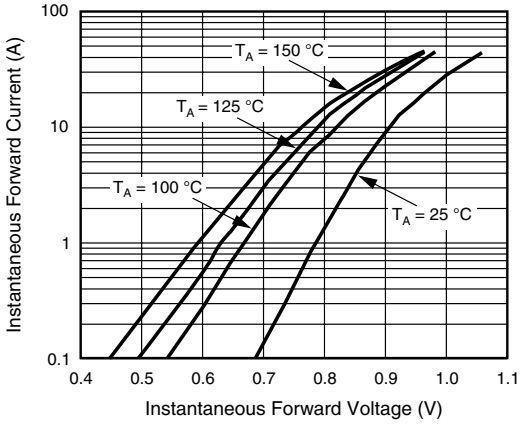


Figure 5. Typical Instantaneous Forward Characteristics Per Diode

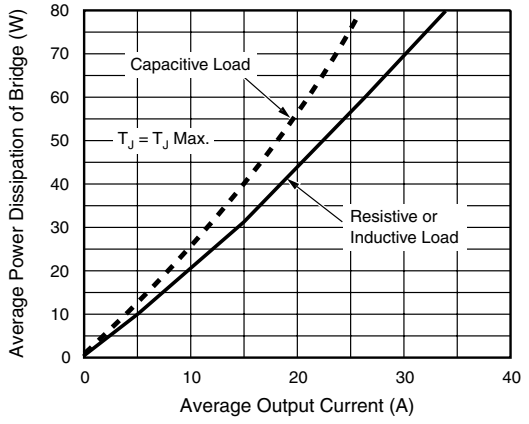


Figure 3. Maximum Power Dissipation

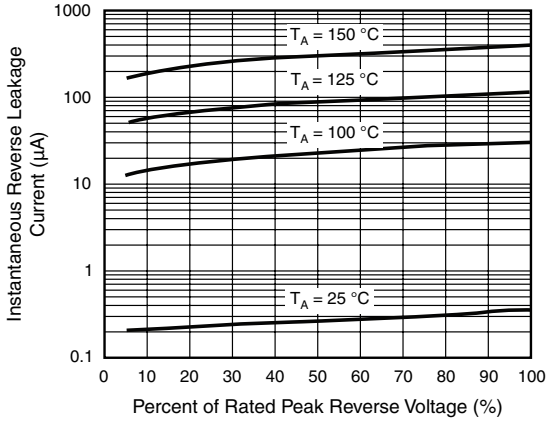


Figure 6. Typical Reverse Leakage Characteristics Per Diode

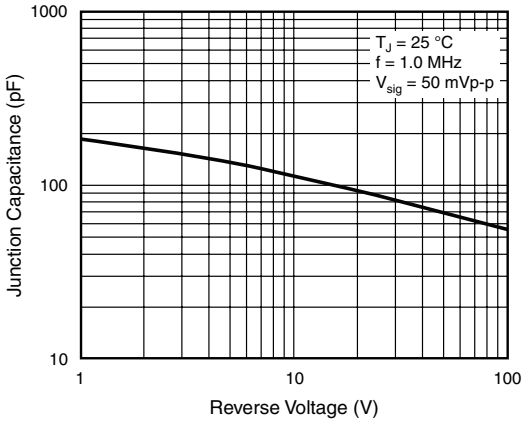


Figure 7. Typical Junction Capacitance Per Diode

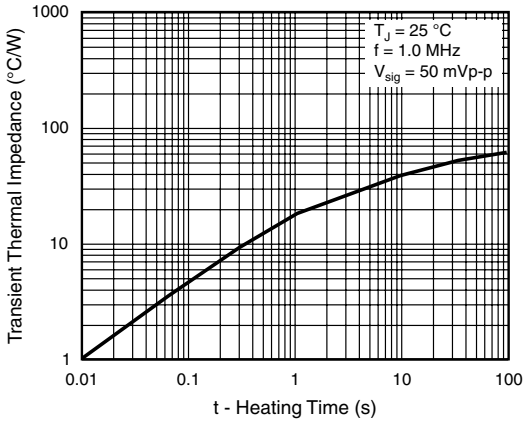
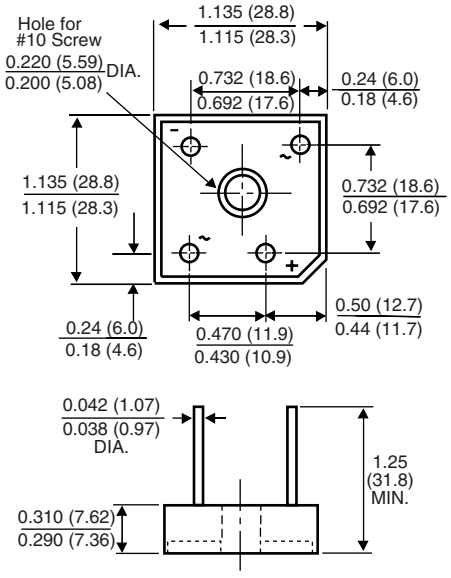


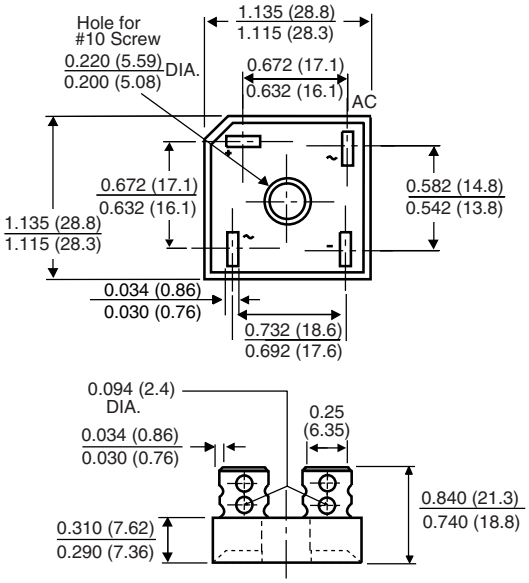
Figure 8. Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

GBPC-W



GBPC



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