

## 40A, 50A, 50V - 1000V Standard Bridge Rectifier

### FEATURES

- Glass passivated chip junction
- Integrally molded heatsink provide very low thermal resistance for maximum heat dissipation
- Universal 4-way terminals: snap-on, wrap-around, solder or P.C. board mounting
- High surge current capability
- UL Recognized File # E-326243
- RoHS Compliant

### APPLICATIONS

- Switching mode power supply (SMPS)
- AC to DC converter

### MECHANICAL DATA

- Case: GBPC40  
GBPC40-M: Terminal cathode parallel to anode
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Mounting torque: 20 in-lbs maximum
- Polarity: As marked
- Weight: 17.30g (approximately)

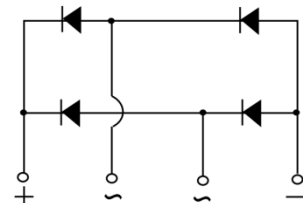
KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	40, 50	A
$V_{RRM}$	50 - 1000	V
$I_{FSM}$	400	A
$T_{JMAX}$	150	°C
Package	GBPC40	
Configuration	Quad	



GBPC40



GBPC40-M



### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	005	01	02	04	06	08	10	UNIT	
Repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V	
Reverse voltage, total rms value	$V_{R(RMS)}$	35	70	140	280	420	560	700	V	
Forward current	GBPC40	$I_F$							40	A
	GBPC50	$I_F$							50	A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	$I_{FSM}$							400	A
Rating for fusing ( $t < 8.3\text{ms}$ )	$I^2t$	$I^2t$							664	$\text{A}^2\text{s}$
Junction temperature	$T_J$	$T_J$							- 55 to +150	°C
Storage temperature	$T_{STG}$	$T_{STG}$							- 55 to +150	°C

**THERMAL PERFORMANCE**

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-case thermal resistance	$R_{\theta JC}$	1.5	°C/W

**ELECTRICAL SPECIFICATIONS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT	
Forward voltage per diode <sup>(1)</sup>	GBPC40	$I_F = 20\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	1.1	V
	GBPC50			$I_F = 25\text{A}, T_J = 25^\circ\text{C}$	-	1.1
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	$T_J = 25^\circ\text{C}$	$I_R$	-	10	$\mu\text{A}$	

**Notes:**

1. Pulse test with  $PW = 0.3\text{ms}$
2. Pulse test with  $PW = 30\text{ms}$

**ORDERING INFORMATION**

ORDERING CODE <sup>(1)</sup>	PACKAGE	PACKING
GBPC*x	GBPC40	50 / Tray
GBPC*xM	GBPC40-M	50 / Tray

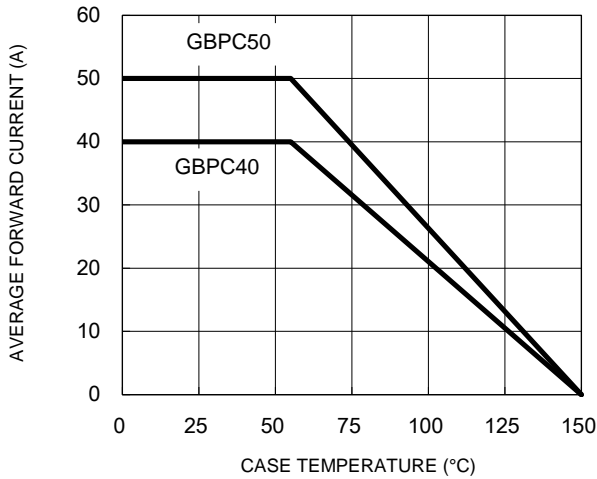
**Notes:**

1. "\*" defines current from 40A (GBPC40x/ GBPC40xM) to 50A (GBPC50x/GBPC50xM),  
"x" defines voltage from 50V(GBPC\*005/ GBPC\*005M) to 1000V(GBPC\*10/GBPC\*10M)

