



# HBS302 THRU HBS310

Glass Passivated Single-Phase 3.0Amp Surface Mount Bridge Rectifier

## Features

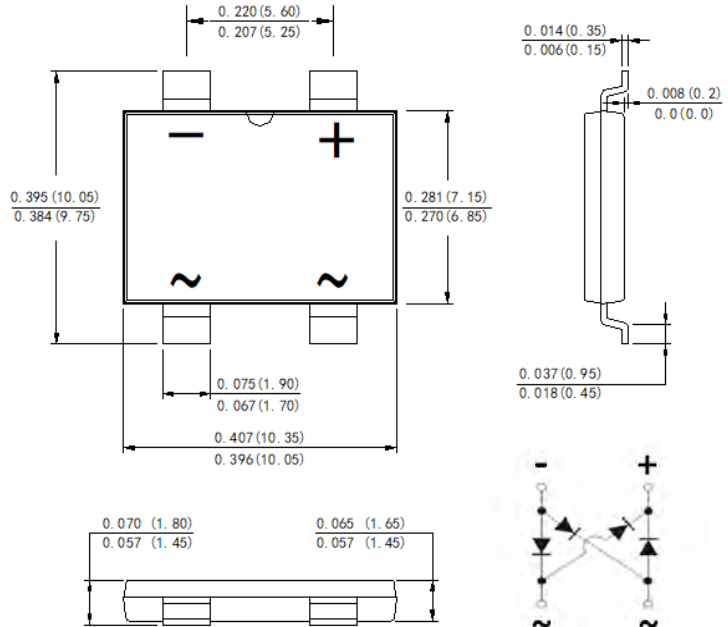
- Surface mount bridge, small package;
- Ideal for printed circuit boards;
- Glass passivated chip junction;
- High forward current capability up to 3.0A;
- High surge current capability;
- High heat dissipation capability;
- Low profile package;
- Low forward voltage drop;
- Plastic package has Underwrites Laboratory Flammability Classification 94V-0;

Case: HBS



## 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	HBS302	HBS304	HBS306	HBS308	HBS310	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 $T_A=25^\circ\text{C}$	$I_{F(AV)}$	3.0					Amps
Non-Repetitive Peak forward surge current 8.3 ms single sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	110					Amps
Rating for fusing ( $t < 8.3\text{ms}$ )	$I^2t$	50					A <sup>2</sup> sec
Instantaneous forward voltage drop per diode	$V_F$	@ $I_F=1.0\text{A}$	0.85 Typ.		0.90 max.		Volt
		@ $I_F=1.5\text{A}$	0.87 Typ.		0.92 max.		
		@ $I_F=3.0\text{A}$	0.91 Typ.		0.96 max.		
Reverse Current at Rated DC Blocking Voltage	$I_R$	$T_A=25^\circ\text{C}$	0.15 Typ.		5.0 max.		$\mu\text{A}$
		$T_A=125^\circ\text{C}$	20.0 Typ.		100 max.		
Typical capacitance (note1)	$C_j$	30					pF
Typical thermal resistance	$R_{\theta J-A}$	79.0					$^\circ\text{C/W}$
	$R_{\theta J-C}$	17.0					
	$R_{\theta J-L}$	13.0					
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;



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## Ratings and Characteristics Curves

