



# 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 forward current capability up to 4.0A;
- High surge current capability;
- High heat dissipation capability;
- Low profile package;
- Low forward voltage drop;
- Plastic package has Underwrites Laboratory Flammability Classification 94V-0;

## 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;

## Typical Applications

General purpose use in AC-to-DC bridge full wave rectification for Fast Charging, Switching Power Supply, USB PD, Adapter and 3-in-1 Power Board, etc.

## Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified. Single Phase, half wave, 60Hz, resistive or inductive load.

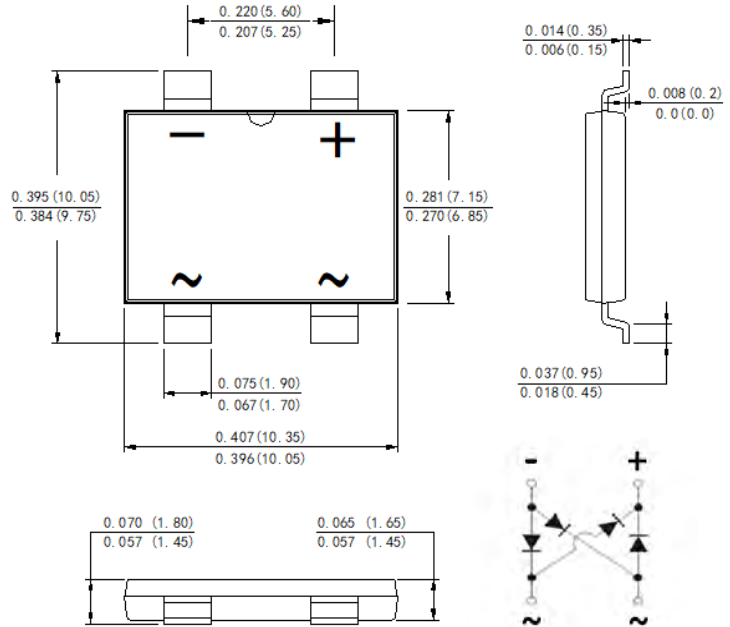
For capacitive load, derate current by 20%.

Parameter	Symbol	HBS402	HBS404	HBS406	HBS408	HBS410	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	200	400	600	800	1000	V
Maximum RMS voltage	$V_{RMS}$	140	280	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	200	400	600	800	1000	V
Maximum average forward rectified output current at $T_A=25^\circ\text{C}$	$I_{F(AV)}$	4.0					Amps
Non-Repetitive Peak forward surge current 8.3 ms single sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	130					Amps
Rating for fusing ( $t < 8.3\text{ms}$ )	$I^2t$	70					A <sup>2</sup> sec
Instantaneous forward voltage drop per diode	$V_F$	@IF=1.0A 0.84 Typ. 0.89 max.		@IF=2.0A 0.88 Typ. 0.93 max.			Volt
		@IF=4.0A 0.93 Typ. 0.98 max.					
Reverse Current at Rated DC Blocking Voltage	$I_R$	$T_A=25^\circ\text{C}$ 0.15 Typ. 5.0 max.		$T_A=125^\circ\text{C}$ 20.0 Typ. 100 max.			$\mu\text{A}$
Typical capacitance (note1)	$C_j$	33					pF
Typical thermal resistance	$R_{\theta J-A}$	67.0					$^\circ\text{C/W}$
	$R_{\theta J-C}$	7.0					
	$R_{\theta J-L}$	11.0					
Operating junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150					$^\circ\text{C}$

Note1: Measured at 1.0MHz and applied reverse voltage of 5.0V DC;



Case: HBS



Dimensions in inches and (millimeters)



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## Ratings and Characteristics Curves

