# HBS402 - 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;

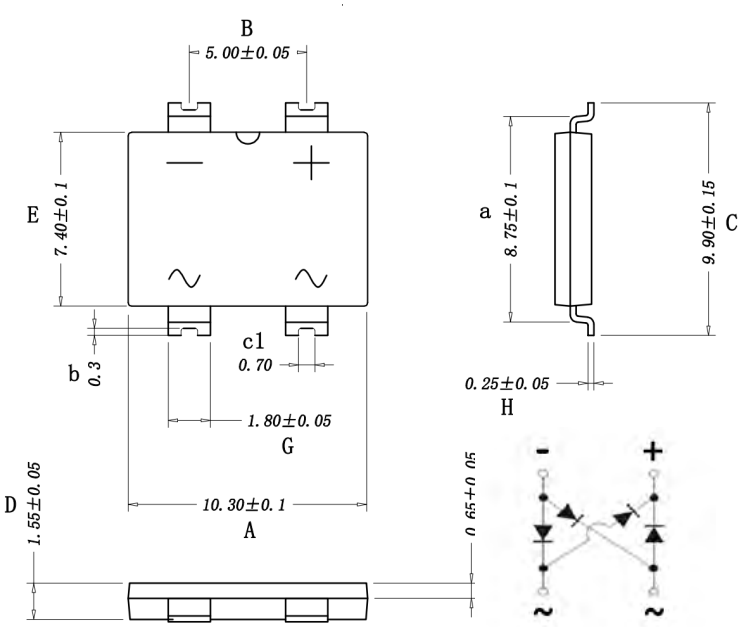
## Mechanical Data

- 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.

Case：HBS




Dimensions in inches and (milimeters)

## 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 | 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℃ | $I_{F(AV)}$ | 4.0 | | | | | Amps |
| Non-Repetitive Peak forward surge current 8.3 ms single sine-wave superimposed on rated load (JEDEC Method) | | $I_{FSM}$ | 100 | | | | | Amps |
| Rating for fusing (t<8.3ms) | | $I^2t$ | 41.5 | | | | | $A^2$sec |
| Instantaneous forward voltage drop per diode | @IF=2.0A | $V_F$ | 1.10 | | | | | Volt |
| Reverse Current at Rated DC Blocking Voltage | $T_A$=25℃<br>$T_A$=125℃ | $I_R$ | 0.15 Typ. 5.0 max.<br>20.0 Typ. 100 max. | | | | | μA |
| Typical capacitance （note1) | | $C_j$ | 33 | | | | | pF |
| Typical thermal resistance | | $R_{\Theta J-A}$<br>$R_{\Theta J-C}$<br>$R_{\Theta J-L}$ | 67.0<br>7.0<br>11.0 | | | | | ℃/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;**

# HBS402 - HBS410

**Glass Passivated Single-Phase 4.0Amp Surface Mount Bridge Rectifier**

## Ratings and Characteristics Curves

(TA = 25℃ unless otherwise noted)

