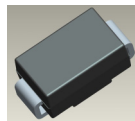


**3.0A HIGH VOLTAGE SCHOTTKY BARRIER RECTIFIER**
**Features**

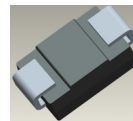
- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- Surge Overload Rating to 100A Peak
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Application
- **Lead Free Finish/RoHS Compliant (Note 1)**
- **Green Molding Compound (No Halogen and Antimony) (Note 2)**

**Mechanical Data**

- Case: SMC
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 ③
- Polarity: Cathode Band or Cathode Notch
- Weight: 0.21 grams (approximate)



Top View



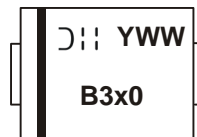
Bottom View

**Ordering Information** (Note 3)

| Part Number* | Case | Packaging        |
|--------------|------|------------------|
| B3x0-13-F    | SMC  | 3000/Tape & Reel |

\* x = Device type, e.g. B380-13-F (SMC package).

- 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**


B3x0 = Product type marking code, ex: B380 (SMC package)  
 ⤵ = Manufacturers' code marking  
 YWW = Date code marking  
 Y = Last digit of year (ex: 2 for 2002)  
 WW = Week code (01 - 53)  
 Note: B3100 marking code is B3100

**Maximum Ratings** @ $T_A = 25^\circ\text{C}$  unless otherwise specified

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

| Characteristic   | Symbol       | B370 | B380 | B390 | B3100 | Unit |
|--|--------------|------|------|------|-------|------|
| Peak Repetitive Reverse Voltage  | $V_{RRM}$    |      |      |      |       |      |
| Working Peak Reverse Voltage   | $V_{RWM}$    | 70   | 80   | 90   | 100   | V    |
| DC Blocking Voltage (Note 4)   | $V_R$        |      |      |      |       |      |
| RMS Reverse Voltage  | $V_{R(RMS)}$ | 49   | 56   | 63   | 70    | V    |
| Average Rectified Output Current @ $T_T = 90^\circ\text{C}$                                      | $I_O$        | 3.0  |      |      |       | A    |
| Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load | $I_{FSM}$    | 100  |      |      |       | A    |

Notes: 4.  $V_B$  measured at  $I_R = 500\mu\text{A}$  ( $25^\circ\text{C}$ ).

**Thermal Characteristics**

| Characteristic                                  | Symbol          | Value       | Unit               |
|---|-----------------|-------------|--------------------|
| Typical Thermal Resistance Junction to Terminal | $R_{\theta JT}$ | 10          | $^\circ\text{C/W}$ |
| Operating Temperature Range                     | $T_J$           | -55 to +125 | $^\circ\text{C}$   |
| Storage Temperature Range                       | $T_{STG}$       | -55 to +150 | $^\circ\text{C}$   |

**Electrical Characteristics** @ $T_A = 25^\circ\text{C}$  unless otherwise specified

| Characteristic           | Symbol | Min | Typ | Max          | Unit | Test Condition  |
|--------------------------|--------|-----|-----|--------------|------|---|
| Forward Voltage Drop     | $V_F$  | -   | -   | 0.79<br>0.69 | V    | $I_F = 3.0\text{A}, T_A = 25^\circ\text{C}$<br>$I_F = 3.0\text{A}, T_A = 100^\circ\text{C}$ |
| Leakage Current (Note 5) | $I_R$  | -   | -   | 0.5<br>20    | mA   | @ Rated $V_R, T_A = 25^\circ\text{C}$<br>@ Rated $V_R, T_A = 100^\circ\text{C}$             |
| Total Capacitance        | $C_T$  | -   | -   | 100          | pF   | $V_R = 4\text{V}, f = 1\text{MHz}$  |

Notes: 5. Short duration pulse test used to minimize self-heating effect.

