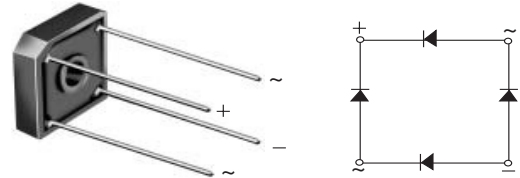


## Glass Passivated Single-Phase Bridge Rectifier

### Major Ratings and Characteristics

$I_{F(AV)}$	6 A
$V_{RRM}$	50 V to 1000 V
$I_{FSM}$	175 A
$I_R$	5 $\mu$ A
$V_F$	1.0 V
$T_j$ max.	150 °C

Case Style GBPC6



### Features

- UL Recognition file number E54214
- Ideal for printed circuit boards
- Typical  $I_R$  less than 0.5  $\mu$ A
- High surge current capability
- High case dielectric strength 1500  $V_{RMS}$
- Meets MSL level 1, per J-STD-020C

### Mechanical Data

**Case:** GBPC6

Epoxy meets UL-94V-0 Flammability rating

**Terminals:** Silver plated (E4 Suffix) leads, solderable per J-STD-002B and MIL-STD-750, Method 2026

**Polarity:** As marked, Positive lead by beveled corner

**Mounting Torque:** 10 cm-kg (8.8 inches-lbs) max.

**Recommended Torque:** 5.7 cm-kg (5 inches-lbs)

### Typical Applications

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

### Maximum Ratings

Ratings at 25 °C ambient temperature unless otherwise specified.

Parameter	Symbols	GBPC 6005	GBPC 601	GBPC 602	GBPC 604	GBPC 606	GBPC 608	GBPC 610	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 $T_C = 50$ °C <sup>(1)(2)</sup> $T_A = 40$ °C <sup>(3)</sup>	$I_{F(AV)}$	6.0 3.0							A
Peak forward surge current single sine-wave superimposed on rated load	$I_{FSM}$	175							A
Rating for fusing ( $t < 8.3$ ms)	$I^2t$	127							A <sup>2</sup> sec
Operating junction and storage temperature range	$T_J, T_{STG}$	- 55 to + 150							°C

### Electrical Characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

Parameter	Test condition	Symbols	GBPC 6005	GBPC 601	GBPC 602	GBPC 604	GBPC 606	GBPC 608	GBPC 610	Unit
Maximum instantaneous forward voltage drop per leg	at 3.0 A	$V_F$	1.0							V
Maximum DC reverse current at rated DC blocking voltage per leg	$T_A = 25\text{ °C}$ $T_A = 125\text{ °C}$	$I_R$	5.0 500							$\mu\text{A}$
Typical junction capacitance per leg	at 4.0 V, 1 MHz	$C_J$	186				90			pF

### Thermal Characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

Parameter	Symbols	GBPC 6005	GBPC 601	GBPC 602	GBPC 604	GBPC 606	GBPC 608	GBPC 610	Unit	
Typical thermal resistance per leg <sup>(1)</sup>	$R_{\theta JA}$ $R_{\theta JC}$	22 7.3								$^{\circ}\text{C/W}$

Notes:

- (1) Bolt down on heat-sink with silicone thermal compound between bridge and mounting surface for maximum heat transfer with #6 screw
- (2) Unit mounted on 5.5 x 6.0 x 0.11" thick (14 x 15 x 0.3 cm) Al. Plate
- (3) 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

### Ratings and Characteristics Curves

( $T_A = 25\text{ °C}$  unless otherwise noted)

