

## 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

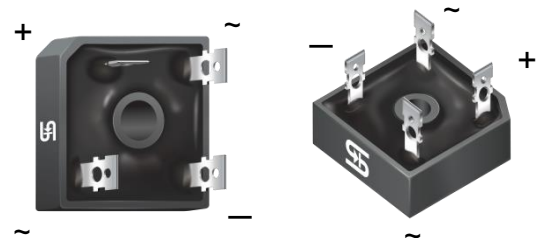
### APPLICATIONS

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

### MECHANICAL DATA

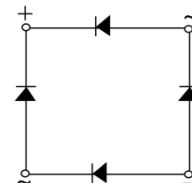
- Case: GBPC40  
GBPC40-M: Terminal cathode parallel to anode
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Mounting torque: 20 in-lbs maximum
- Polarity: As marked
- Weight: 17.30g (approximately)

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	GBPC40, 50							UNIT
		005	01	02	04	06	08	10	
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	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 ( $t < 8.3\text{ms}$ )	$I^2t$	664							$\text{A}^2\text{s}$
Junction temperature	$T_J$	- 55 to +150							°C
Storage temperature	$T_{STG}$	- 55 to +150							°C

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

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)						
<b>PARAMETER</b>		<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>MAX</b>	<b>UNIT</b>
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	V
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  $PW = 30\text{ms}$

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

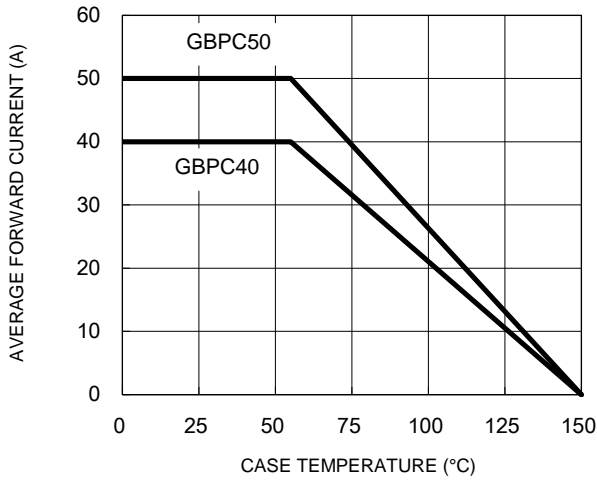
**Notes:**

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)

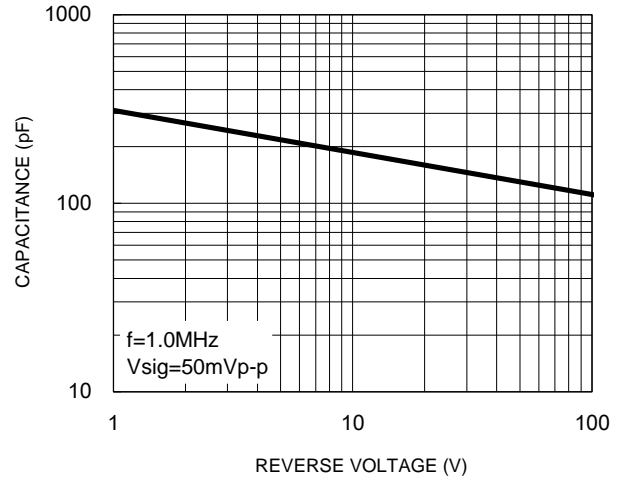
**CHARACTERISTICS CURVES**

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

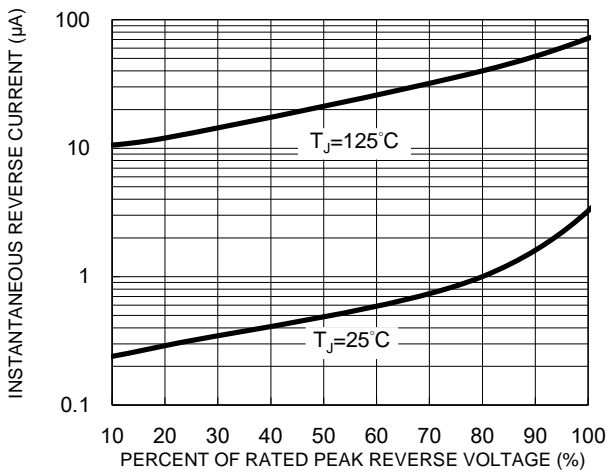
**Fig.1 Forward Current Derating Curve**