**FIG.1 Derating Curve Output Rectified Current**

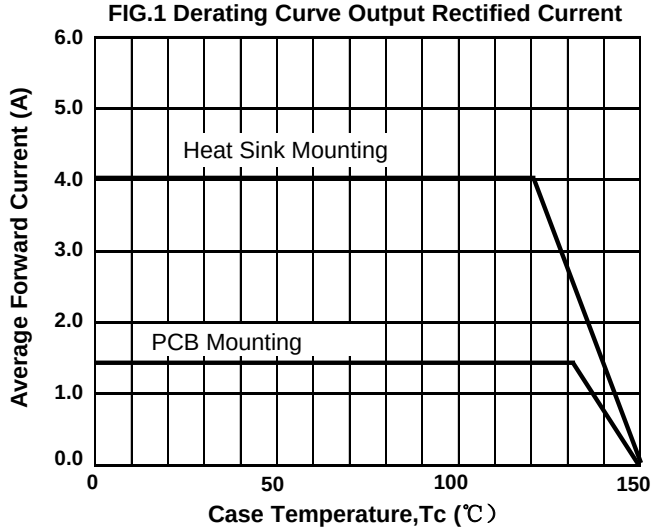



**FIG.2 Typical Forward Characteristics per Diode**

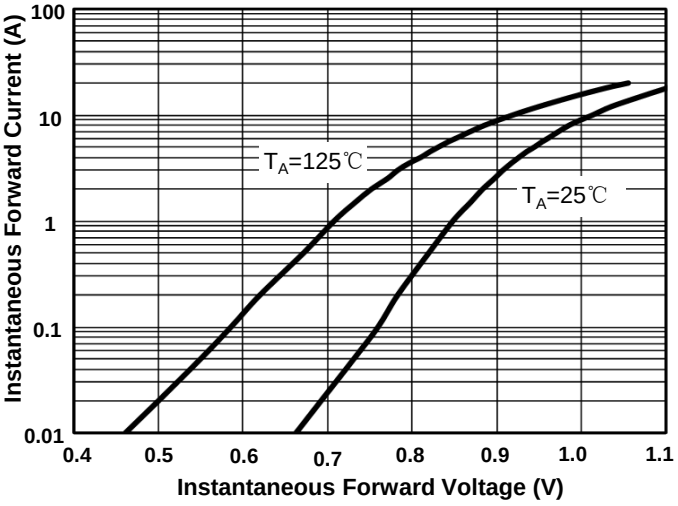



**FIG.3 Maximum Non-Repetitive Peak Forward Surge Current per Diode**

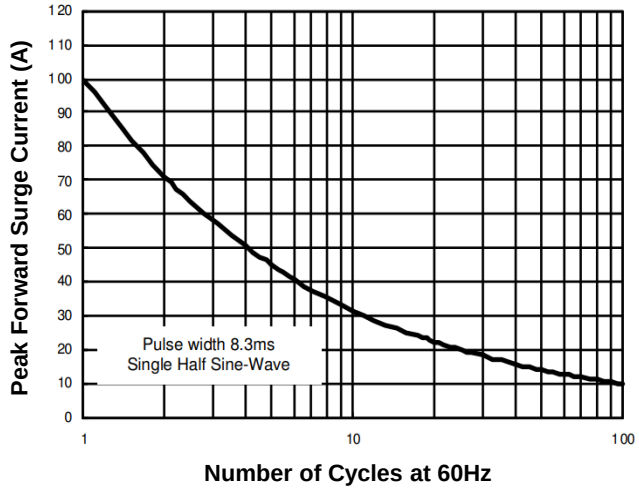



**FIG.4 Typical Reverse Characteristics per Diode**

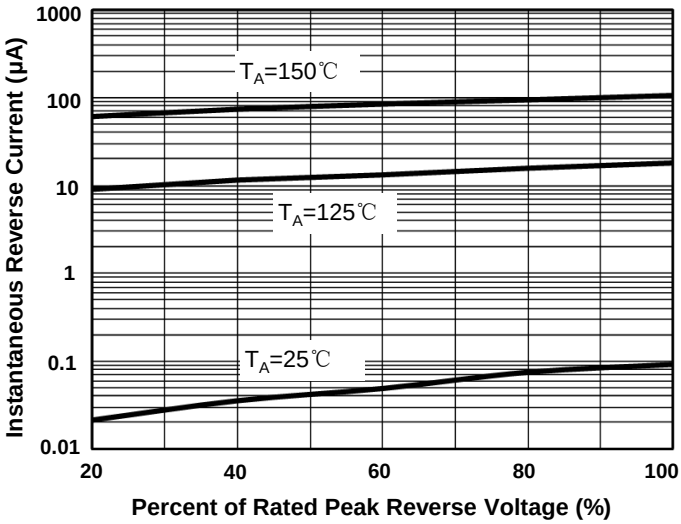
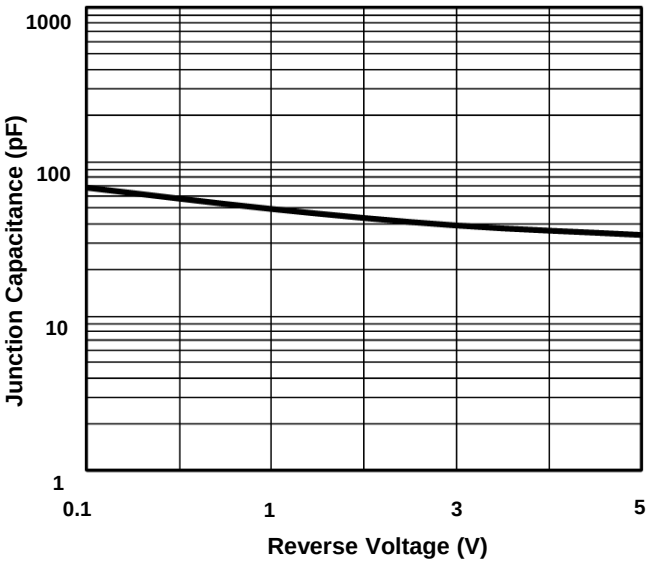



**FIG.5 Typical Junction Capacitance per Diode**




**Suggested PCB printfoot layout**

Unit: inches (mm)

