

## HBS402 THRU HBS410

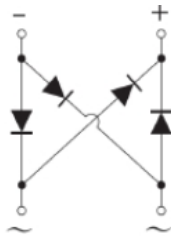
### Glass Passivated Single-Phase 4.0Amp Surface Mount Bridge Rectifier



#### Features

- Surface mount bridge, small package;
- Ideal for printed circuit boards;
- Glass passivated chip junction;
- High surge current capability;
- High heat dissipation capability;
- Low profile package;
- Low forward voltage drop;
- Plastic package has Underwrites Laboratory Flammability Classification 94V-0
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

#### Circuit Diagram



#### Mechanical Data

- Case: HBS;
- Epoxy meets UL-94V-0 Flammability rating;
- Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102;
- High temperature soldering guaranteed: Solder Reflow 260°C, 10seconds;
- Polarity: As marked on body;
- Marking: Type number;

#### Maximum Ratings and Electrical Characteristics @T<sub>A</sub>=25°C unless otherwise specified

Single Phase half wave 60Hz, resistive or inductive load. For capacitive load current derate by 20%.

Type Number	Symbol	HBS402	HBS404	HBS406	HBS408	HBS410	Units	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>DC</sub>	200	400	600	800	1000	V	
RMS Reverse Voltage	V <sub>RMS</sub>	140	280	420	560	700	V	
Maximum average forward rectified output current at @T <sub>A</sub> =25°C	I <sub>(AV)</sub>	4						A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method)	I <sub>FSM</sub>	130						A
Rating for fusing (t<8.3ms)	I <sup>2</sup> t	70						A <sup>2</sup> sec

**Electrical Characteristics @  $T_A=25^\circ\text{C}$  unless otherwise specified**

Type Number	Symbol	HBS402	HBS404	HBS406	HBS408	HBS410	Units
Maximum Forward Voltage (per element) @ $I_F=1\text{A}$ @ $I_F=2\text{A}$ @ $I_F=4\text{A}$	$V_F$			0.84 Typ. 0.89 Max. 0.88 Typ. 0.93 Max. 0.93 Typ. 0.98 Max.			V
Maximum Peak Reverse Current @ $T_A=25^\circ\text{C}$ At Rated DC Blocking Voltage @ $T_A=125^\circ\text{C}$	$I_R$			0.15 Typ. 5.0 Max. 20.0 Typ. 100 Max.			$\mu\text{A}$
Typical capacitance(Note 1)	$C_j$			33			pF

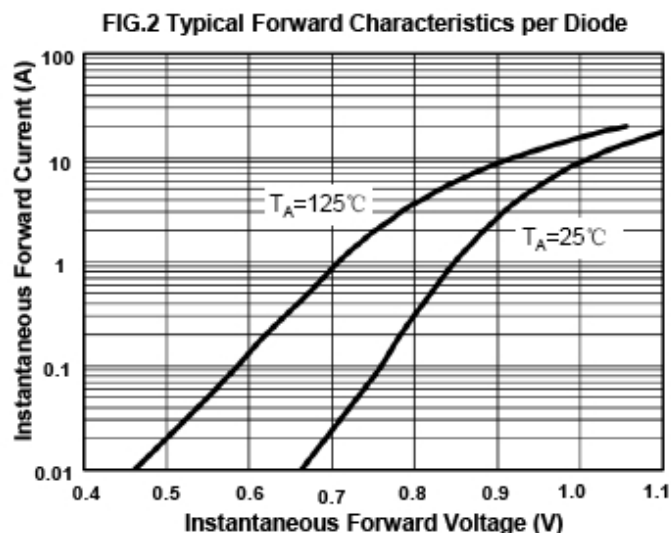
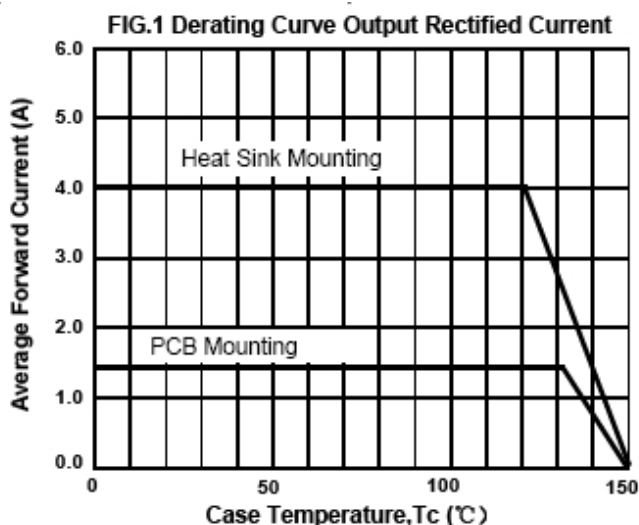
\* Pulse width < 300  $\mu\text{s}$ , duty cycle < 2%

