



HBS402 THRU HBS410

Glass Passivated Single-Phase 4.0Amp Surface Mount Bridge Rectifier

Features

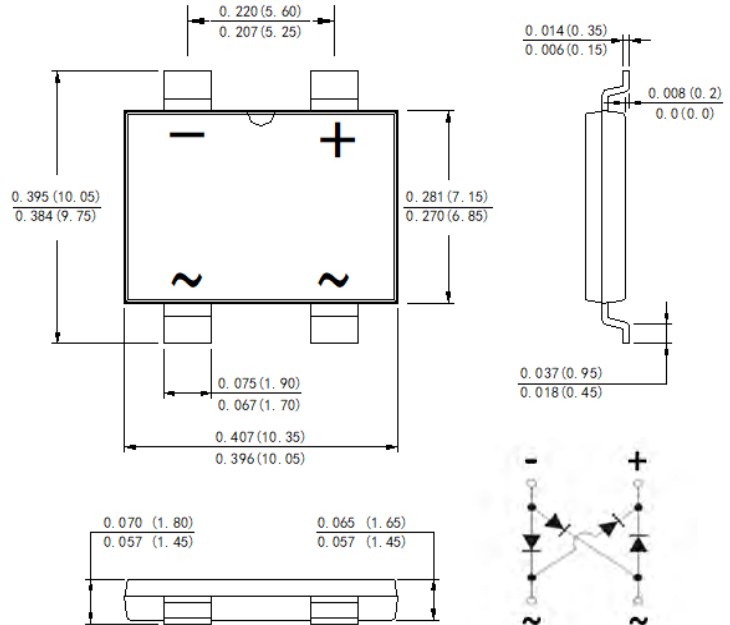
- Surface mount bridge, small package;
- Ideal for printed circuit boards;
- Glass passivated chip junction;
- High forward current capability up to 4.0A;
- High surge current capability;
- High heat dissipation capability;
- Low profile package;
- Low forward voltage drop;
- Plastic package has Underwrites Laboratory Flammability Classification 94V-0;

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;



Dimensions in inches and (millimeters)

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^2sec
Instantaneous forward voltage drop per diode	V_F	@ $I_F=1.0\text{A}$ 0.84 Typ. 0.89 max.		@ $I_F=2.0\text{A}$ 0.88 Typ. 0.93 max.			Volt
		@ $I_F=4.0\text{A}$ 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.			μA
Typical capacitance (note1)	C_j	33					pF
Typical thermal resistance	$R_{\theta J-A}$	67.0					$^\circ\text{C}/\text{W}$
	$R_{\theta J-C}$	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;



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Ratings and Characteristics Curves

