

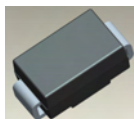
## 3.0A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

### Features

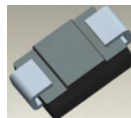
- Guard Ring Die Construction for Transient Protection
- Ideally Suited for Automated Assembly
- Low Power Loss, High Efficiency
- Low Forward Voltage Drop
- Surge Overload Rating to 100A Peak
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Application
- High 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
- Moisture Sensitivity: Level 1 per J-STD-020
- 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        |
|-------------|------|------------------|
| B380B-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



B380B = Product type marking code  
 DII = Manufacturers' code marking  
 YWW = Date code marking  
 Y = Last digit of year (ex: 6 for 2006)  
 WW = Week code (01 to 53)

## 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    | Value | Unit |
|-----------------------------------------------------------------------------------------------------|-----------|-------|------|
| Peak Repetitive Reverse Voltage                                                                     | $V_{RRM}$ | 80    | V    |
| Working Peak Reverse Voltage                                                                        | $V_{RWM}$ |       |      |
| DC Blocking Voltage (Note 4)                                                                        | $V_R$     |       |      |
| Average Rectified Output Current @ $T_T = 125^\circ\text{C}$                                        | $I_O$     | 3.0   | A    |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>Single Half Sine-Wave Superimposed on Rated Load | $I_{FSM}$ | 100   | A    |

## Thermal Characteristics

| Characteristic                                           | Symbol          | Value       | Unit               |
|----------------------------------------------------------|-----------------|-------------|--------------------|
| Typical Thermal Resistance Junction to Terminal (Note 5) | $R_{\theta JT}$ | 10          | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range                  | $T_J, T_{STG}$  | -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>$I_F = 3.0\text{A}, T_A = 100^\circ\text{C}$ |
| Peak Reverse Current (Note 4) | $I_R$  | -   | -   | 0.5<br>20    | mA   | $V_R = 80\text{V}, T_A = 25^\circ\text{C}$<br>$V_R = 80\text{V}, T_A = 100^\circ\text{C}$   |
| Typical Total Capacitance     | $C_T$  | -   | 120 | -            | pF   | $V_R = 4.0\text{V}, f = 1\text{MHz}$                                                        |

Notes: 4. Short duration pulse test used to minimize self-heating effect.  
 5. Valid provided that terminals are kept at ambient temperature.