**Thermal-Mechanical Specifications @  $T_A=25^\circ\text{C}$  unless otherwise specified**

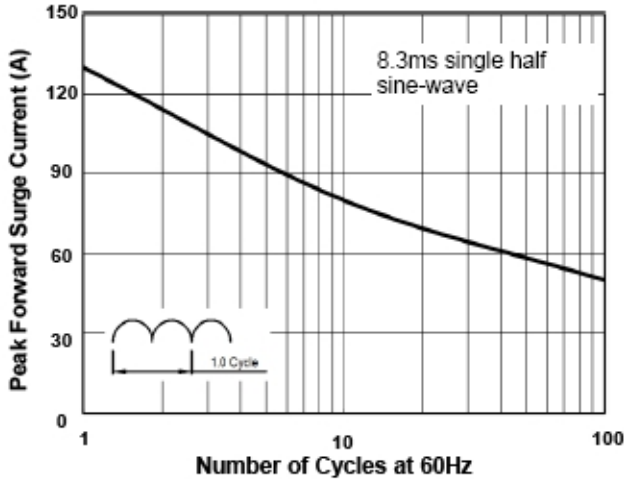
Type Number	Symbol	HBS402	HBS404	HBS406	HBS408	HBS410	Units
Typical Thermal Resistance	$R_{\theta JA}$ $R_{\theta JC}$ $R_{\theta JL}$			67.0 7.0 11.0			$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$			-55 to +150			$^\circ\text{C}$

Note: 1. Mounted at 1.0 MHz and applied reverse voltage of 5.0V DC.

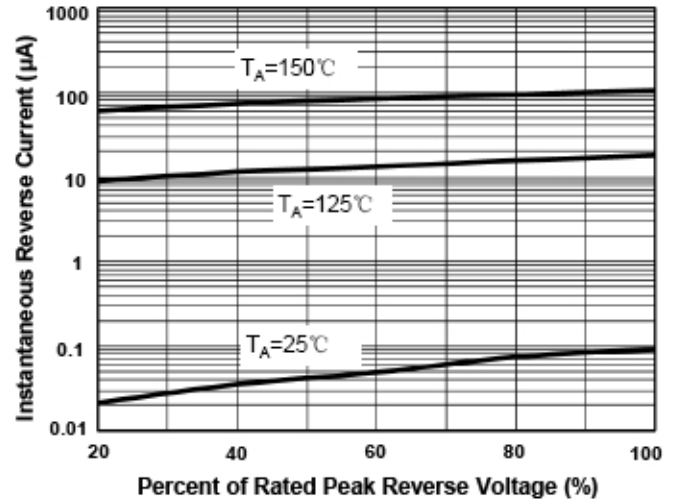
**Ratings and Characteristics Curves**



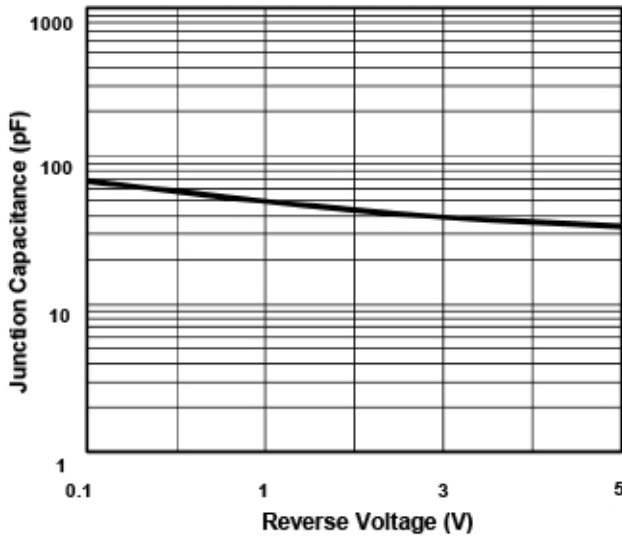
**FIG.3 Maximum Non-Repetitive Peak Forward Surge Current per Diode**