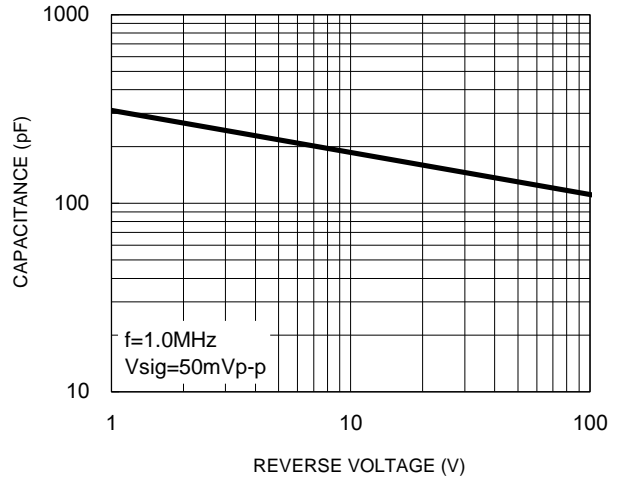
**CHARACTERISTICS CURVES**

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

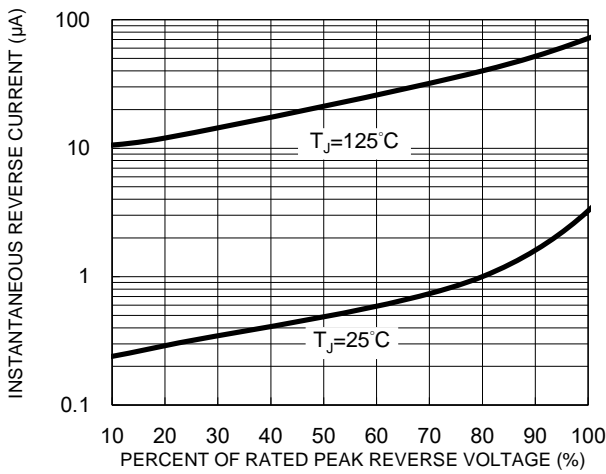
**Fig.1 Forward Current Derating Curve**



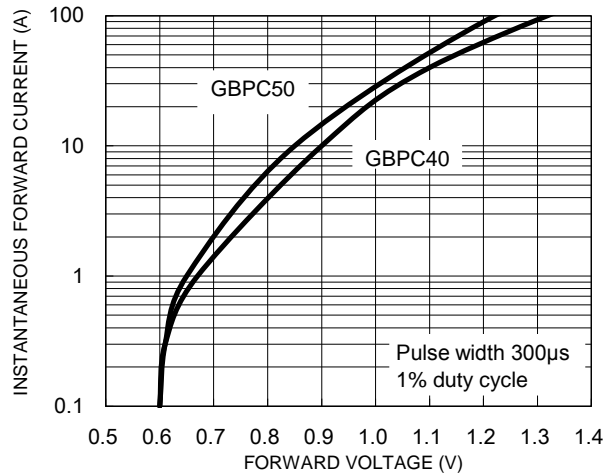
**Fig.2 Typical Junction Capacitance**



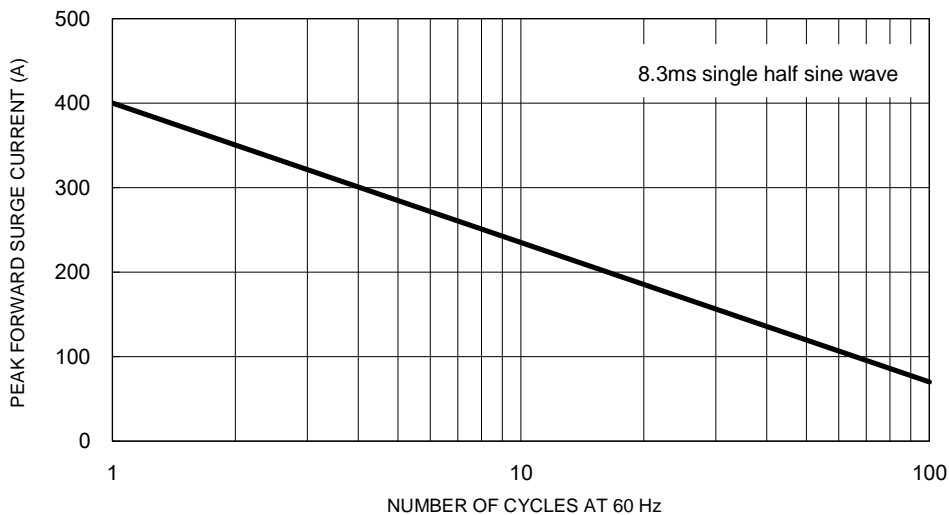
**Fig.3 Typical Reverse Characteristics**



