

### 3.0A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

#### Features

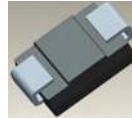
- Guard Ring Die Construction for Transient Protection
- Ideally Suited for Automated Assembly
- Low Power Loss, High Efficiency
- Low Forward Voltage Drop
- Surge Overload Rating to 100A Peak
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Application
- High 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 208③
- Polarity: Cathode Band or Cathode Notch
- Weight: 0.093 grams (approximate)



Top View



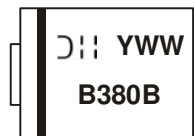
Bottom View

#### 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  
 311 = 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 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	V	$I_F = 3.0\text{A}, T_A = 25^\circ\text{C}$
		-	-	0.69		$I_F = 3.0\text{A}, T_A = 100^\circ\text{C}$
Peak Reverse Current (Note 4)	$I_R$	-	-	0.5	mA	$V_R = 80\text{V}, T_A = 25^\circ\text{C}$
		-	-	20		$V_R = 80\text{V}, T_A = 100^\circ\text{C}$
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.

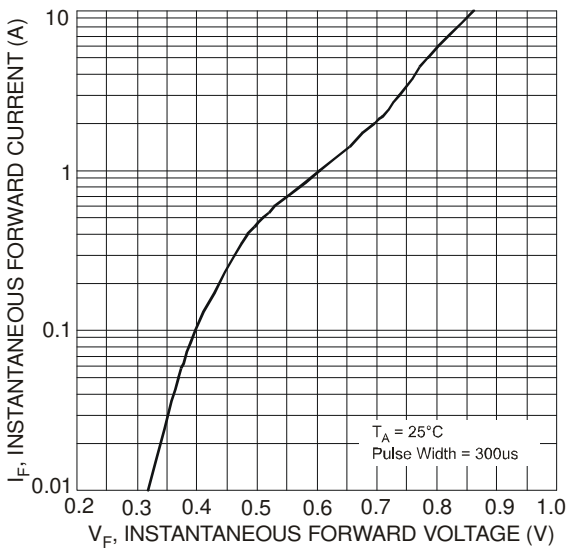


Fig. 1 Typical Forward Characteristics

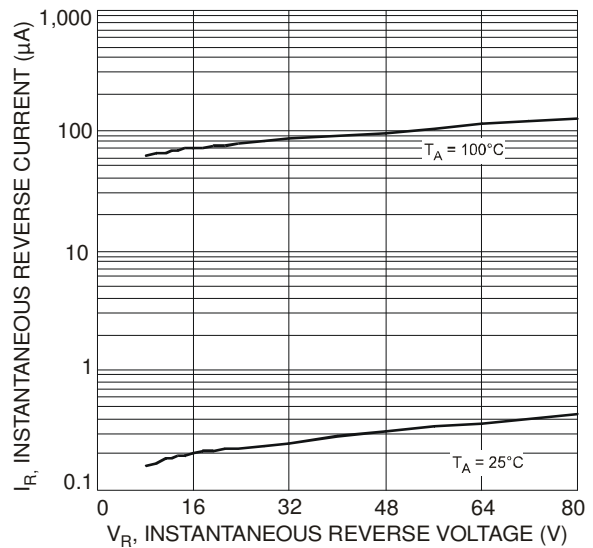


Fig. 2 Typical Reverse Characteristics

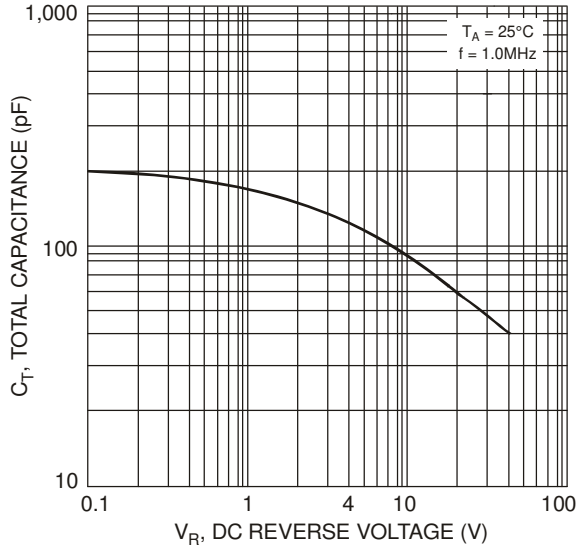


Fig. 3 Typical Total Capacitance vs. Reverse Voltage

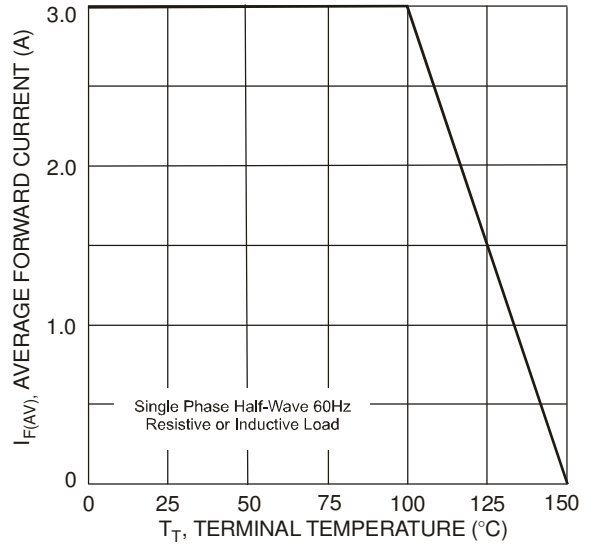


Fig. 4 Forward Current Derating Curve

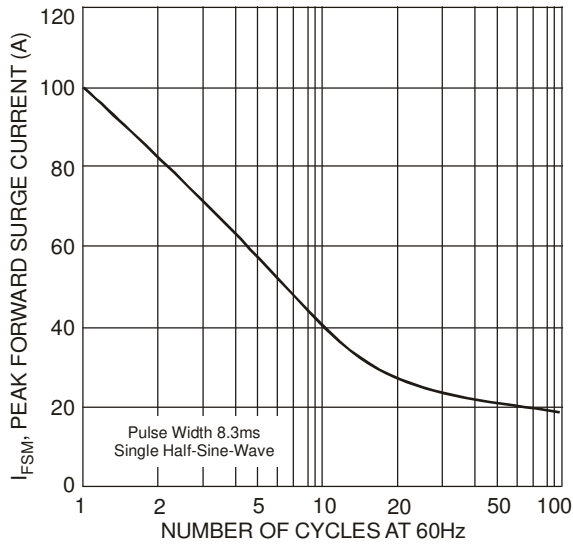
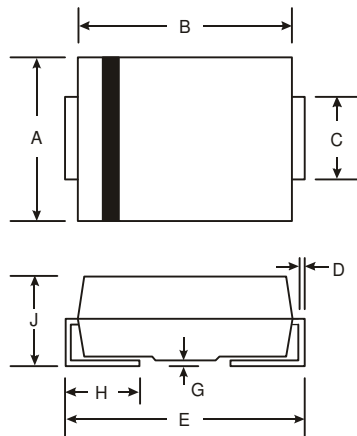


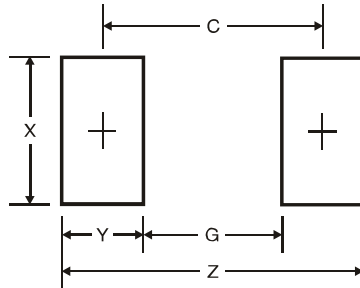
Fig. 5 Maximum Non-Repetitive Surge Current

**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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