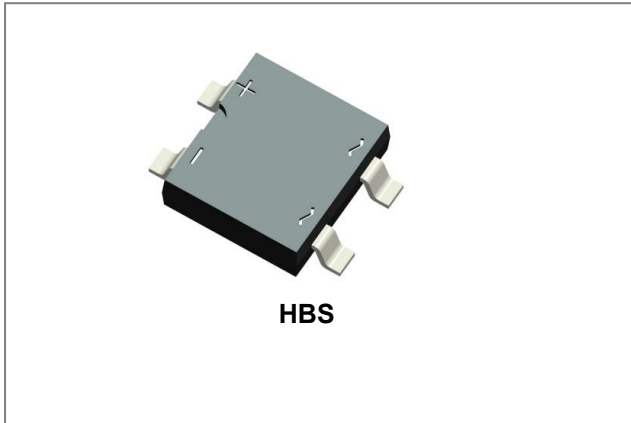


## HBN802 THRU HBN810

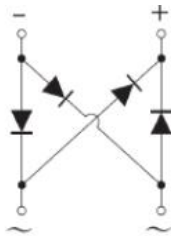
### Glass Passivated Single-Phase 8.0Amp Surface Mount Bridge Rectifier



#### Features

- Surface mount bridge, small package;
- Ideal for printed circuit boards;
- Glass passivated chip junction;
- High forward current capability up to 8.0A;
- High surge current capability;
- High heat dissipation capability;
- Low profile package;
- Low forward voltage drop;
- Plastic package has Underwrites Laboratory Flammability Classification 94V-0
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

#### Circuit Diagram



#### 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;

#### Maximum Ratings and Electrical Characteristics @T<sub>A</sub>=25°C unless otherwise specified

Single Phase half wave 60Hz, resistive or inductive load. For capacitive load current derate by 20%.

| Type Number  | Symbol  | HBN802 | HBN804 | HBN806 | HBN808 | HBN810 | Units              |
|--|---|--------|--------|--------|--------|--------|--------------------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                             | V <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>DC</sub> | 200    | 400    | 600    | 800    | 1000   | V                  |
| RMS Reverse Voltage  | V <sub>RMS</sub>  | 140    | 280    | 420    | 560    | 700    | V                  |
| Maximum average forward rectified output current at @T <sub>A</sub> =25°C  | I <sub>(AV)</sub>                                       | 8      |        |        |        |        | A                  |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single half sine-wave superimposed on rated load (JEDEC Method) | I <sub>FSM</sub>  | 160    |        |        |        |        | A                  |
| Rating for fusing (t<8.3ms)  | I <sup>2</sup> t  | 106    |        |        |        |        | A <sup>2</sup> sec |

**Electrical Characteristics@T<sub>A</sub>=25°C unless otherwise specified**

| Type Number   | Symbol         | HBN802 | HBN804 | HBN806     | HBN808 | HBN810 | Units |
|---|----------------|--------|--------|------------|--------|--------|-------|
| Maximum Forward Voltage (per element) @I <sub>F</sub> =4A<br>@I <sub>F</sub> =8A                            | V <sub>F</sub> |        |        | 1.0<br>1.1 |        |        | V     |
| Maximum Peak Reverse Current @T <sub>A</sub> = 25°C<br>At Rated DC Blocking Voltage @T <sub>A</sub> = 125°C | I <sub>R</sub> |        |        | 5<br>200   |        |        | μA    |
| Typical capacitance(Note 1)   | C <sub>j</sub> |        |        | 52         |        |        | pF    |

\* Pulse width < 300 μs, duty cycle < 2%

**Thermal-Mechanical Specifications@T<sub>A</sub>=25°C unless otherwise specified**

| Type Number                             | Symbol   | HBN802 | HBN804 | HBN806               | HBN808 | HBN810 | Units |
|---|--|--------|--------|----------------------|--------|--------|-------|
| Typical Thermal Resistance              | R <sub>θJA</sub><br>R <sub>θJC</sub><br>R <sub>θJL</sub> |        |        | 70.0<br>10.0<br>14.0 |        |        | °C/W  |
| Operating and Storage Temperature Range | T <sub>J</sub> , T <sub>STG</sub>                        |        |        | -55 to +150          |        |        | °C    |

Note: 1. Mounted at 1.0 MHz and applied reverse voltage of 5.0V DC;