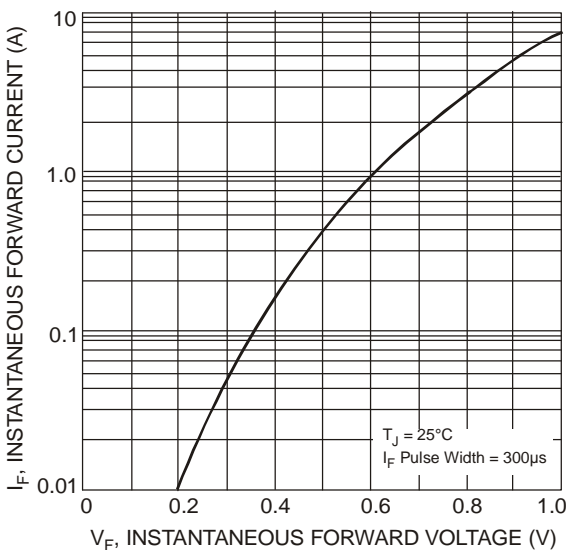


Fig. 1 Typical Forward Characteristics

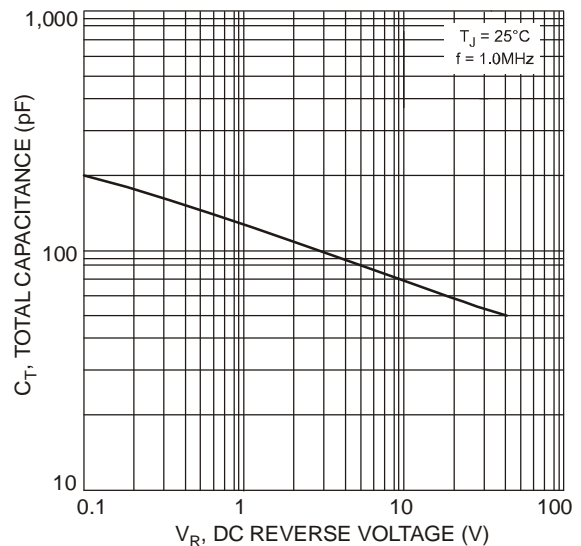


Fig. 2 Total Capacitance vs. Reverse Voltage

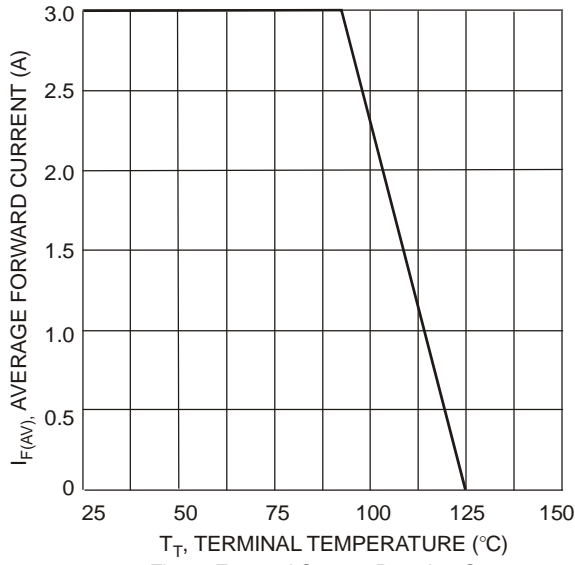


Fig. 3 Forward Current Derating Curve

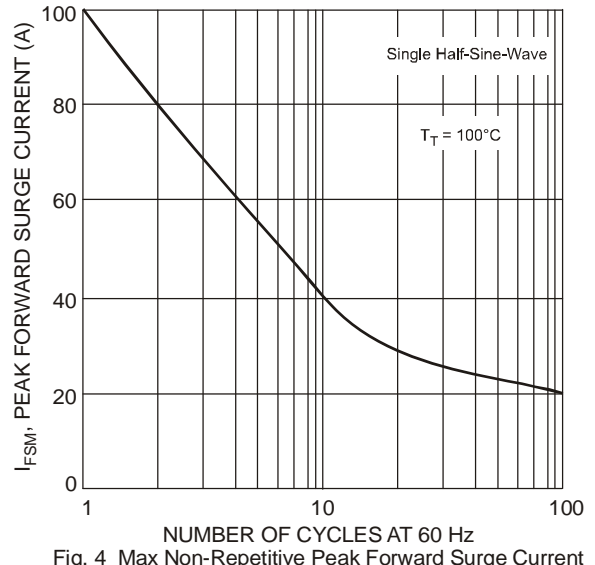
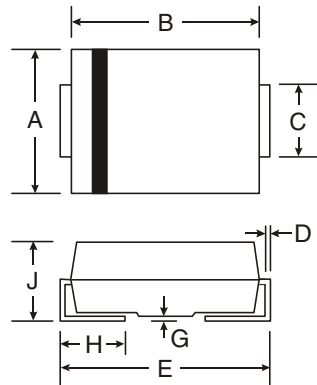


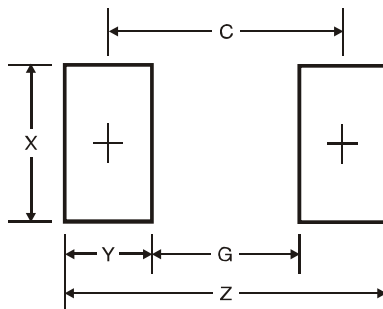
Fig. 4 Max Non-Repetitive Peak Forward Surge Current

**Package Outline Dimensions**



| SMC                  |      |      |
|----------------------|------|------|
| Dim                  | Min  | Max  |
| A                    | 5.59 | 6.22 |
| B                    | 6.60 | 7.11 |
| C                    | 2.75 | 3.18 |
| D                    | 0.15 | 0.31 |
| E                    | 7.75 | 8.13 |
| G                    | 0.10 | 0.20 |
| H                    | 0.76 | 1.52 |
| J                    | 2.00 | 2.50 |
| All Dimensions in mm |      |      |

**Suggested Pad Layout**



| Dimensions | Value (in mm) |
|------------|---------------|
| Z          | 9.3           |
| G          | 4.4           |
| X          | 3.3           |
| Y          | 2.5           |
| C          | 6.8           |

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