



HBS402 THRU HBS410

Glass Passivated Single-Phase 4.0Amp Surface Mount Bridge Rectifier

Features

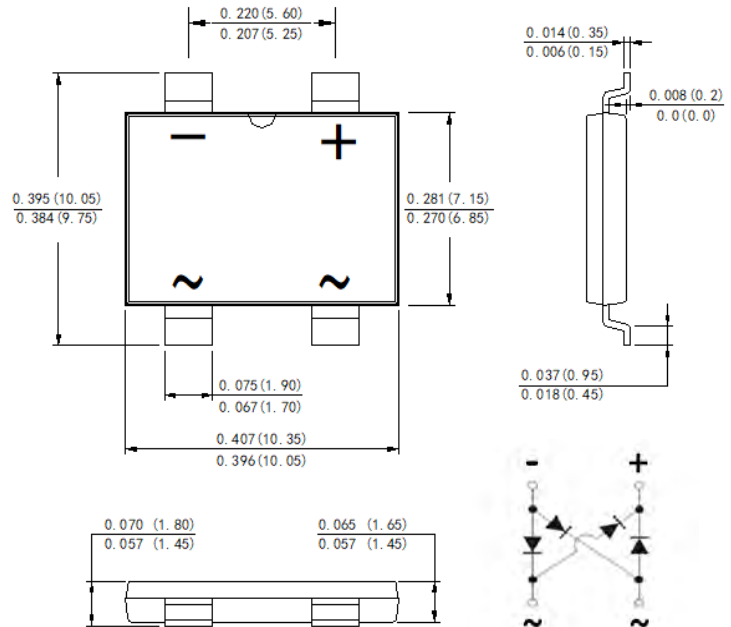
- Surface mount bridge, small package;
- Ideal for printed circuit boards;
- Glass passivated chip junction;
- High forward current capability up to 4.0A;
- High surge current capability;
- High heat dissipation capability;
- Low profile package;
- Low forward voltage drop;
- Plastic package has Underwrites 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 ² sec |
| 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 | | | | | $^\circ\text{C/W}$ |
| | $R_{\theta J-C}$ | 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

