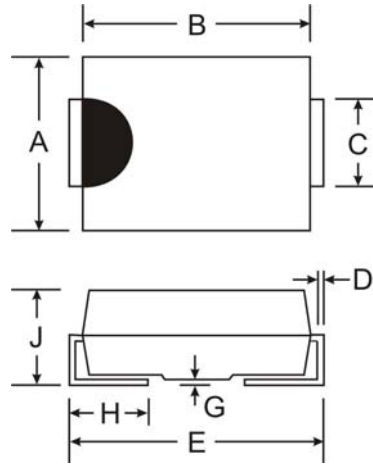


**Features**

- 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 2)**

**Mechanical Data**

- Case: SMC
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 (E3)
- Polarity: Cathode Band or Cathode Notch
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.21 grams (approximate)



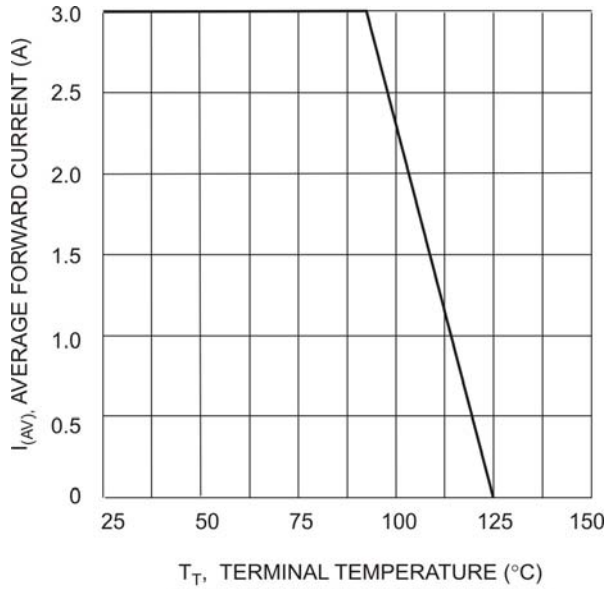
SMC		
Dim	Min	Max
A	5.59	6.22
B	6.60	7.11
C	2.75	3.18
D	0.15	0.31
E	7.75	8.13
G	0.10	0.20
H	0.76	1.52
J	2.00	2.62
All Dimensions in mm		

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

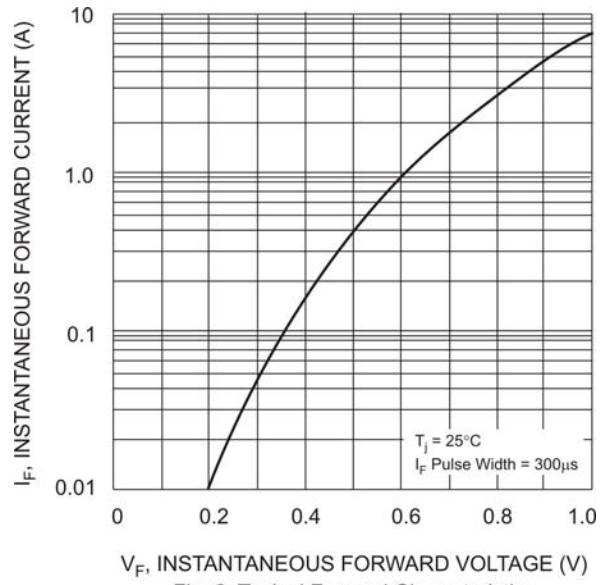
Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

Characteristic	Symbol	B370	B380	B390	B3100	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>					V
Working Peak Reverse Voltage	V <sub>RWM</sub>	70	80	90	100	V
DC Blocking Voltage	V <sub>R</sub>					V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	49	56	63	70	V
Average Rectified Output Current @ T <sub>T</sub> = 90°C	I <sub>O</sub>	3.0				A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	100				A
Forward Voltage @ I <sub>F</sub> = 3.0A @ T <sub>A</sub> = 25°C	V <sub>FM</sub>	0.79				V
@ T <sub>A</sub> = 100°C		0.69				
Peak Reverse Current at Rated DC Blocking Voltage @ T <sub>A</sub> = 25°C	I <sub>RM</sub>	0.5				mA
@ T <sub>A</sub> = 100°C		20				
Typical Total Capacitance (Note 1)	C <sub>T</sub>	100				pF
Typical Thermal Resistance Junction to Terminal	R <sub>θJT</sub>	10				°C/W
Operating Temperature Range	T <sub>J</sub>	-55 to +125				°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150				°C

