



HBS502 - HBS510

Glass Passivated Single-Phase 5.0Amp 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 5.0A;
- High surge current capability;
- High heat dissipation capability;
- Low profile package;
- Low forward voltage drop;
- Plastic package has Underwrites Laboratory Flammability Classification 94V-0;

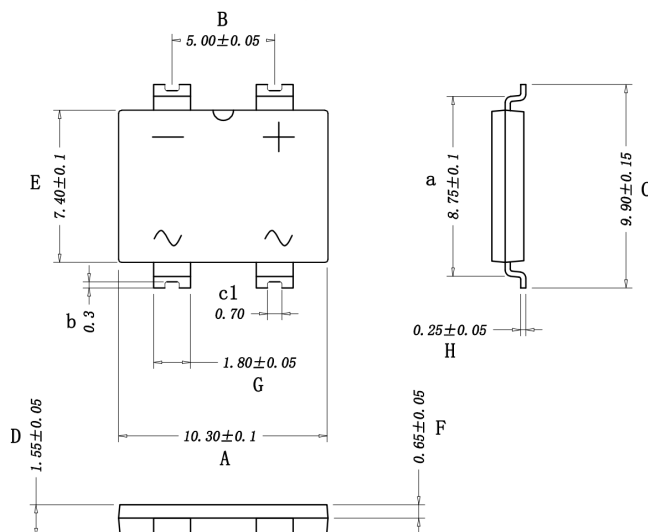
Mechanical Data

- 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.

Case: HBS



Dimensions in inches and (millimeters)

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	HBS502	HBS504	HBS506	HBS508	HBS510	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℃	I _{F(AV)}	5.0					Amps
Non-Repetitive Peak forward surge current 8.3 ms single sine-wave superimposed on rated load (JEDEC Method)	I _{FSM}	150					Amps
Rating for fusing (t<8.3ms)	I ² t	93					A ² sec
Instantaneous forward voltage drop per diode	V _F	0.83 Typ.		0.88 max.		V	
		0.88 Typ.		0.93 max.			
		0.92 Typ.		0.97 max.			
Reverse Current at Rated DC Blocking Voltage	I _R	0.15 Typ.		5.0 max.		μA	
		20.0 Typ.		100 max.			
Typical capacitance (note1)	C _j	38					pF
Typical thermal resistance	R _{θJ-A}	69.0					℃/W
	R _{θJ-C}	12.0					
	R _{θJ-L}	12.0					
Operating junction and Storage Temperature Range	T _J , T _{STG}	-55 to +150					℃