**Ratings and Characteristics Curves**

Fig. 1 Forward Current Derating Curve

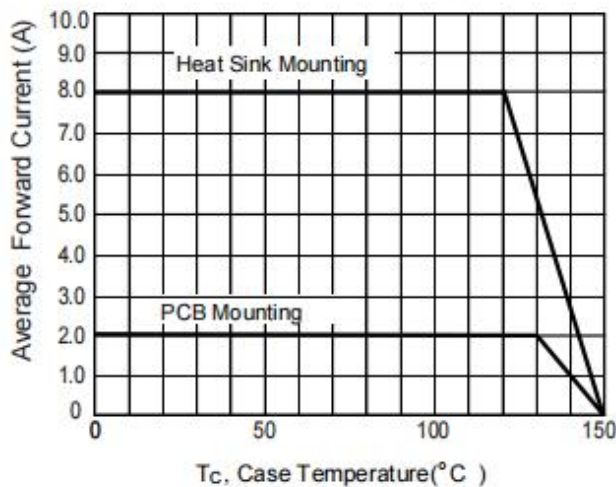
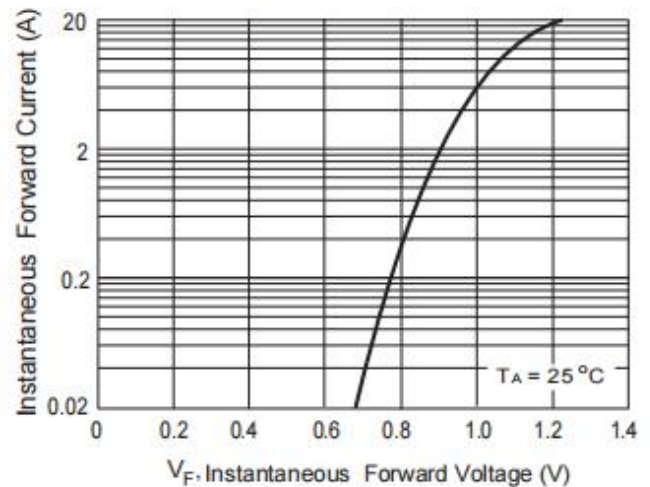
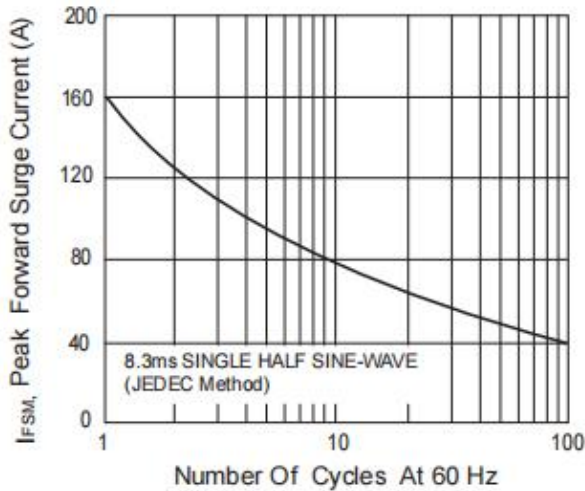