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

FIG.1 Derating Curve Output Rectified Current

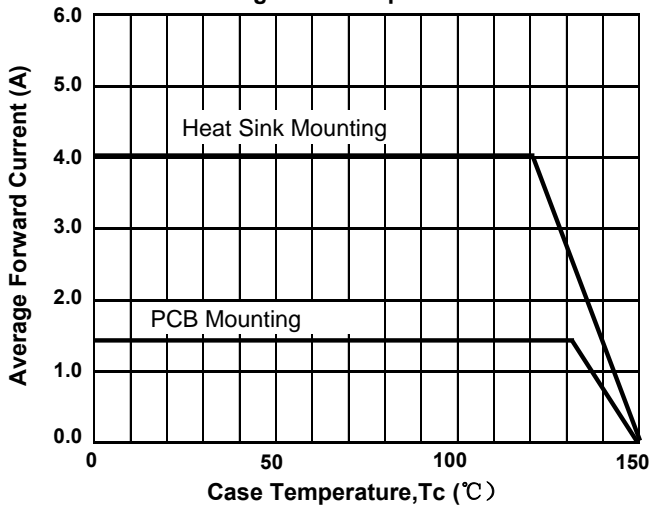


FIG.2 Typical Forward Characteristics per Diode

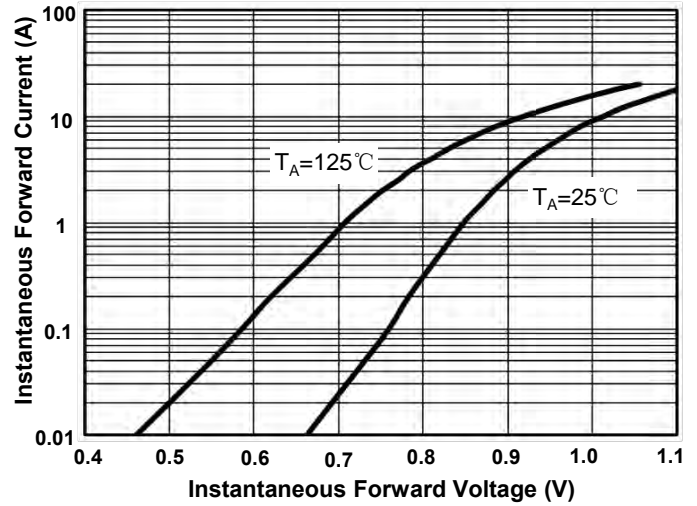


FIG.3 Maximum Non-Repetitive Peak Forward Surge Current per Diode

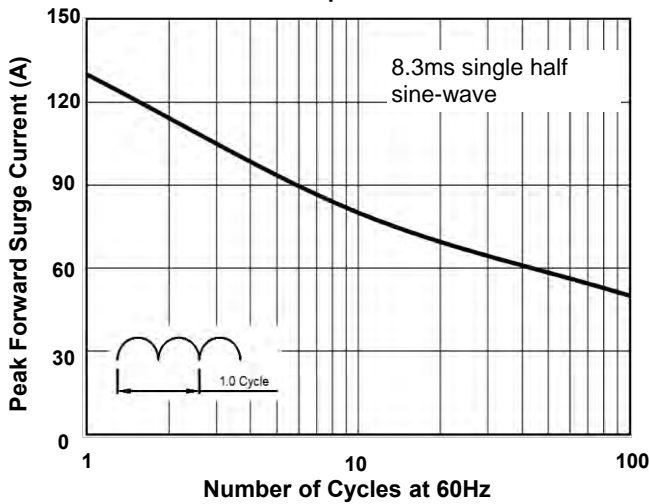


FIG.4 Typical Reverse Characteristics per Diode

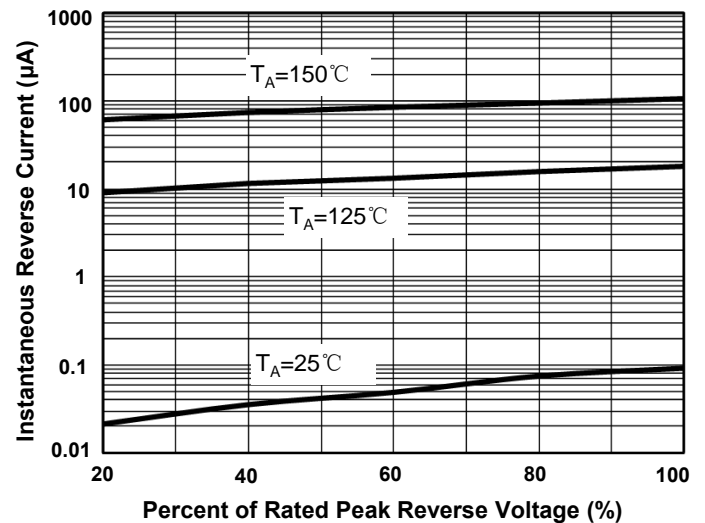
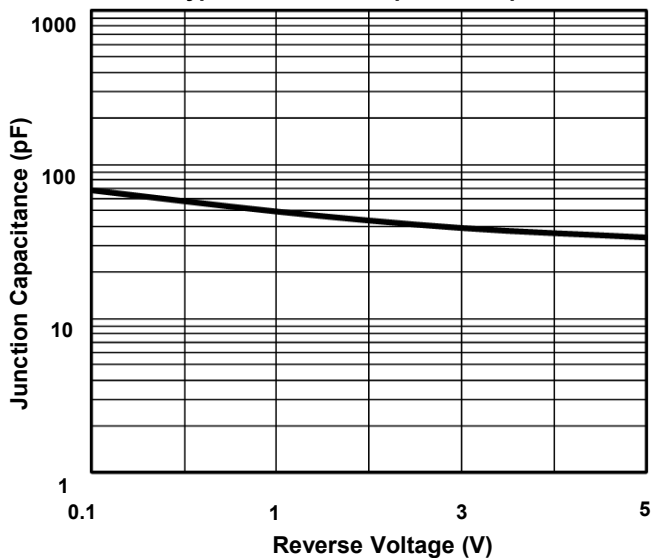
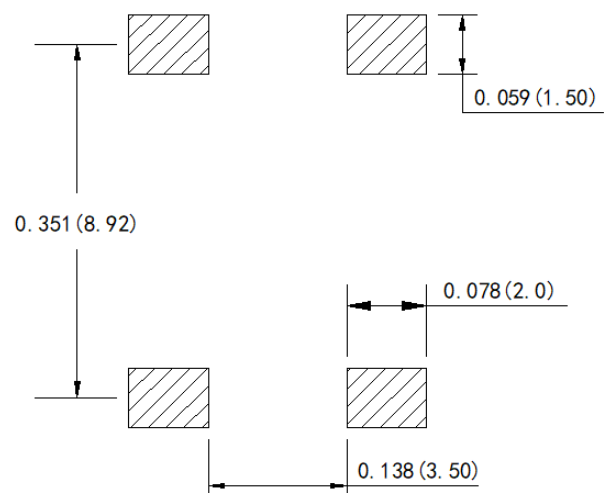


FIG.5 Typical Junction Capacitance per Diode



### Suggested PCB printfoot layout

Unit: inches (mm)





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