

## 1.0A HIGH VOLTAGE SCHOTTKY BARRIER RECTIFIER

### Features

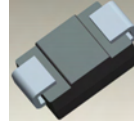
- Guard Ring Die Construction for Transient Protection
- Ideally Suited for Automated Assembly
- Low Power Loss, High Efficiency
- Surge Overload Rating to 50A Peak
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Application
- High Temperature Soldering: 260°C/10 Second at Terminal
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **Green Molding Compound (No Halogen and Antimony) (Note 2)**

### Mechanical Data

- Case: SMB
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band or Cathode Notch
- Weight: 0.093 grams (approximate)



Top View



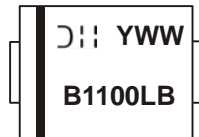
Bottom View

### Ordering Information (Note 3)

| Part Number  | Case | Packaging        |
|--------------|------|------------------|
| B1100LB-13-F | SMB  | 3000/Tape & Reel |

- Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes.
  2. Product manufactured with Data Code 0924 (week 24, 2009) and newer are built with Green Molding Compound.
  3. For packaging details, go to our website at <http://www.diodes.com>.

### Marking Information



B1100LB = Product type marking code  
 DII = Manufacturers' code marking  
 YWW = Date code marking  
 Y = Last digit of year (ex: 02 for 2002)  
 WW = Week code (01 to 53)

Note: Device has a cathode band and may also have a cathode notch.

**Maximum Ratings** @T<sub>A</sub> = 25°C unless otherwise specified

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

| Characteristic  | Symbol              | Value | Unit |
|---|---------------------|-------|------|
| Peak Repetitive Reverse Voltage   | V <sub>RRM</sub>    | 100   | V    |
| Working Peak Reverse Voltage  | V <sub>RWM</sub>    |       |      |
| DC Blocking Voltage @ I <sub>R</sub> = 0.5mA  | V <sub>R</sub>      |       |      |
| RMS Reverse Voltage   | V <sub>R(RMS)</sub> | 70    | V    |
| Average Rectified Output Current @ T <sub>T</sub> = 120°C   | I <sub>O</sub>      | 1.0   | A    |
| @ T <sub>T</sub> = 100°C  |                     | 2.0   |      |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single half sine-wave Superimposed on Rated Load | I <sub>FSM</sub>    | 50    | A    |

**Thermal Characteristics**

| Characteristic   | Symbol                            | Value       | Unit |
|--|-----------------------------------|-------------|------|
| Typical Thermal Resistance Junction to Terminal (Note 4) | R <sub>θJT</sub>                  | 22          | °C/W |
| Operating and Storage Temperature Range (Note 5)         | T <sub>J</sub> , T <sub>STG</sub> | -65 to +175 | °C   |

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

| Characteristic           | Symbol         | Min | Typ | Max        | Unit | Test Condition  |
|--------------------------|----------------|-----|-----|------------|------|---|
| Forward Voltage Drop     | V <sub>F</sub> | -   | -   | 0.75       | V    | I <sub>F</sub> = 1.0A, T <sub>A</sub> = 25°C  |
| Leakage Current (Note 6) | I <sub>R</sub> | -   | -   | 0.5<br>5.0 | mA   | V <sub>R</sub> = 100V, T <sub>A</sub> = 25°C<br>V <sub>R</sub> = 100V, T <sub>A</sub> = 100°C |
| Total Capacitance        | C <sub>T</sub> | -   | -   | 100        | pF   | V <sub>R</sub> = 4V, f = 1MHz   |

- Notes:
- Valid provided that terminals are kept at ambient temperature.
  - The heat generated must be less than the thermal conductivity from Junction-to-Ambient:  $dP_D/dT_J < 1/R_{\theta JA}$ .
  - Short duration pulse test used to minimize self-heating effect.

