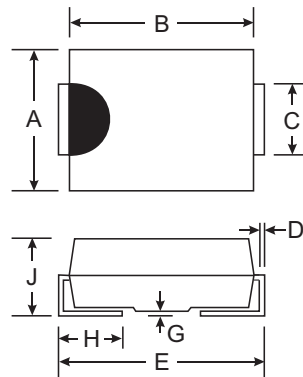


### Features

- 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 (e3)
- Polarity: Cathode Band or Cathode Notch
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.21 grams (approximate)



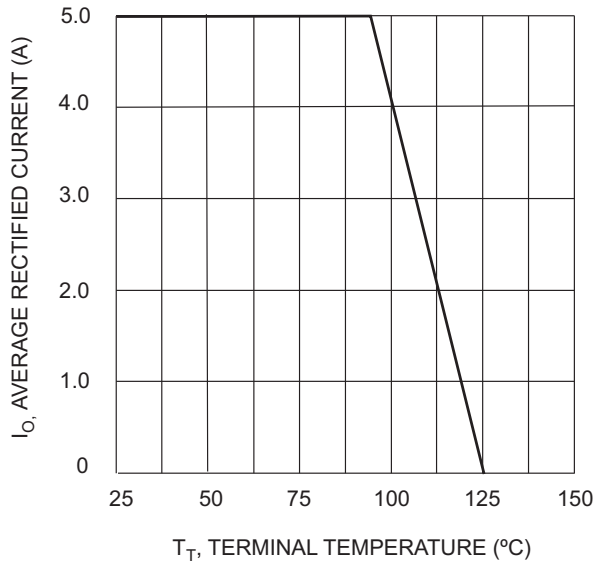
SMC		
Dim	Min	Max
A	5.59	6.22
B	6.60	7.11
C	2.75	3.18
D	0.15	0.31
E	7.75	8.13
G	0.10	0.20
H	0.76	1.52
J	2.00	2.62
All Dimensions in mm		

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

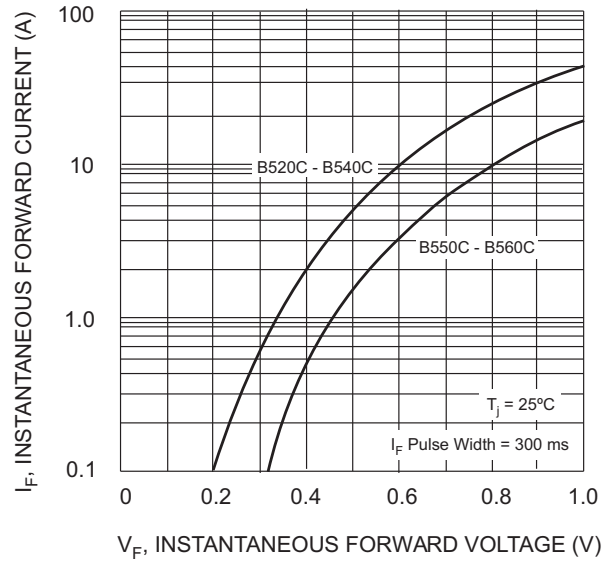
Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

Characteristic	Symbol	B520C	B530C	B540C	B550C	B560C	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	20	30	40	50	60	V
Working Peak Reverse Voltage	V <sub>RWM</sub>						
DC Blocking Voltage	V <sub>R</sub>						
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

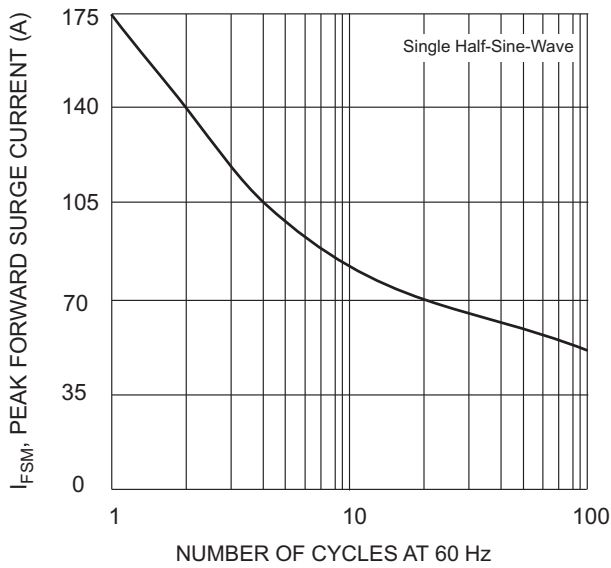
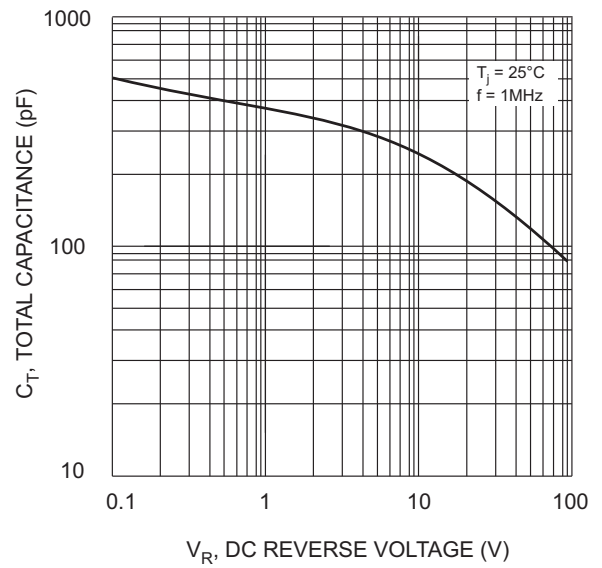


Fig. 3 Max Non-Repetitive Peak Forward Surge Current



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

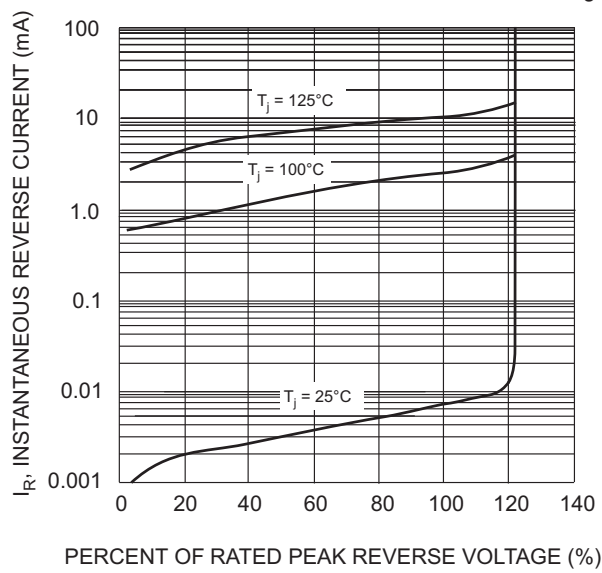


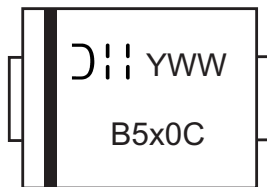
Fig. 5 Typical Reverse Characteristics

## 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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