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

FIG.1 Derating Curve Output Rectified Current

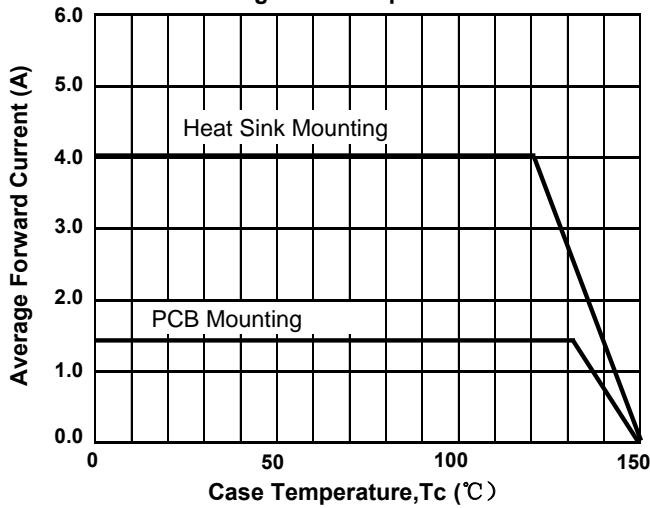


FIG.2 Typical Forward Characteristics per Diode

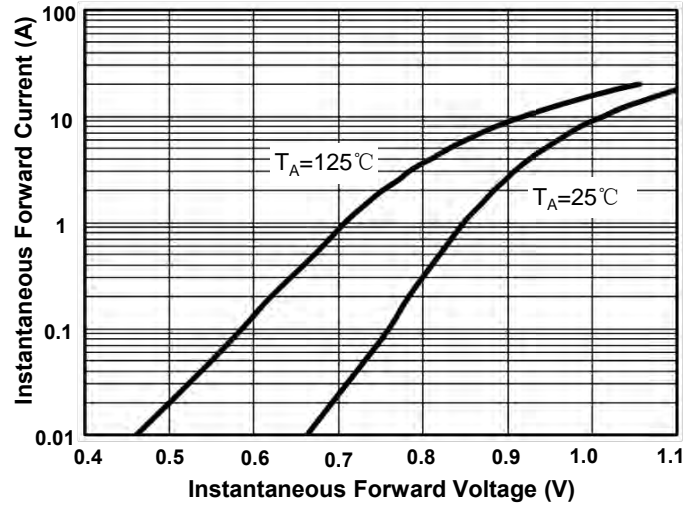


FIG.3 Maximum Non-Repetitive Peak Forward Surge Current per Diode

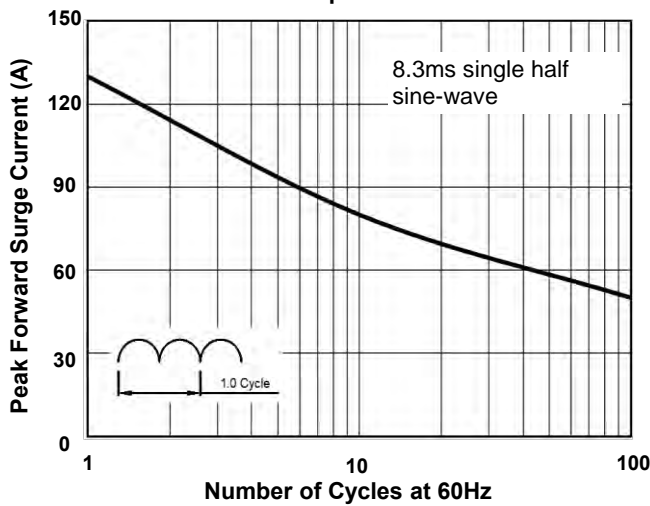


FIG.4 Typical Reverse Characteristics per Diode

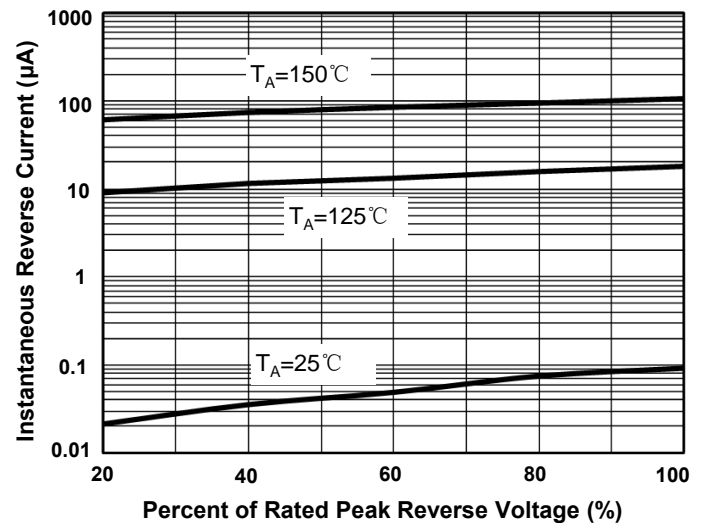
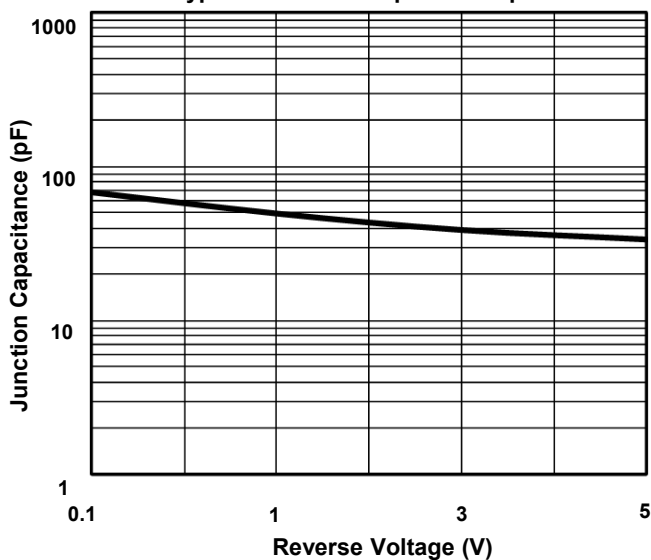
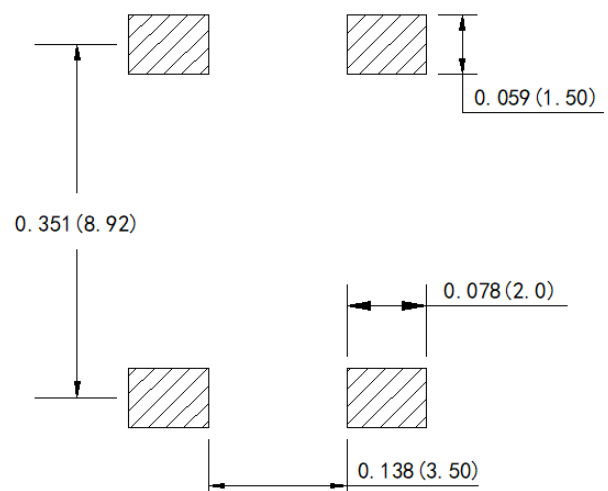


FIG.5 Typical Junction Capacitance per Diode



Suggested PCB printfoot layout

Unit: inches (mm)





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