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

FIG.1 Derating Curve Output Rectified Current

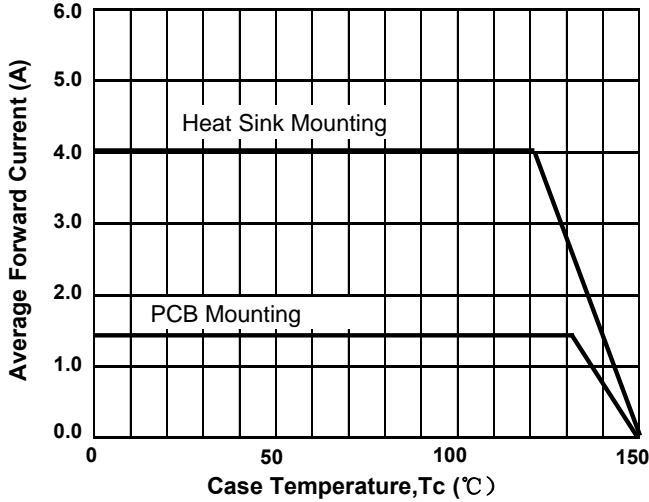


FIG.2 Typical Forward Characteristics per Diode

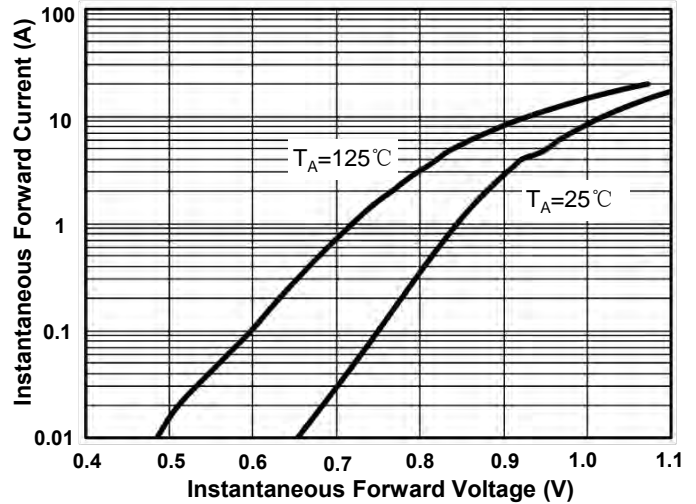


FIG.3 Maximum Non-Repetitive Peak Forward Surge Current per Diode

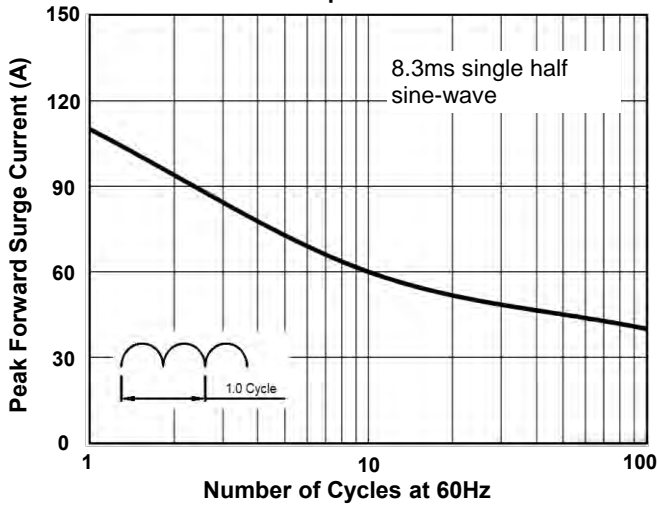


FIG.4 Typical Reverse Characteristics per Diode

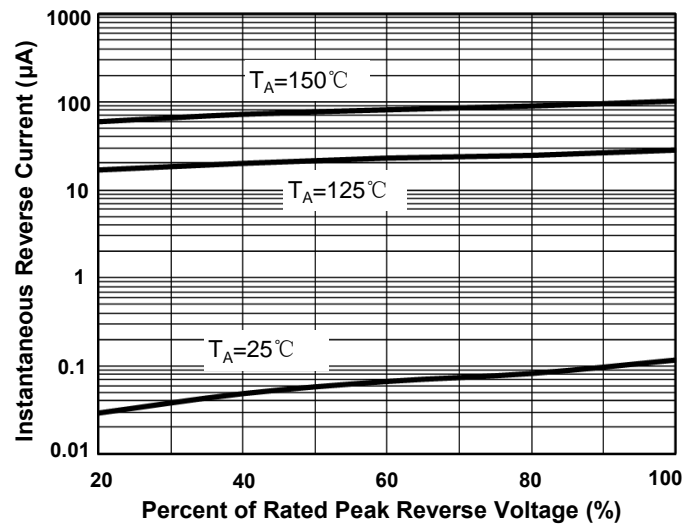
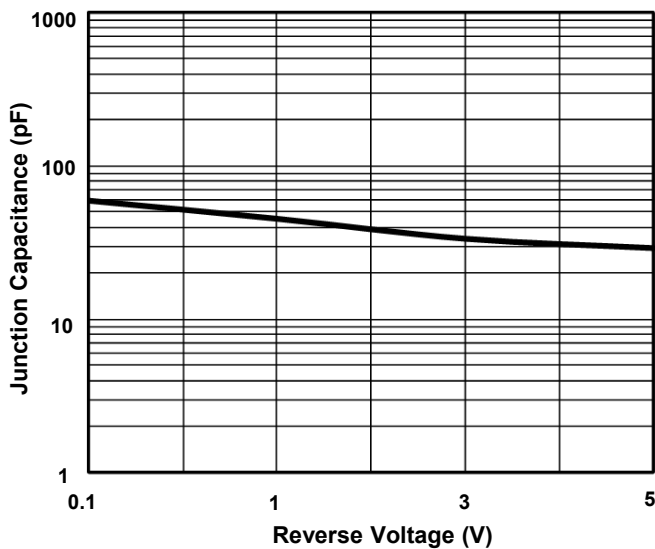
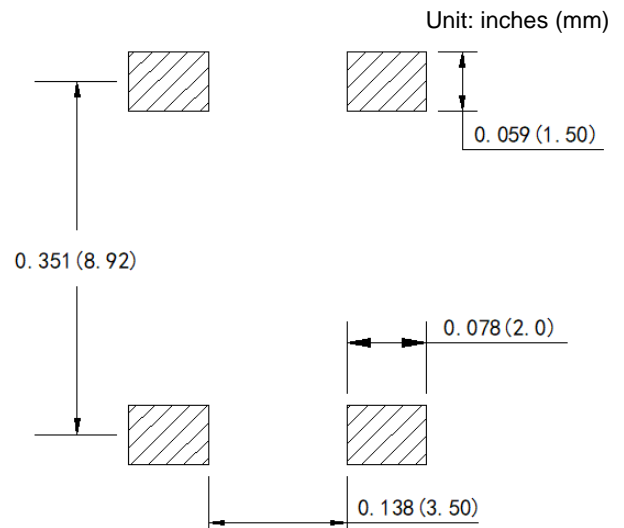


FIG.5 Typical Junction Capacitance per Diode



Suggested PCB printfoot layout





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