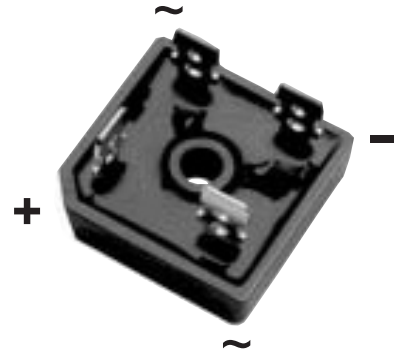


# Glass Passivated Single-Phase Bridge Rectifier, 50A

## GBPC5006 Thru GBPC5016

### FEATURES

- UL recognition file number E320098
- Universal 3-way terminals: snap-on, wire wrap-around, or PCB mounting
- Typical IR less than 1.0  $\mu$ A
- High surge current capability
- Low thermal resistance
- Solder dip 260°C, 40s
- Compliant to RoHS
- Glass passivated chips



### TYPICAL APPLICATIONS

General purpose use in AC/DC bridge full wave rectification for power supply, home appliances, office equipment, industrial automation applications.

### MECHANICAL DATA

**Case:** GBPC

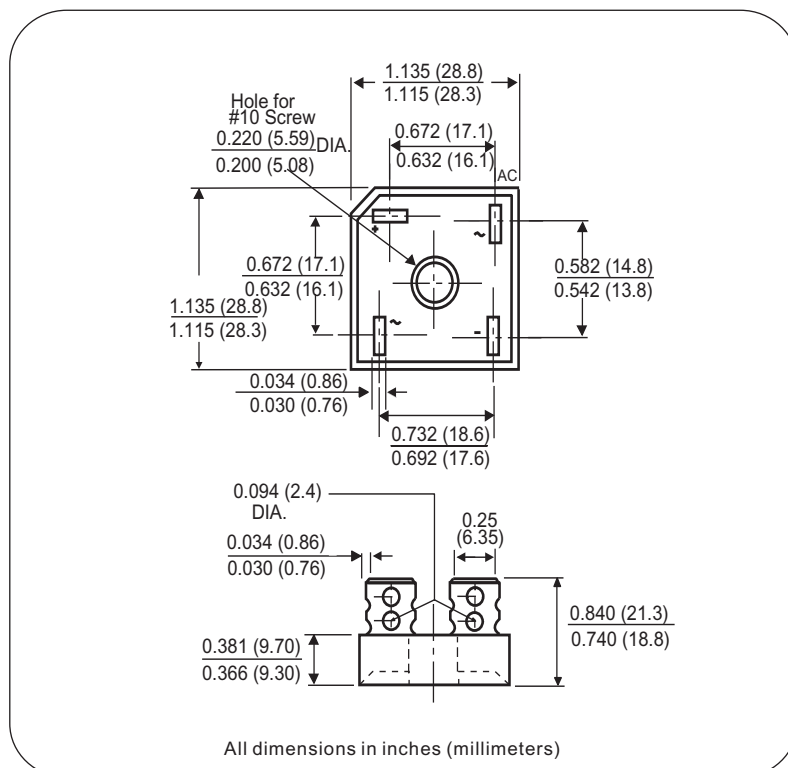
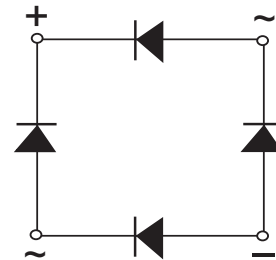
Epoxy meets UL 94 V-O flammability rating

**Terminals:** Nickel plated on faston lugs or silver plated on wire leads, solderable per J-STD-002 and JESD22-B102.

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

**Mounting Torque:** 20 inches-lbs. max. (M5 screw)

**Weight:** 16g (0.56 ozs)



PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	50A
$V_{RRM}$	600V to 1600V
$I_{FSM}$	450A
$I_R$	5 $\mu$ A
$V_F$	1.1V
$T_{Jmax.}$	150°C

MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)							
PARAMETER	SYMBOL	GBPC50					UNIT
		06	08	10	12	16	
Maximum repetitive peak reverse voltage	$V_{RRM}$	600	800	1000	1200	1600	V
Maximum RMS voltage	$V_{RMS}$	420	560	700	840	1120	V
Maximum DC blocking voltage	$V_{DC}$	600	800	1000	1200	1600	V
Maximum average forward rectified output current (Fig. 1)	$I_{F(AV)}$	50					A
Peak forward surge current single sine-wave superimposed on rated load	$I_{FSM}$	450					A
Rating (non-repetitive, for t greater than 1 ms and less than 8.3 ms) for fusing	$I^2t$	840					A <sup>2</sup> s
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 ( $T_A = 25^\circ\text{C}$ unless otherwise noted)								
PARAMETER	TEST CONDITIONS	SYMBOL	GBPC50					UNIT
			06	08	10	12	16	
Maximum instantaneous forward drop per diode	$I_F = 25\text{A}$	$V_F$	1.1					V
Maximum reverse DC current at rated DC blocking voltage per diode	$T_A = 25^\circ\text{C}$	$I_R$	5					$\mu$ A
	$T_A = 150^\circ\text{C}$		500					
Typical junction capacitance per diode	4V, 1MHz	$C_J$	300					pF

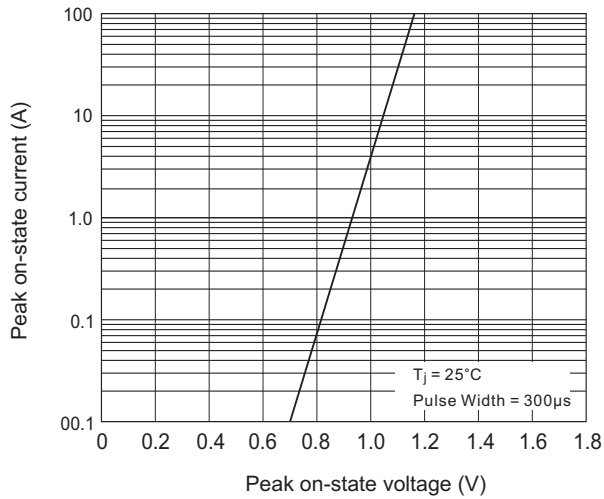
THERMAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)							
PARAMETER	SYMBOL	GBPC50					UNIT
		06	08	10	12	16	
Typical thermal resistance	$R_{\theta JC^{(1)}}$	1.4					°C/W

## Notes

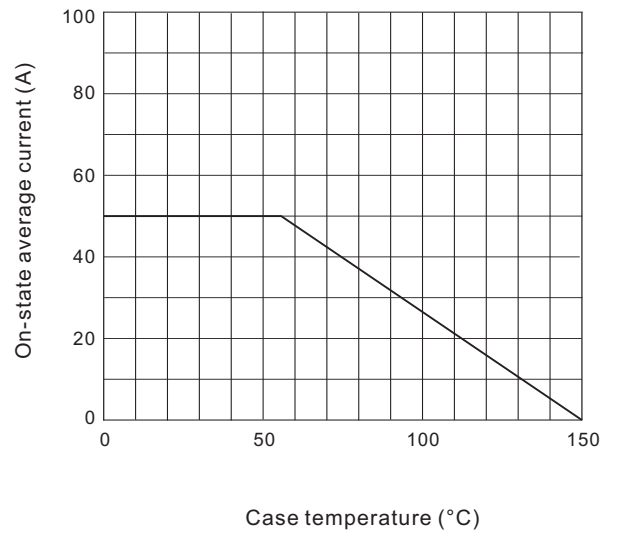
(1) With heatsink

(2) Bolt down on heatsink with silicone thermal compound between bridge and mounting surface for maximum heat transfer with M5 screw

**Fig.1 On-state current and voltage**



**Fig.2 Case temperature vs on-state average current**



**Fig.3 On-state surge current vs cycles**