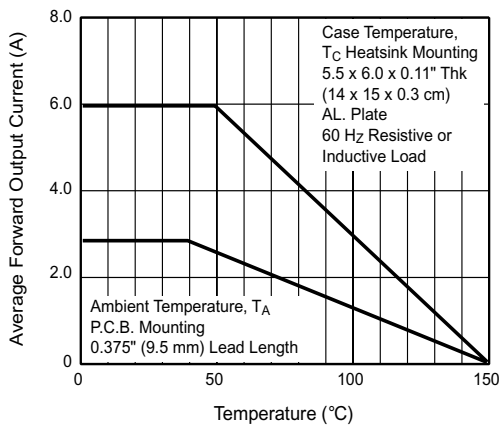


Figure 1. Derating Curve Output Rectified Current

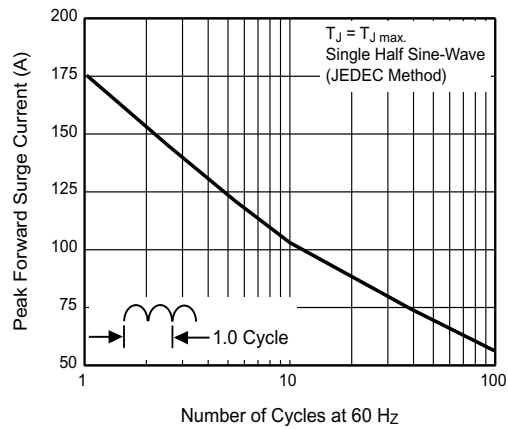


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Leg

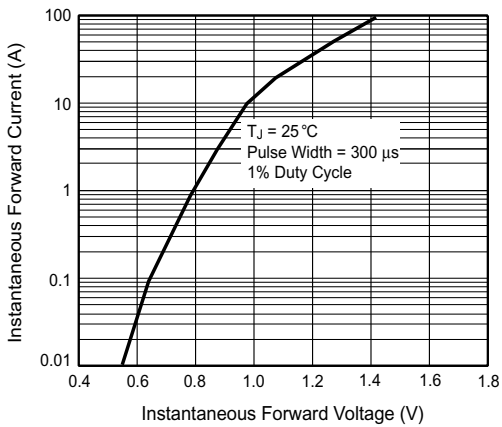


Figure 3. Typical Forward Characteristics Per Leg

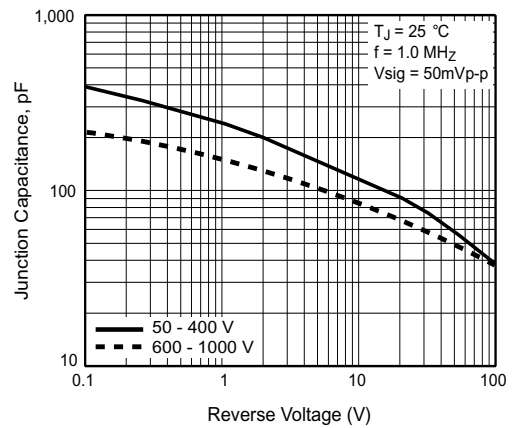


Figure 5. Typical Junction Capacitance Per Leg

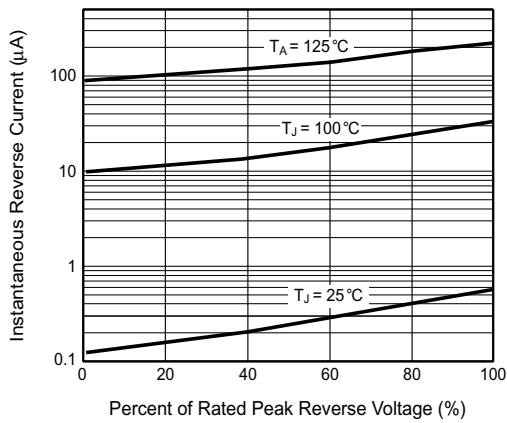


Figure 4. Typical Reverse Leakage Characteristics Per Leg

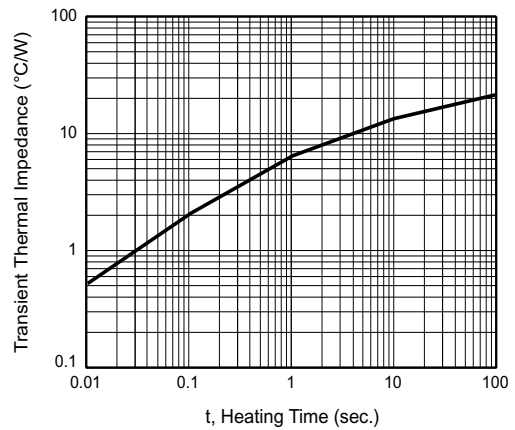
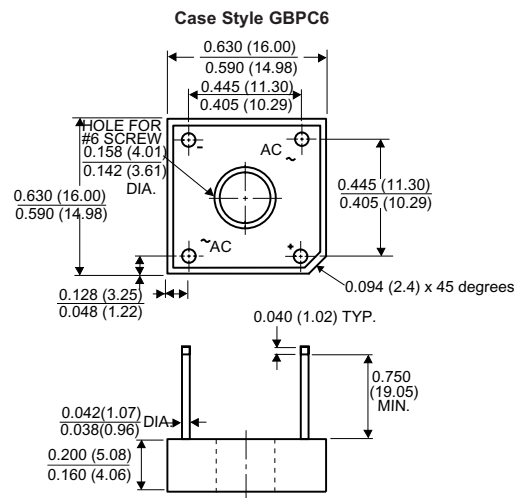


Figure 6. Typical Transient Thermal Impedance Per Leg

## Package outline dimensions in inches (millimeters)



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