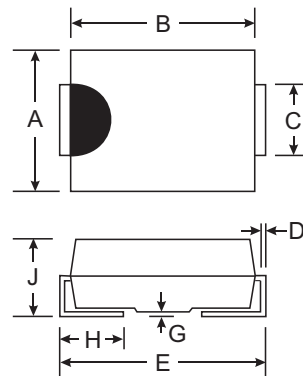


### Features

- Guard Ring Die Construction for Transient Protection
- Ideally Suited for Automatic Assembly
- Low Power Loss, High Efficiency
- Surge Overload Rating to 175A Peak
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Application
- Lead Free Finish/RoHS Compliant (Note 3)**

### 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
- Polarity: Cathode Band or Cathode Notch
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.21 grams (approximate)



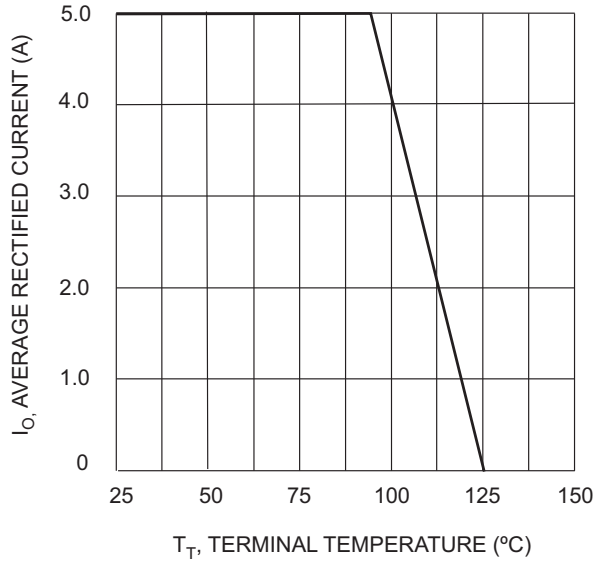
SMC		
Dim	Min	Max
A	5.59	6.22
B	6.60	7.11
C	2.75	3.18
D	0.15	0.31
E	7.75	8.13
G	0.10	0.20
H	0.76	1.52
J	2.00	2.62
All Dimensions in mm		

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

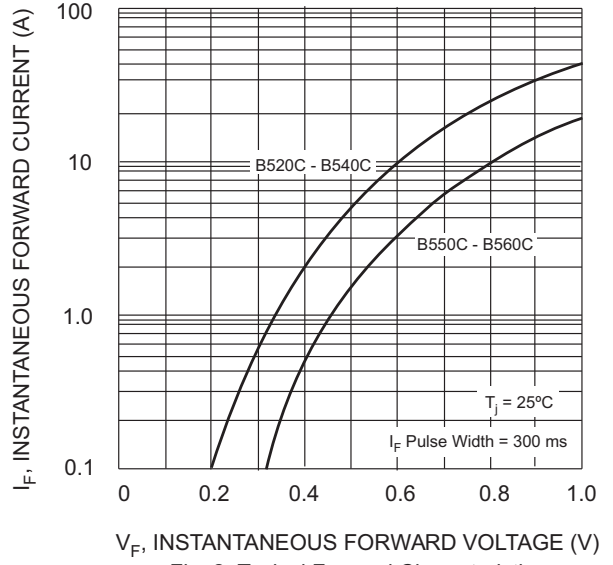
Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

Characteristic	Symbol	B520C	B530C	B540C	B550C	B560C	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>VRWM</sub> V <sub>R</sub>	20	30	40	50	60	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	14	21	28	35	42	V
Average Rectified Output Current @ T <sub>T</sub> = 90°C	I <sub>O</sub>	5.0					A
Non-Repetitive Peak Forward Surge Current, 8.3 ms single half-sine-wave Superimposed on Rated Load	I <sub>FSM</sub>	175					A
Forward Voltage @ I <sub>F</sub> = 5.0A DC	V <sub>FM</sub>	0.55			0.70		V
Peak Reverse Current @ T <sub>A</sub> = 25°C at Rated DC Blocking Voltage @ T <sub>A</sub> = 100°C	I <sub>RM</sub>	0.5 20					mA
Typical Total Capacitance (Note 2)	C <sub>T</sub>	300					pF
Thermal Resistance, Junction to Terminal	R <sub>JT</sub>	10					°C/W
Thermal Resistance, Junction to Ambient (Note 1)	R <sub>JA</sub>	50					°C/W
Operating Temperature Range	T <sub>J</sub>	-55 to +125					°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150					°C