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

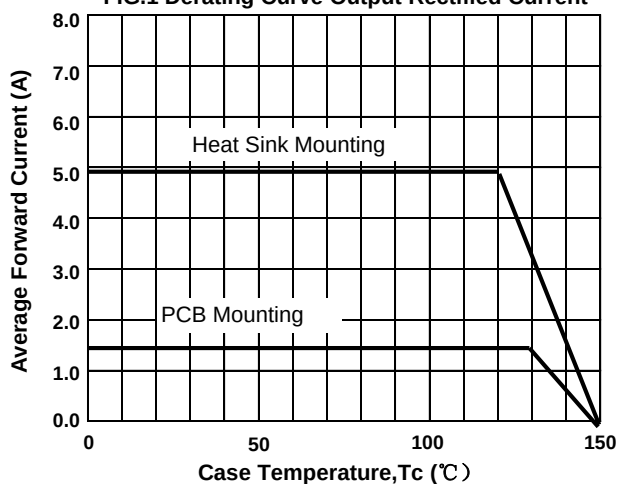


FIG.2 Typical Forward Characteristics per Diode

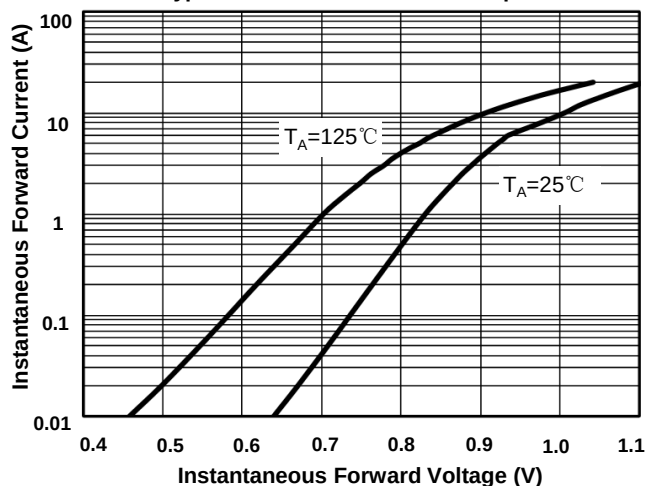


FIG.3 Maximum Non-Repetitive Peak Forward Surge Current per Diode

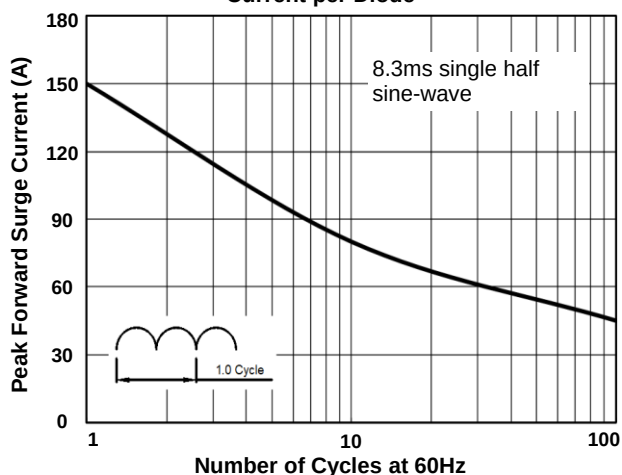


FIG.4 Typical Reverse Characteristics per Diode

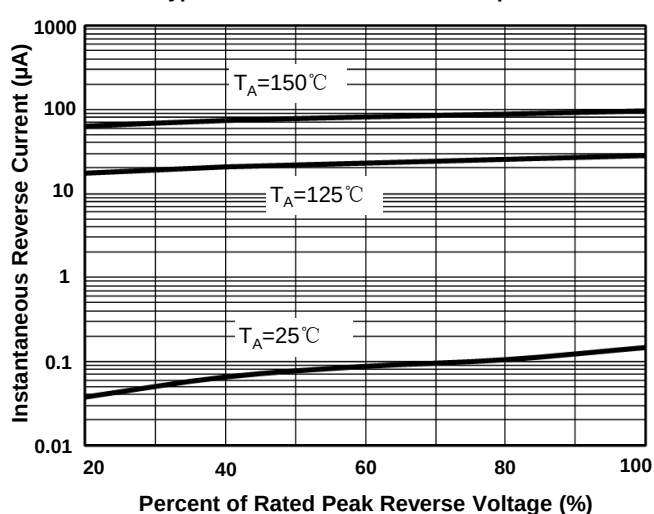
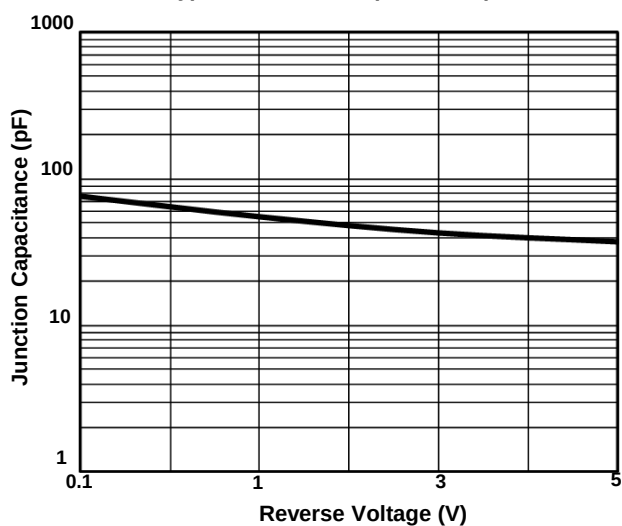


FIG.5 Typical Junction Capacitance per Diode



Suggested PCB printfoot layout