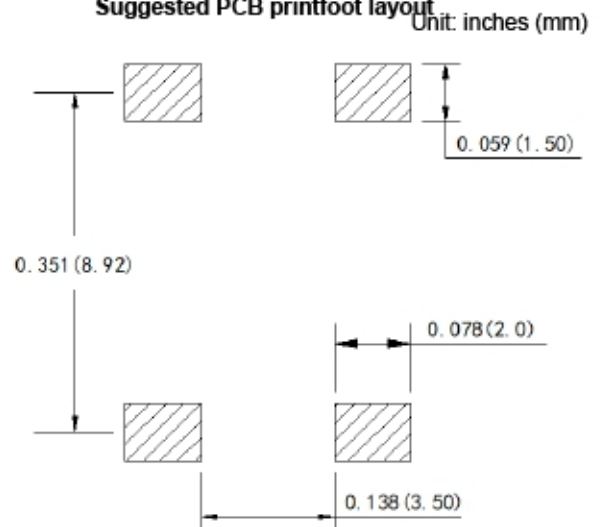
**FIG.4 Typical Reverse Characteristics per Diode**



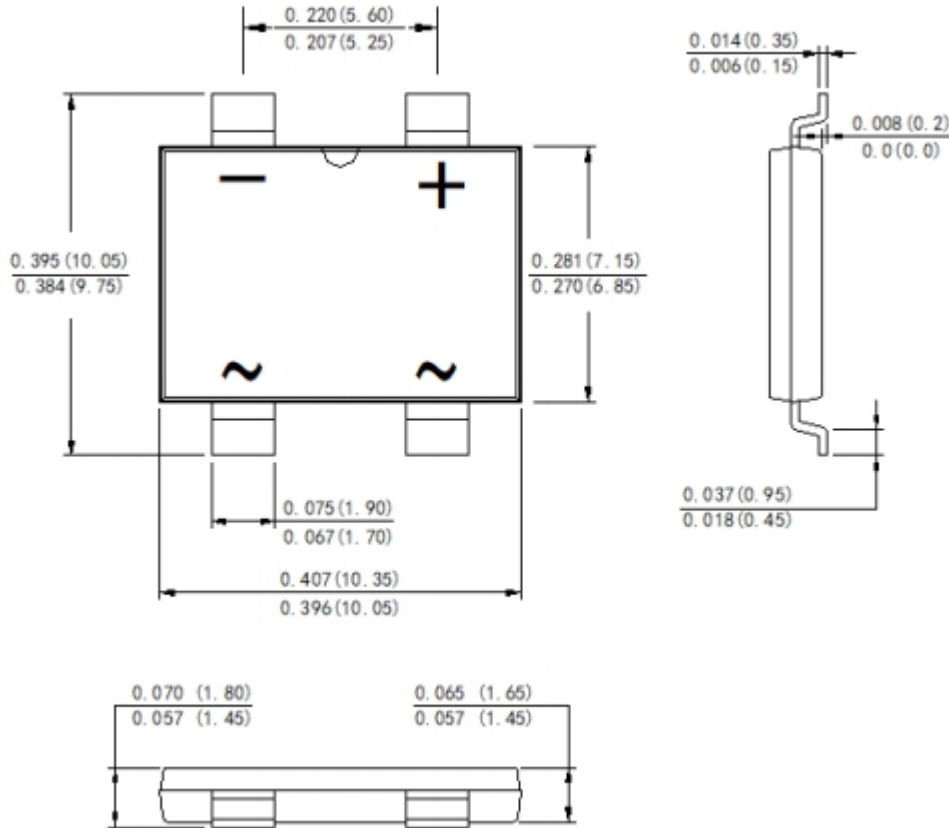
**FIG.5 Typical Junction Capacitance per Diode**



**Suggested PCB printfoot layout**



**Mechanical Dimensions HBS(Inches/Millimeters)**



**Ordering Information**

Device	Package	Plating	Shipping
HBS402 THRU HBS410	HBS (Pb-Free)	Pure Sn	2500pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**Marking Diagram**



Where XXXXX is YYWWL

HBS402 = Type Number  
YY = Year  
WW = Week  
L = Lot Number

**Cautions:** Molding resin  
Epoxy resin UL:94V-0

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