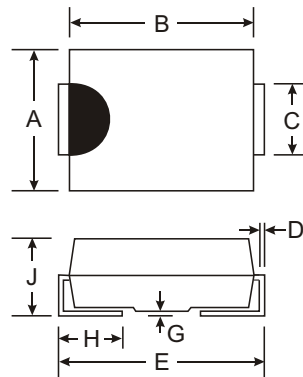


### Features

- 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
- **Available in Lead Free Finish/RoHS Compliant Version (Note 3)**

### Mechanical Data

- Case: Molded Plastic
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020C
- Terminals: Solder Plated Terminal Solderable per MIL-STD-202, Method 208
- Also Available in Lead Free Plating (Matte Tin Finish). Please see Ordering Information, Note 5, on Page 2
- Polarity: Cathode Band or Cathode Notch
- Approx. Weight: 0.21 grams
- Marking: See Page 2



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%.

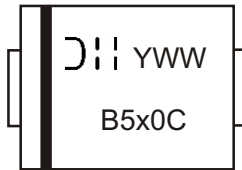
Characteristic	Symbol	B520C	B530C	B540C	B550C	B560C	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	20	30	40	50	60	V
Working Peak Reverse Voltage	V <sub>RWM</sub>						
DC Blocking Voltage	V <sub>R</sub>						
RMS Reverse Voltage	V <sub>R(RMS)</sub>	14	21	28	35	42	V
Average Rectified Output Current @ 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>θJT</sub>	10					°C/W
Thermal Resistance, Junction to Ambient (Note 1)	R <sub>θJA</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. Glass and High Temperature Solder Exemptions Applied, see EU Directive Annex Notes 5 and 7.

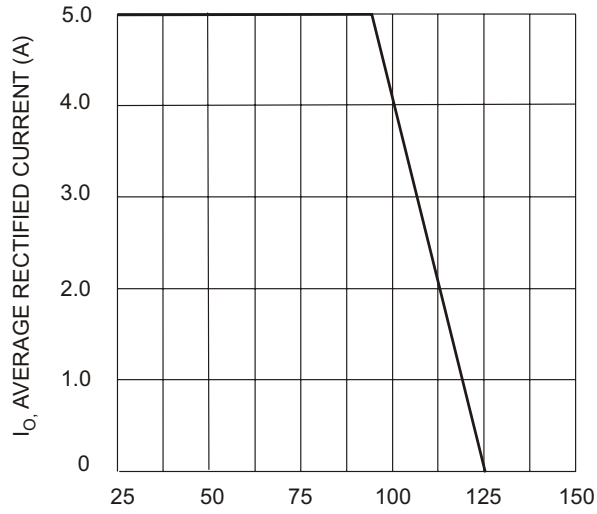
**Ordering Information** (Note 4 & 5)

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

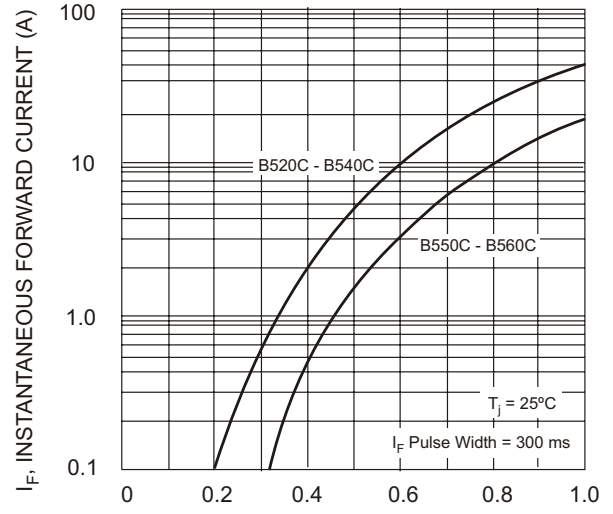
- Notes:
- For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.
  - For Lead Free Finish/RoHS Compliant version part number, please add "-F" suffix to part number above. Example: B550C-13-F.

**Marking Information**

⌋|| = 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



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



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

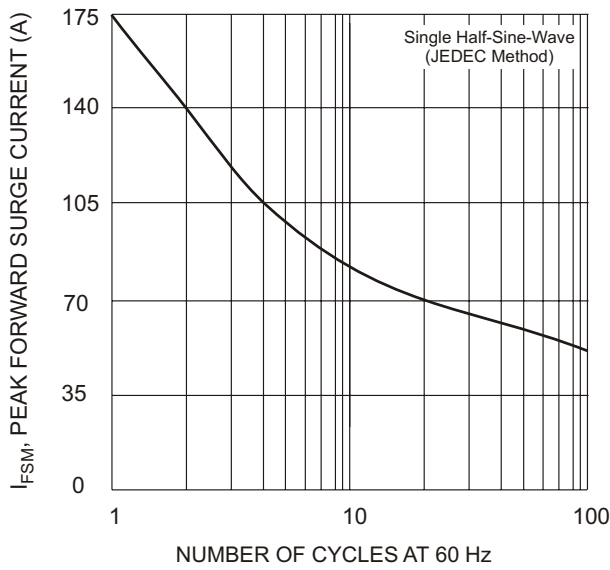


Fig. 3 Max Non-Repetitive Peak Forward Surge Current

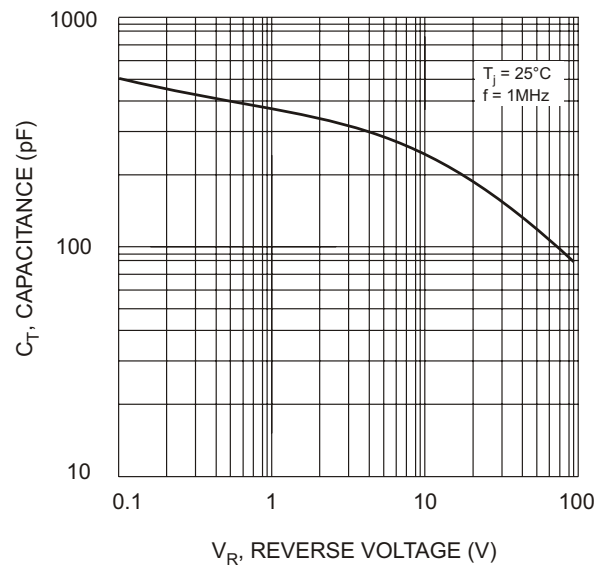


Fig. 4 Typical Total Capacitance

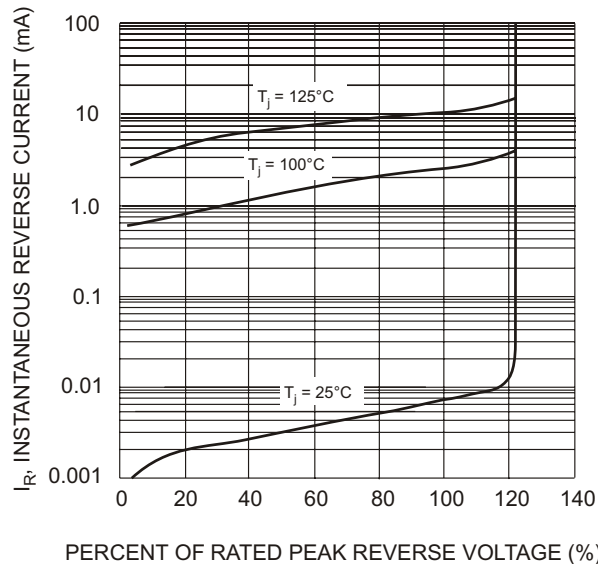


Fig. 5 Typical Reverse Characteristics