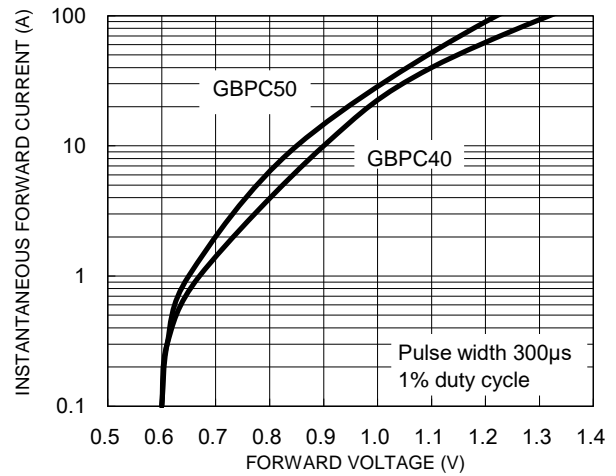
**Fig.2 Typical Junction Capacitance**



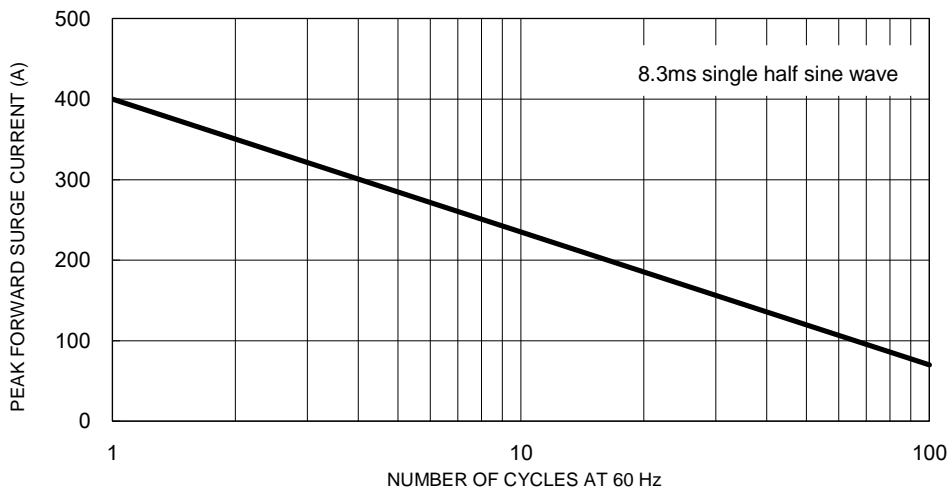
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**

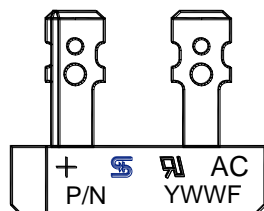
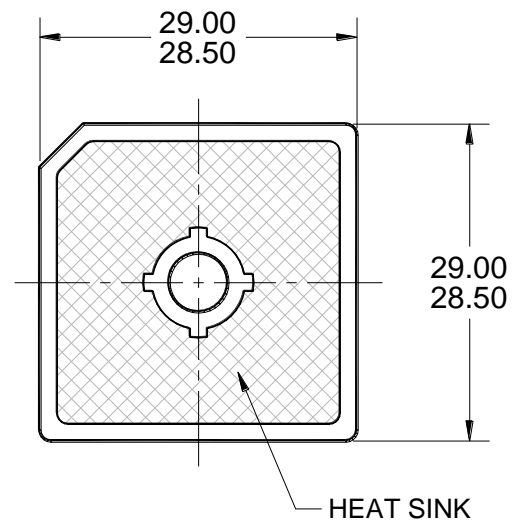
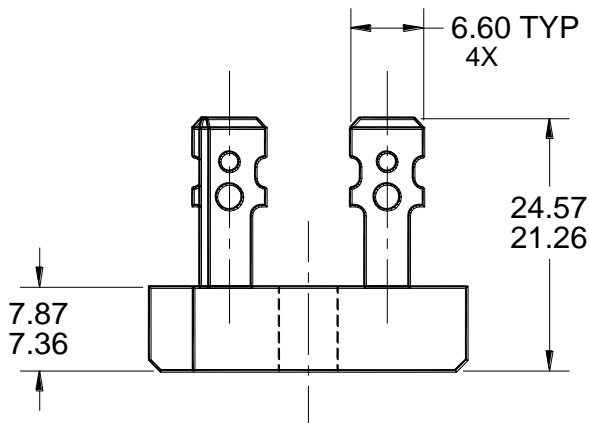
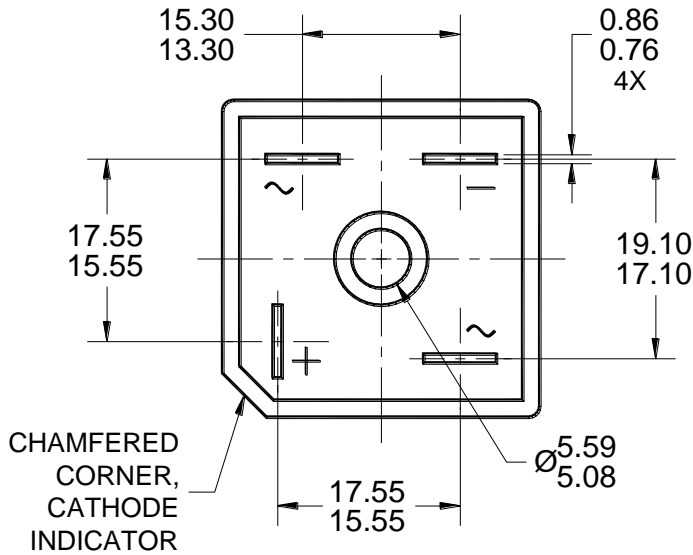


