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

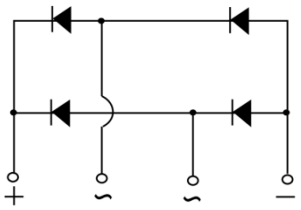
- Case: GBPC40
  GBPC40-M: Terminal cathode parallel to anode
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Mounting torque: 20 in-lbs maximum
- Polarity: As marked
- Weight: 17.30g (approximately)

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

Pb-Free RoHS COMPLIANT

GBPC40

GBPC40-M



ABSOLUTE MAXIMUM RATINGS (T_A = 25°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		50							A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load		I_{FSM}	400							A
Rating for fusing (t<8.3ms)		I^2t	664							A^2s
Junction temperature		T_J	- 55 to +150							°C
Storage temperature		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°C unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode[1]	GBPC40	I_F = 20A, T_J = 25°C	V_F	-	1.1	V
	GBPC50	I_F = 25A, T_J = 25°C		-	1.1	V
Reverse current @ rated V_R per diode[2]		T_J = 25°C	I_R	-	10	μA

Notes:

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

ORDERING INFORMATION

ORDERING CODE[1]	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°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

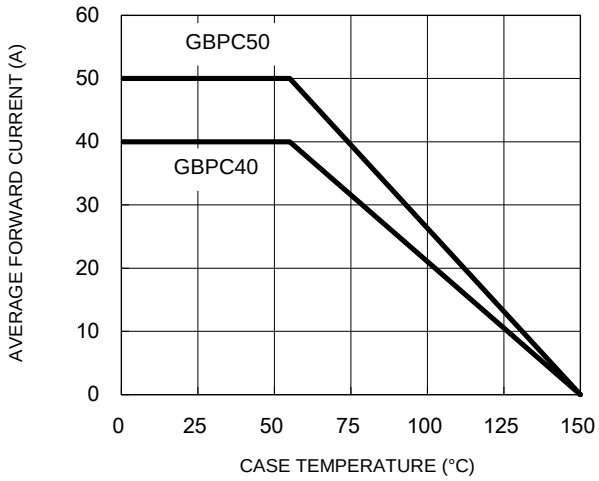


Fig.2 Typical Junction Capacitance

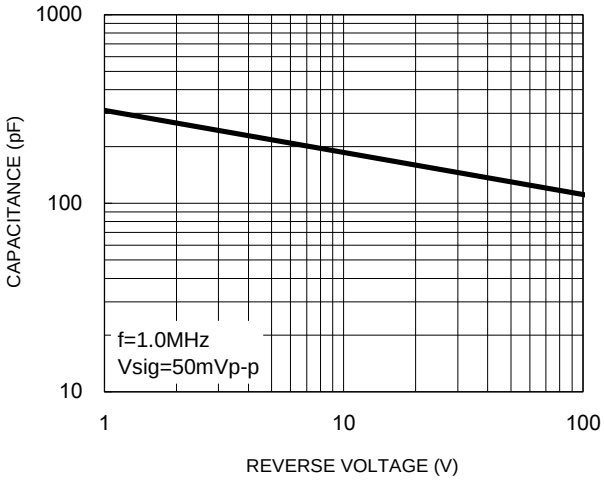


Fig.3 Typical Reverse Characteristics

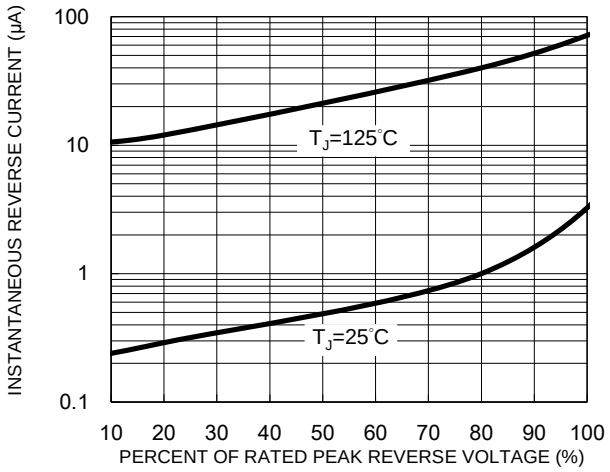


Fig.4 Typical Forward Characteristics

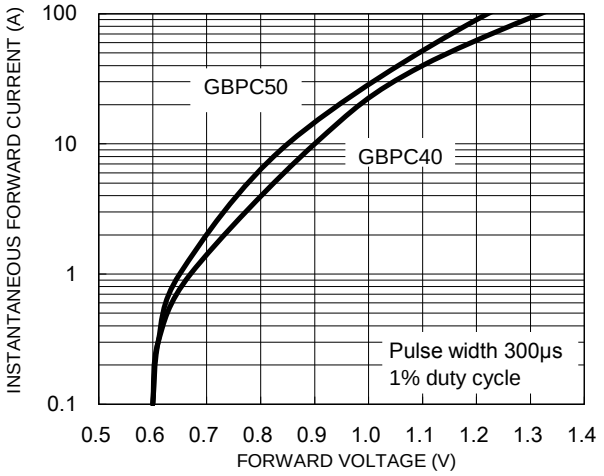
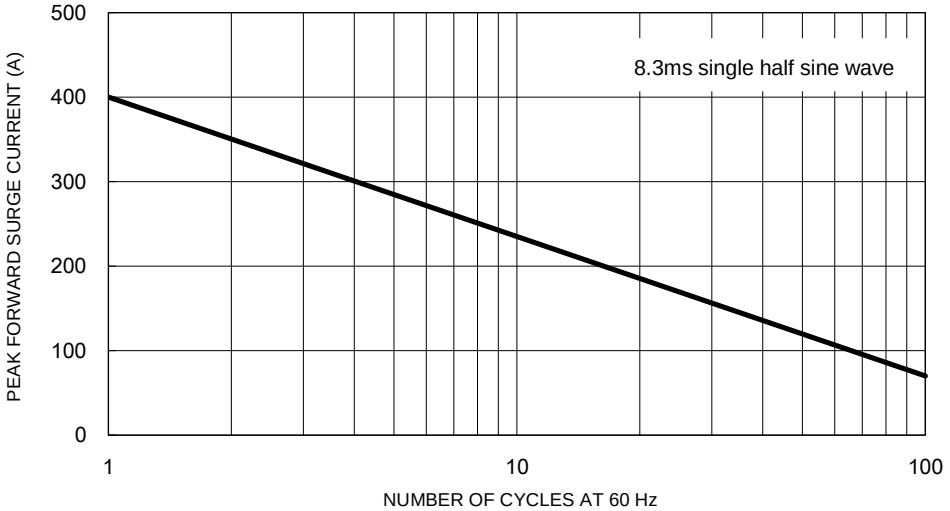
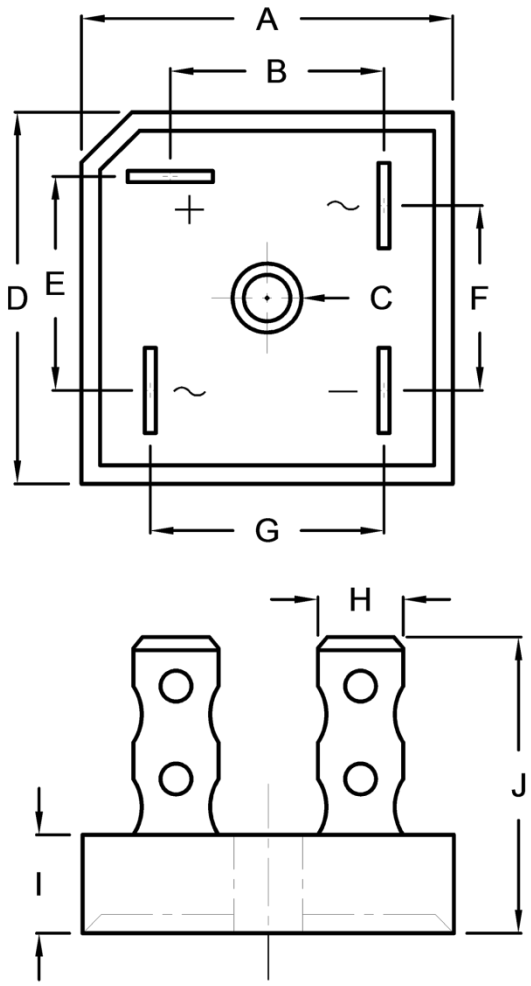


Fig.5 Maximum Non-Repetitive Forward Surge Current



PACKAGE OUTLINE DIMENSIONS

GBPC40



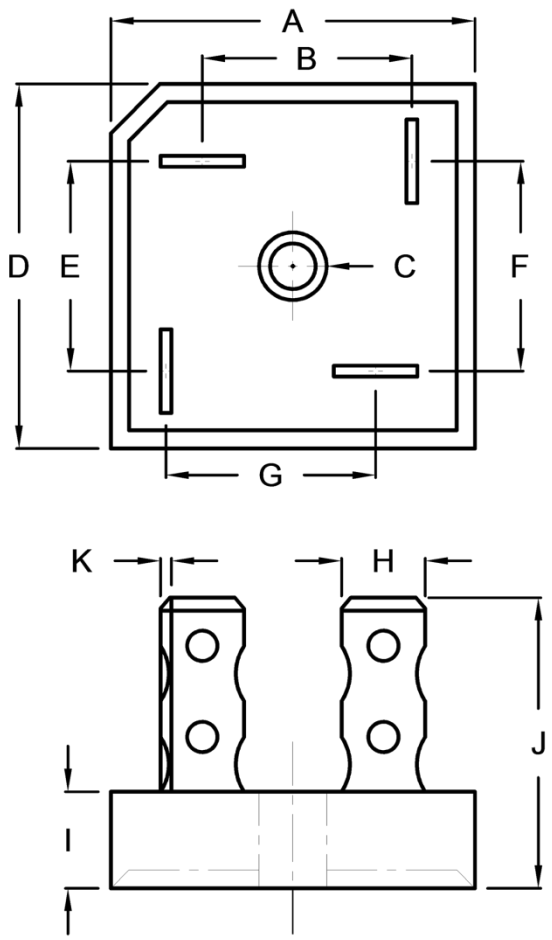
DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	28.50	29.00	1.122	1.142
B	15.50	17.60	0.610	0.693
C	5.08	5.59	0.200	0.220
D	28.50	29.00	1.122	1.142
E	15.50	17.60	0.610	0.693
F	13.30	15.30	0.524	0.602
G	17.10	19.10	0.673	0.752
H	6.60 (TYP.)		0.260 (TYP.)	
I	7.36	7.87	0.290	0.310
J	21.26	24.57	0.837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

MARKING DIAGRAM

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

PACKAGE OUTLINE DIMENSIONS

GBPC40-M



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G	15.50	17.60	0.610	0.693
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
K	0.76	0.86	0.030	0.034

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