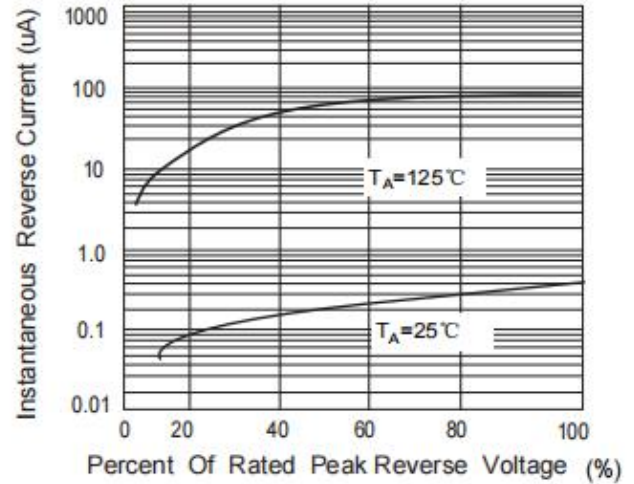
Fig. 2 Typ. Forward Characteristics



**Fig. 3 Max Non-Repetitive Peak Fwd Surge Current**

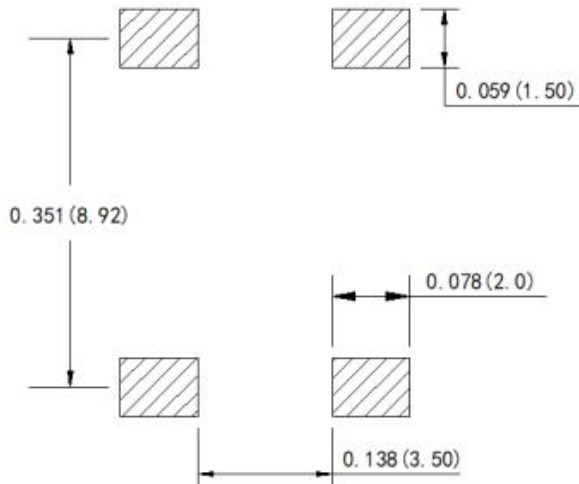


**Fig.4 Typical Reverse Characteristics**

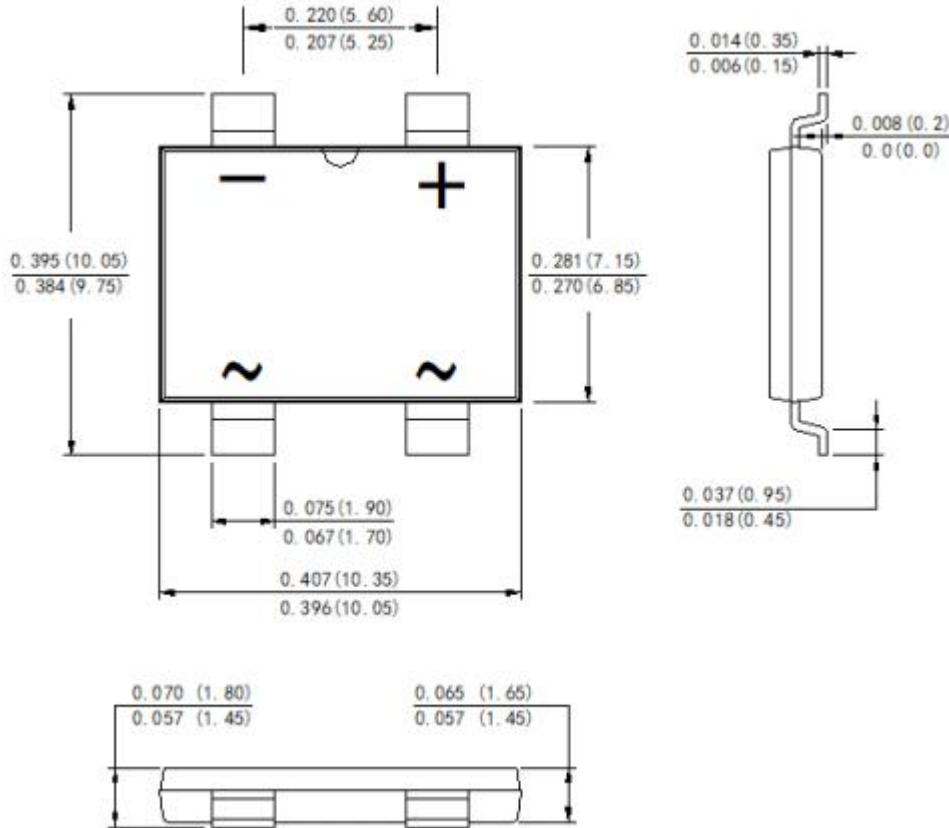


**Suggested PCB printfoot layout**

Unit: inches (mm)



**Mechanical Dimensions HBS(Inches/Millimeters)**



**Ordering Information**

| Device                   | Package          | Plating | Shipping       |
|--------------------------|------------------|---------|----------------|
| HBN802<br>THRU<br>HBN810 | HBS<br>(Pb-Free) | Pure Sn | 2500pcs / reel |

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**Marking Diagram**



Where XXXXX is YYWWL

HBN802 = Type Number  
YY = Year  
WW = Week  
L = Lot Number

**Cautions:** Molding resin  
Epoxy resin UL:94V-0

**DISCLAIMER:**

- 1- The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact the SMC Diode Solutions sales department for the latest version of the datasheet(s).
- 2- In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, medical equipment, and safety equipment), safety should be ensured by using semiconductor devices that feature assured safety or by means of users' fail-safe precautions or other arrangement.
- 3- In no event shall SMC Diode Solutions be liable for any damages that may result from an accident or any other cause during operation of the user's units according to the datasheet(s). SMC Diode Solution assumes no responsibility for any intellectual property claims or any other problems that may result from applications of information, products or circuits described in the datasheets.
- 4- In no event shall SMC Diode Solutions be liable for any failure in a semiconductor device or any secondary damage resulting from use at a value exceeding the absolute maximum rating.
- 5- No license is granted by the datasheet(s) under any patents or other rights of any third party or SMC Diode Solutions.
- 6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of SMC Diode Solutions.
- 7- The products (technologies) described in the datasheet(s) are not to be provided to any party whose purpose in their application will hinder maintenance of international peace and safety nor are they to be applied to that purpose by their direct purchasers or any third party. When exporting these products (technologies), the necessary procedures are to be taken in accordance with related laws and regulations..