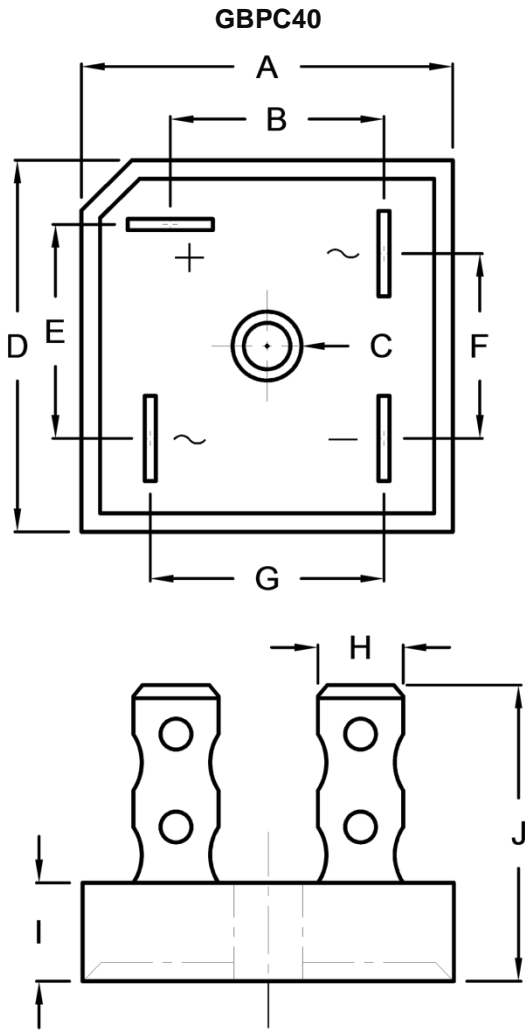
**Fig.4 Typical Forward Characteristics**



**Fig.5 Maximum Non-Repetitive Forward Surge Current**



**PACKAGE OUTLINE DIMENSIONS**



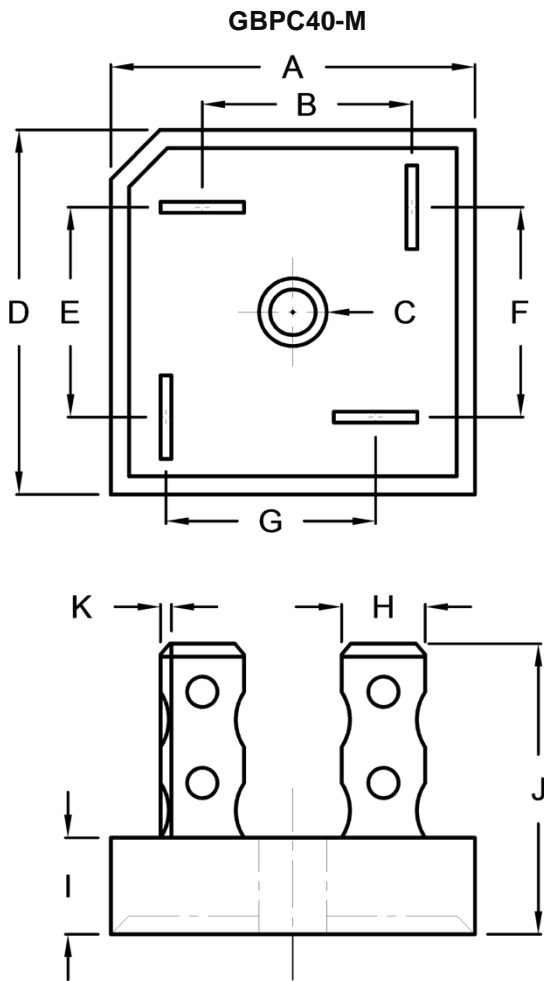
DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	28.50	29.00	1.122	1.142
B	15.50	17.60	0.610	0.693
C	5.08	5.59	0.200	0.220
D	28.50	29.00	1.122	1.142
E	15.50	17.60	0.610	0.693
F	13.30	15.30	0.524	0.602
G	17.10	19.10	0.673	0.752
H	6.60 (TYP.)		0.260 (TYP.)	
I	7.36	7.87	0.290	0.310
J	21.26	24.57	0.837	0.967

**MARKING DIAGRAM**



P/N = Marking Code  
 YWW = Date Code  
 F = Factory Code

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J	21.26	24.57	0.837	0.967
K	0.76	0.86	0.030	0.034

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