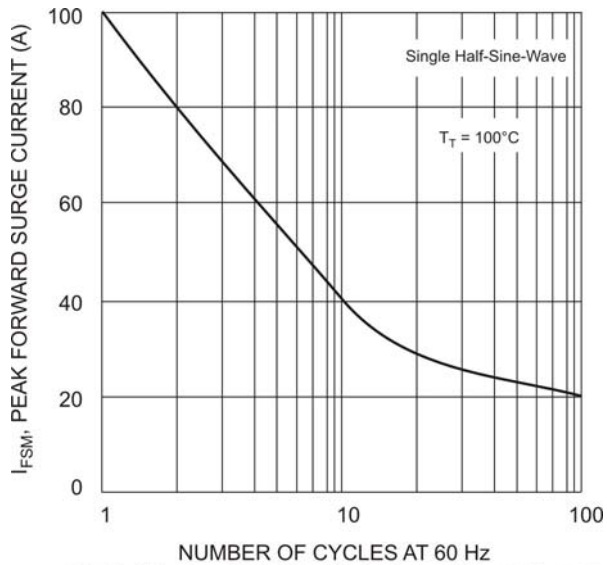
- Notes: 1. Measured at 1.0MHz and Applied Reverse Voltage of 4.0V DC.  
2. RoHS revision 13.2.2003. High Temperature Solder Exemption Applied, see EU Directive Annex Note 7.



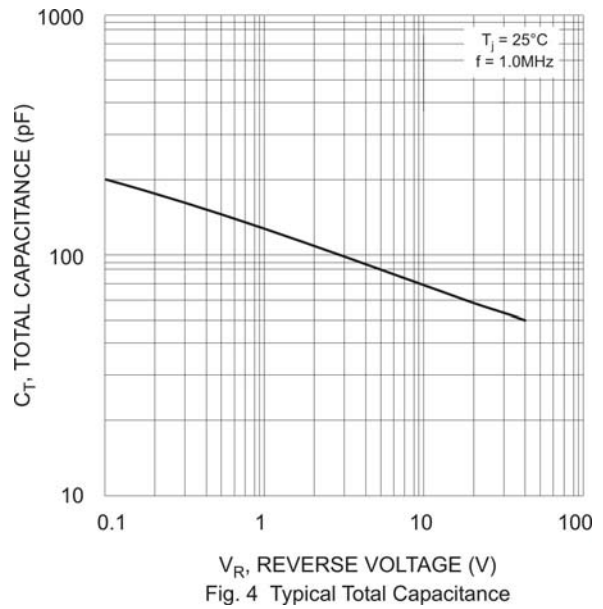
$T_T$ , TERMINAL TEMPERATURE (°C)  
Fig. 1 Forward Current Derating Curve



$V_F$ , INSTANTANEOUS FORWARD VOLTAGE (V)  
Fig. 2 Typical Forward Characteristics



NUMBER OF CYCLES AT 60 Hz  
Fig. 3 Max Non-Repetitive Peak Forward Surge Current



$V_R$ , REVERSE VOLTAGE (V)  
Fig. 4 Typical Total Capacitance

## Ordering Information (Note 3)

Device*	Packaging	Shipping
B3x0-13-F	SMC	3000/Tape & Reel

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

Notes: 3. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



B3X0 = Product type marking code, ex: B380 (SMC package)  
 D; = Manufacturers' code marking  
 YWW = Date code marking  
 Y = Last digit of year ex: 2 for 2002  
 WW = Week code 01 to 52  
 Note: B3100 marking code is B310

### IMPORTANT NOTICE

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. Diodes Incorporated does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

### LIFE SUPPORT

Diodes Incorporated products are not authorized for use as critical components in life support devices or systems without the expressed written approval of the President of Diodes Incorporated.