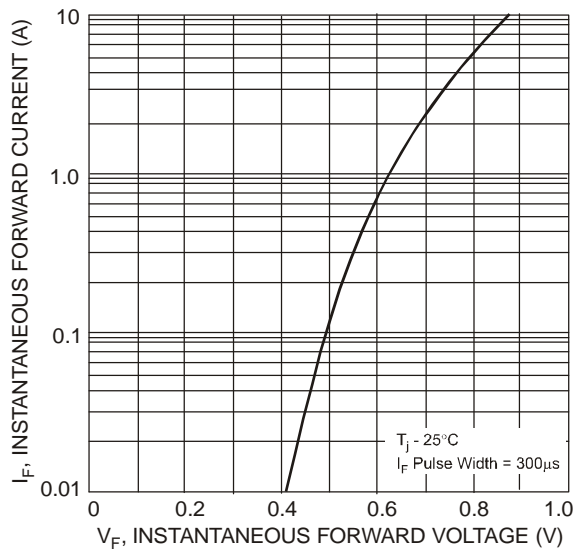


Fig. 1 Typical Forward Characteristics

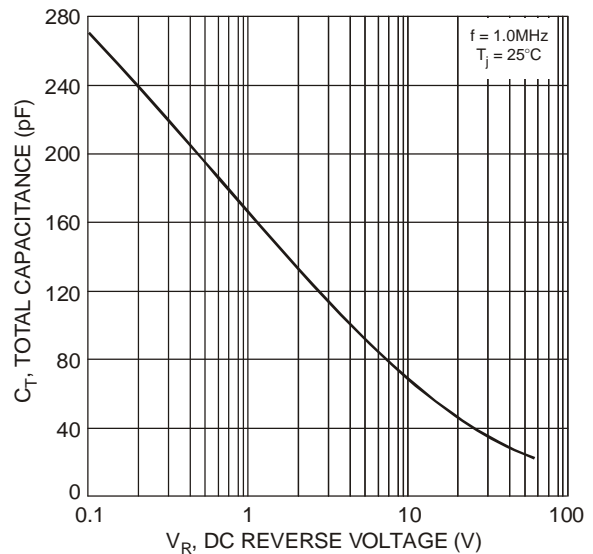


Fig. 2 Total Capacitance vs. Reverse Voltage

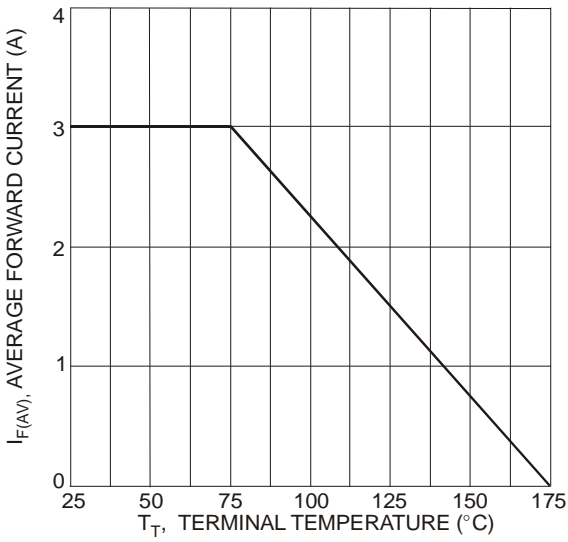


Fig. 3 Forward Current Derating Curve

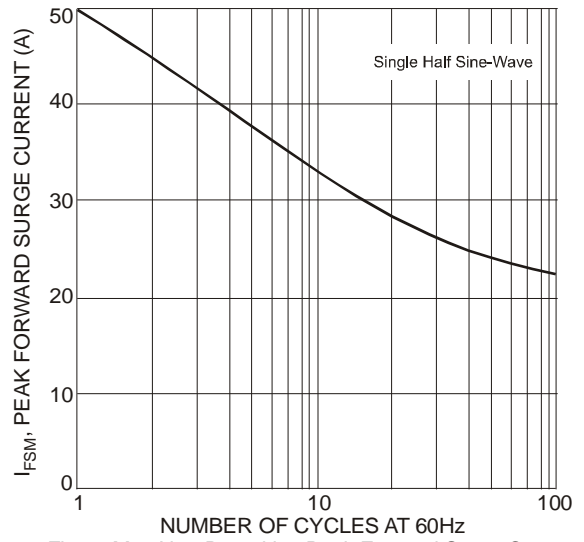
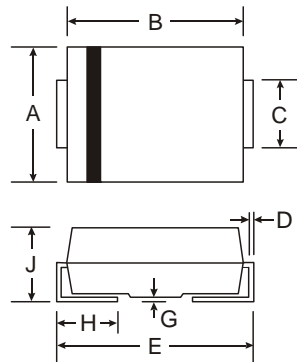


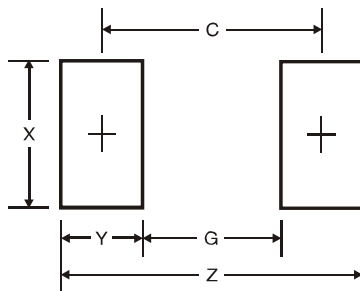
Fig. 4 Max Non-Repetitive Peak Forward Surge Current

## Package Outline Dimensions



| SMB                  |      |      |
|----------------------|------|------|
| Dim                  | Min  | Max  |
| A                    | 3.30 | 3.94 |
| B                    | 4.06 | 4.57 |
| C                    | 1.96 | 2.21 |
| D                    | 0.15 | 0.31 |
| E                    | 5.00 | 5.59 |
| G                    | 0.05 | 0.20 |
| H                    | 0.76 | 1.52 |
| J                    | 2.00 | 2.50 |
| All Dimensions in mm |      |      |

## Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| Z          | 6.8           |
| G          | 1.8           |
| X          | 2.3           |
| Y          | 2.5           |
| C          | 4.3           |

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