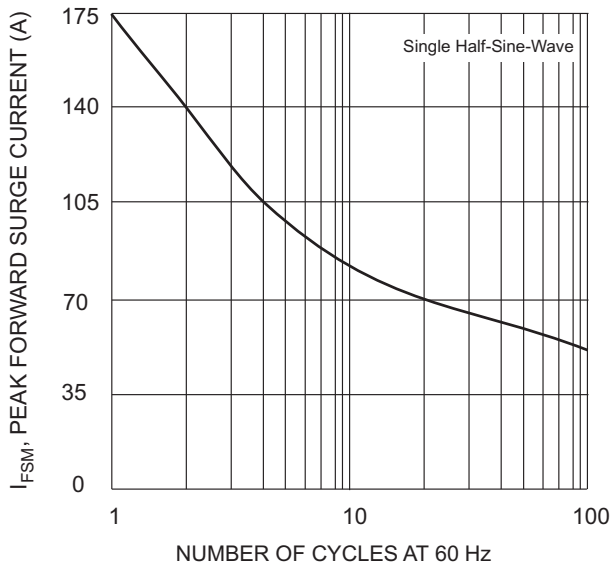
- Notes:
1. Thermal Resistance: Junction to ambient, unit mounted on PC board with 8.0 mm<sup>2</sup> (0.033 mm thick) copper pads as heat sink.
  2. Measured at 1.0 MHz and applied reverse voltage of 4.0V DC.
  3. RoHS revision 13.2.2003. High Temperature Solder Exemption Applied, see *EU Directive Annex Note 7*.



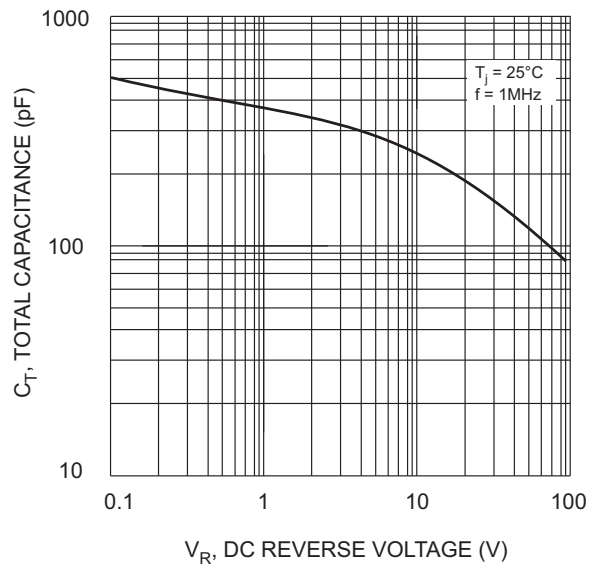
$T_T$ , TERMINAL TEMPERATURE (°C)  
Fig. 1 Forward Current Derating Curve



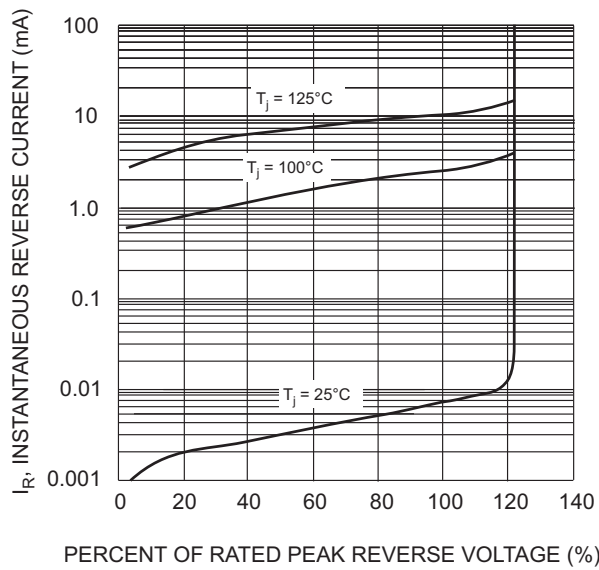
$V_F$ , INSTANTANEOUS FORWARD VOLTAGE (V)  
Fig. 2 Typical Forward Characteristics



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



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



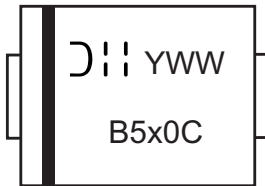
PERCENT OF RATED PEAK REVERSE VOLTAGE (%)  
Fig. 5 Typical Reverse Characteristics

## Ordering Information (Note 4)

Device	Packaging	Shipping
B520C-13-F	SMC	3000/Tape & Reel
B530C-13-F	SMC	3000/Tape & Reel
B540C-13-F	SMC	3000/Tape & Reel
B550C-13-F	SMC	3000/Tape & Reel
B560C-13-F	SMC	3000/Tape & Reel

Notes: 4. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



B5x0C = Product type marking code, ex: B540C (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  
 x = 2,3,4,5 or 6 - i.e., x = 4 for B540C

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