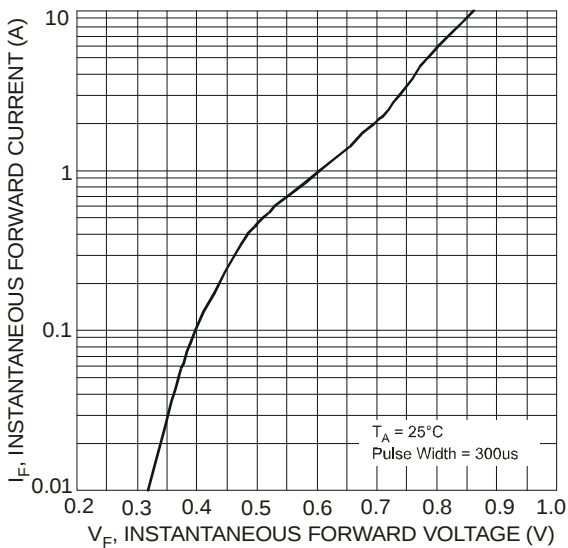


Fig. 1 Typical Forward Characteristics

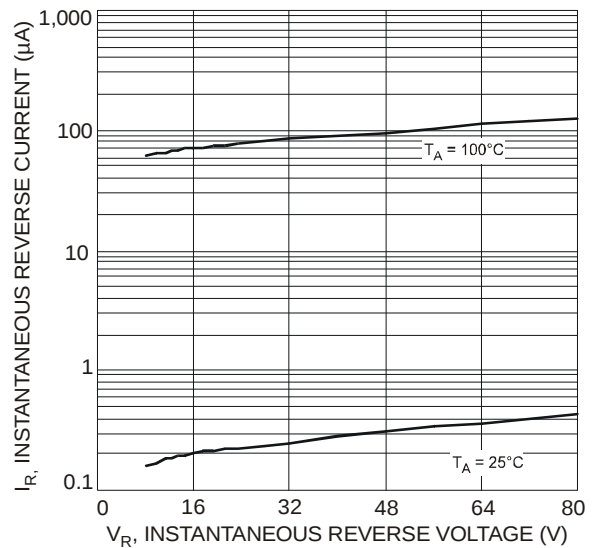
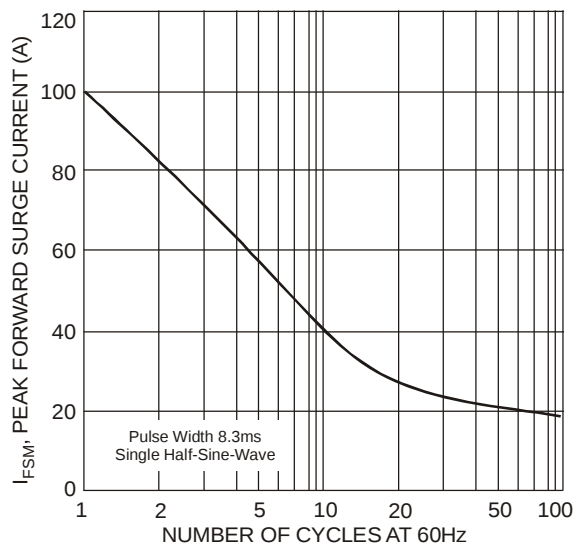
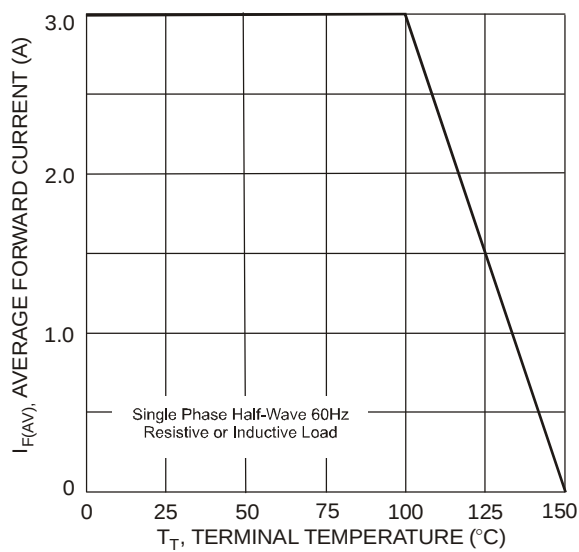
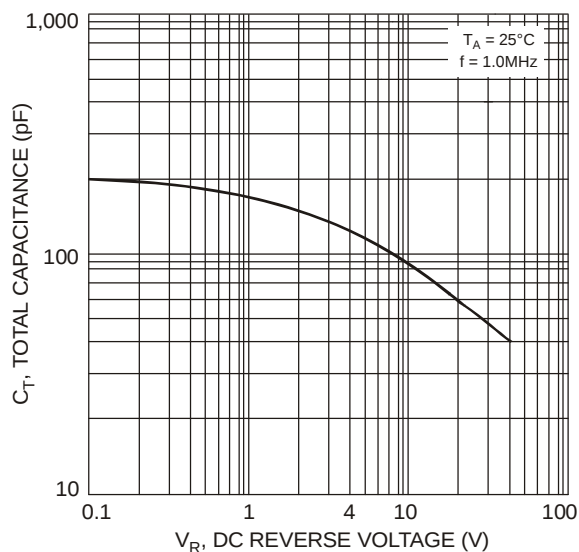
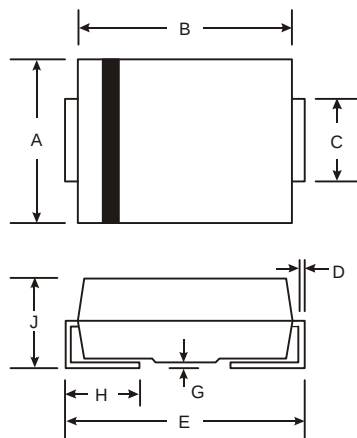


Fig. 2 Typical Reverse Characteristics

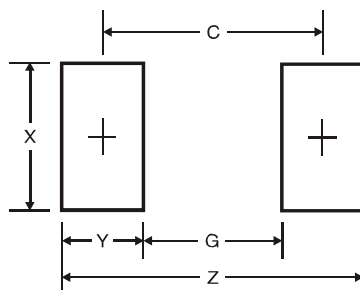


## Package Outline Dimensions



| 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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