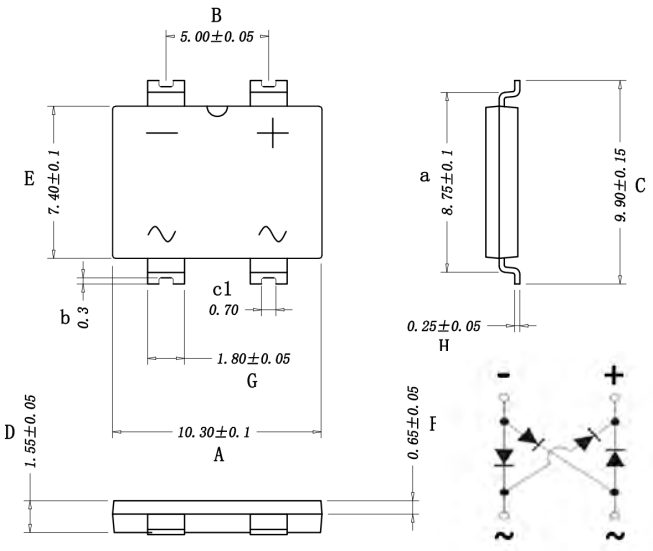
HBS502 - HBS510

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;

Case：HBS



Dimensions in inches and (milimeters)

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℃,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℃ 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}	120					Amps
Rating for fusing (t<8.3ms)	I^2t	59					A^2sec
Instantaneous forward voltage drop per diode @IF=2.5A	V_F	1.1					Volt
Reverse Current at Rated DC Blocking Voltage T_A=25℃ T_A=125℃	I_R	0.15 Typ. 5.0 max. 20.0 Typ. 100 max.					μA
Typical capacitance （note1)	C_j	38					pF
Typical thermal resistance	$R_{\Theta J-A}$ $R_{\Theta J-C}$ $R_{\Theta J-L}$	69.0 12.0 12.0					℃/W
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;

Ratings and Characteristics Curves

(TA = 25℃ unless otherwise noted)

FIG.1 Derating Curve Output Rectified Current

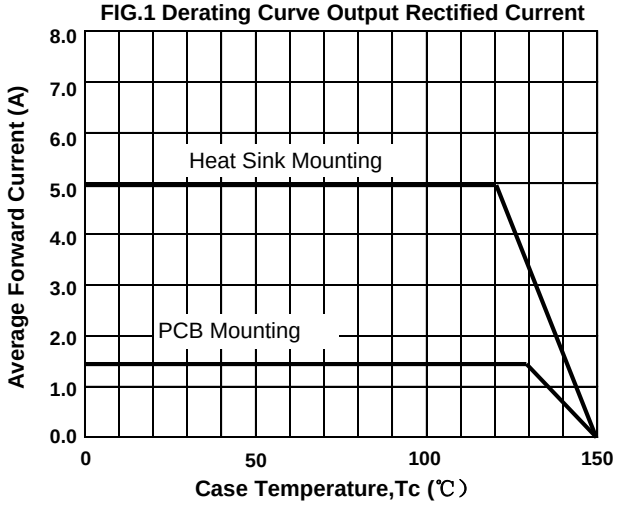


FIG.2 Typical Forward Characteristics per Diode

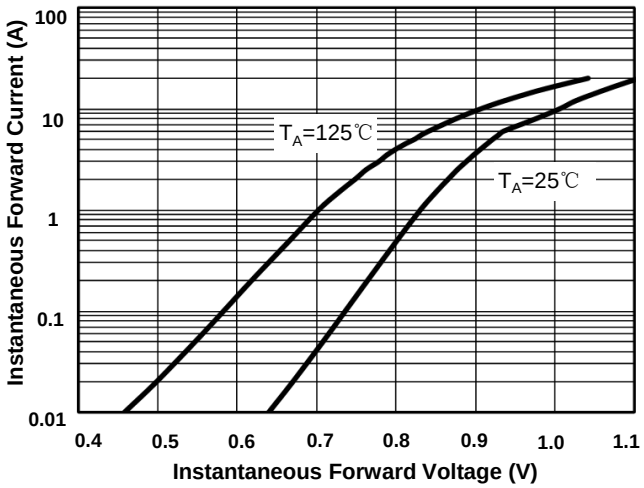


FIG.3 Maximum Non-Repetitive Peak Forward Surge Current per Diode

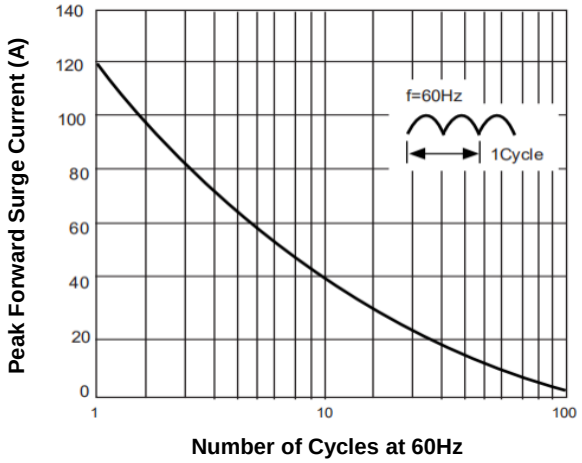


FIG.4 Typical Reverse Characteristics per Diode

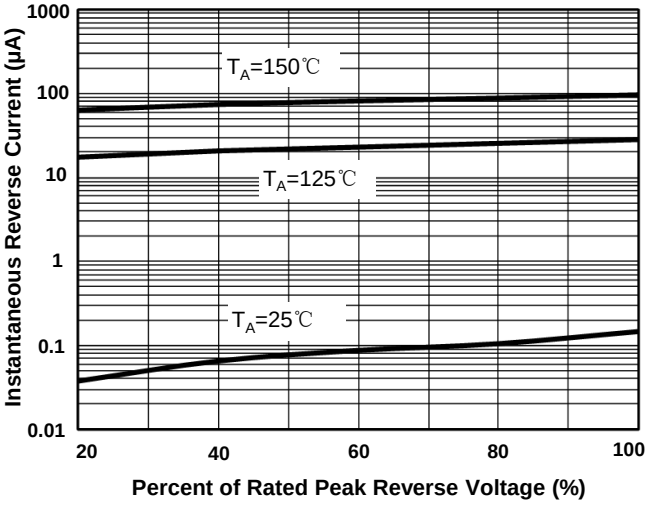
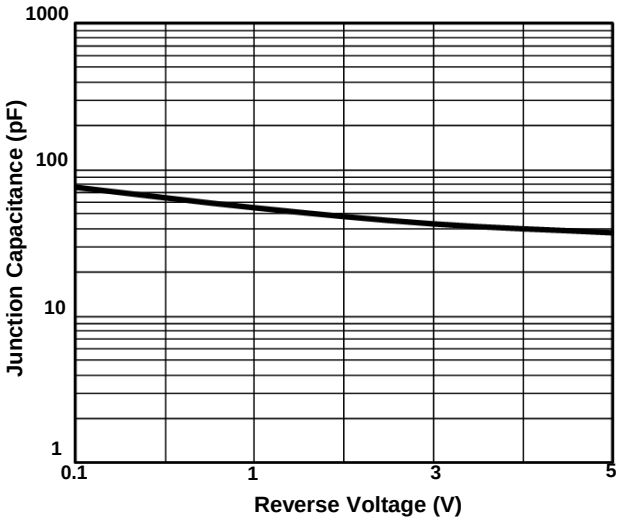


FIG.5 Typical Junction Capacitance per Diode



Suggested PCB printfoot layout