**Fig.5 Maximum Non-Repetitive Forward Surge Current**



**PACKAGE OUTLINE DIMENSIONS**

**GBPC40**



**MARKING DIAGRAM**

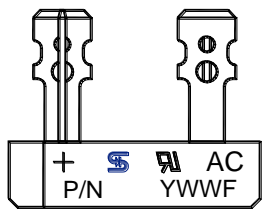
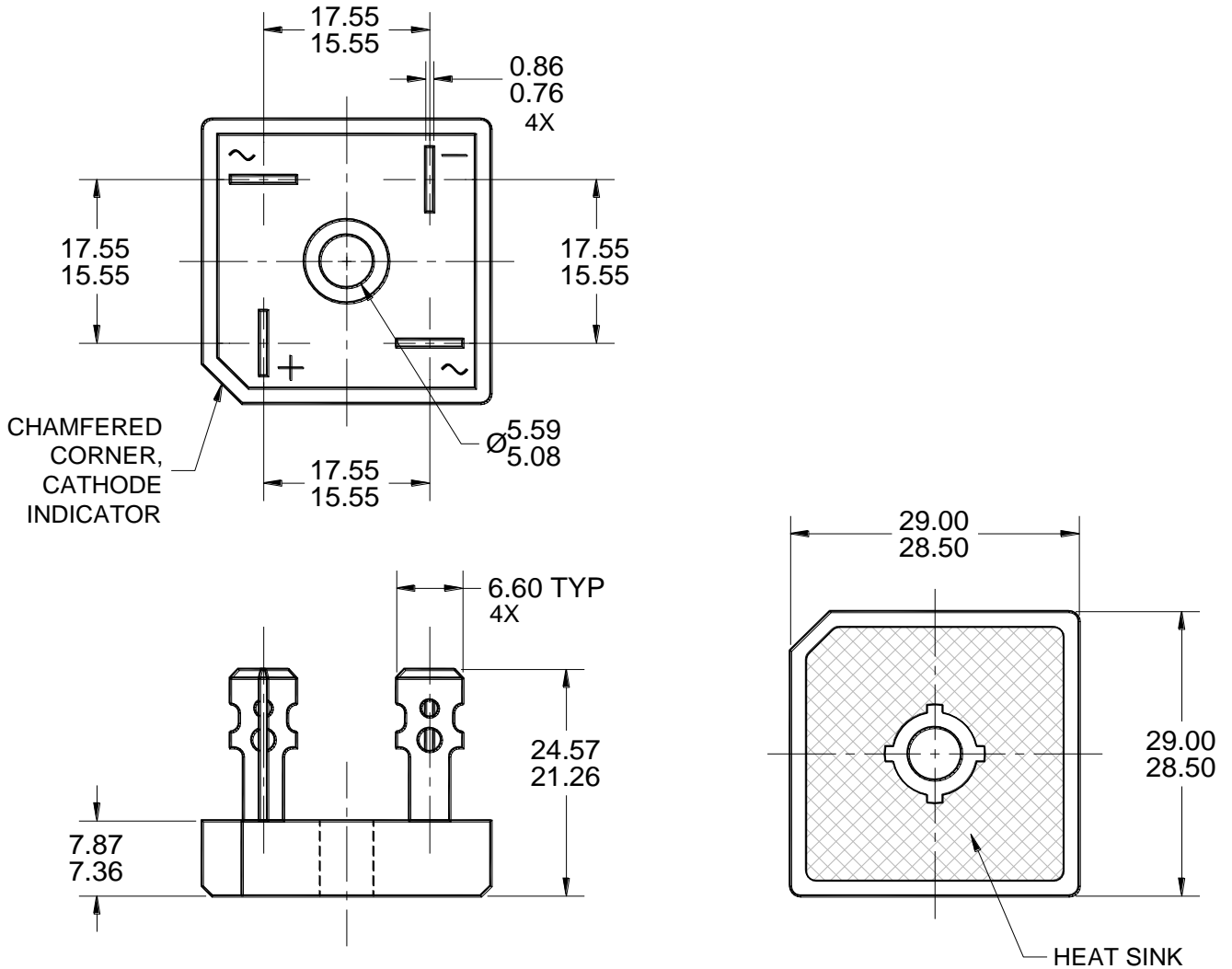
P/N = MARKING CODE  
YWW = DATE CODE  
F = FACTORY CODE

**NOTES: UNLESS OTHERWISE SPECIFIED**

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. DWG NO. REF: HQ2SD07-GBPC40-052 REV A.

**PACKAGE OUTLINE DIMENSIONS**

**GBPC40-M**



**MARKING DIAGRAM**

P/N = MARKING CODE  
 YWW = DATE CODE  
 F = FACTORY CODE

**NOTES: UNLESS OTHERWISE SPECIFIED**

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. DWG NO. REF: HQ2SD07-GBPC40M-053 REV A.