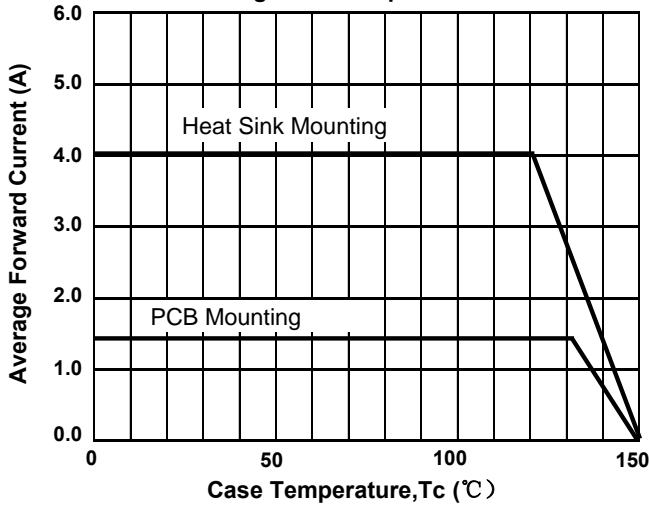


FIG.2 Typical Forward Characteristics per Diode

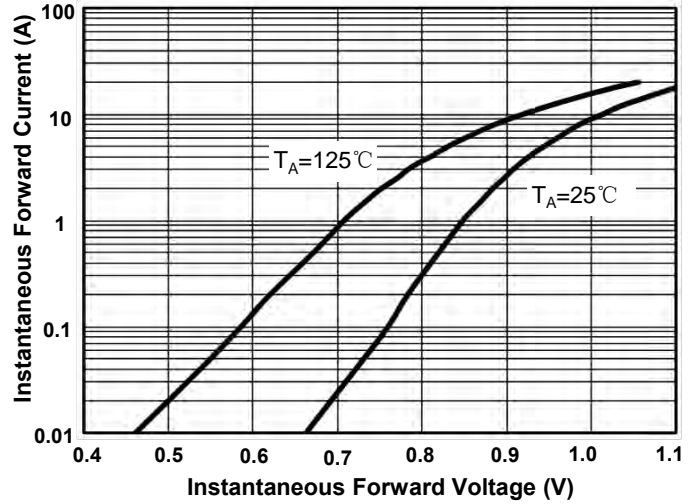


FIG.3 Maximum Non-Repetitive Peak Forward Surge Current per Diode

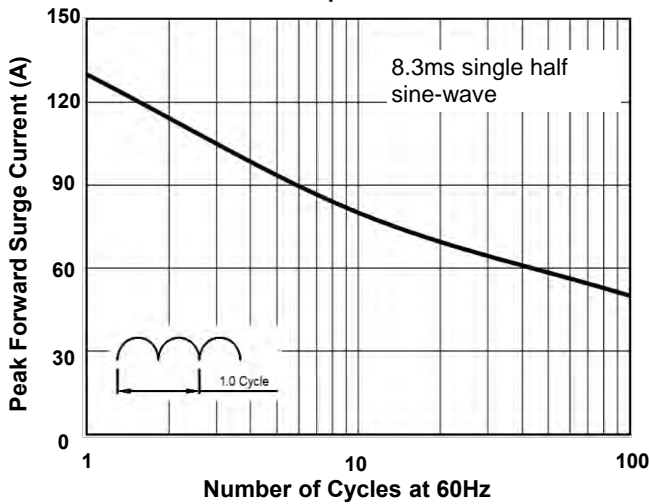


FIG.4 Typical Reverse Characteristics per Diode

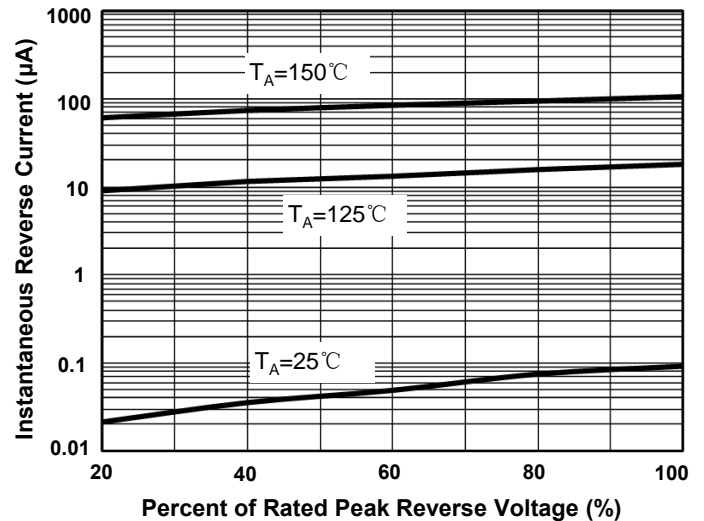
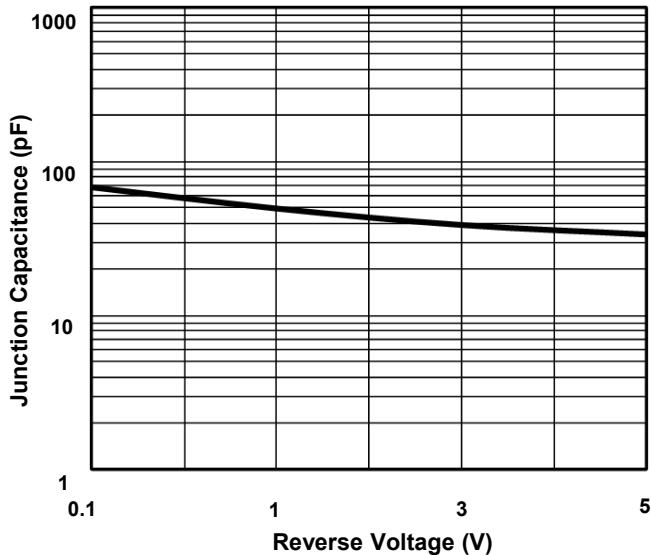
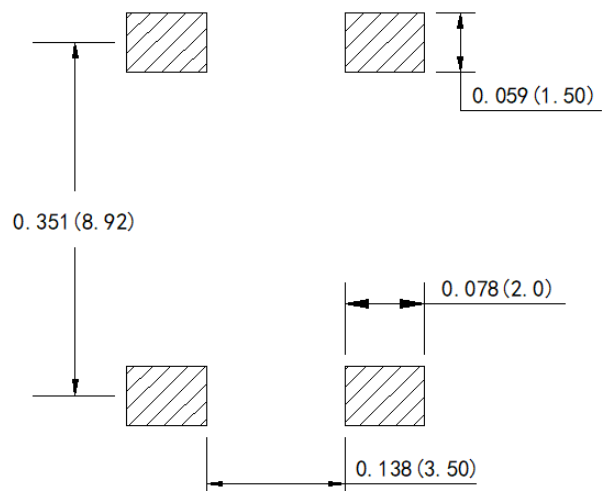


FIG.5 Typical Junction Capacitance per Diode



Suggested PCB printfoot layout

Unit: inches (mm)





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