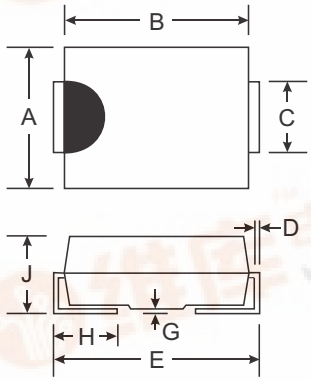
B520C - B560C

5.0A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

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)**



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		

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)

Maximum Ratings and Electrical Characteristics @ T_A = 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_{RRM} V_{RWM} V_R	20	30	40	50	60	V
RMS Reverse Voltage	$V_{R(RMS)}$	14	21	28	35	42	V
Average Rectified Output Current @ T_T = 90°C	I_O	5.0					A
Non-Repetitive Peak Forward Surge Current, 8.3 ms single half-sine-wave Superimposed on Rated Load	I_{FSM}	175					A
Forward Voltage @ I_F = 5.0A DC	V_{FM}	0.55			0.70		V
Peak Reverse Current @ T_A = 25°C at Rated DC Blocking Voltage @ T_A = 100°C	I_{RM}	0.5 20					mA
Typical Total Capacitance (Note 2)	C_T	300					pF
Thermal Resistance, Junction to Terminal	R_{JT}	10					°C/W
Thermal Resistance, Junction to Ambient (Note 1)	R_{JA}	50					°C/W
Operating Temperature Range	T_j	-55 to +125					°C
Storage Temperature Range	T_{STG}	-55 to +150					°C

Notes:
1. Thermal Resistance: Junction to ambient, unit mounted on PC board with 8.0 mm^2 (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*.

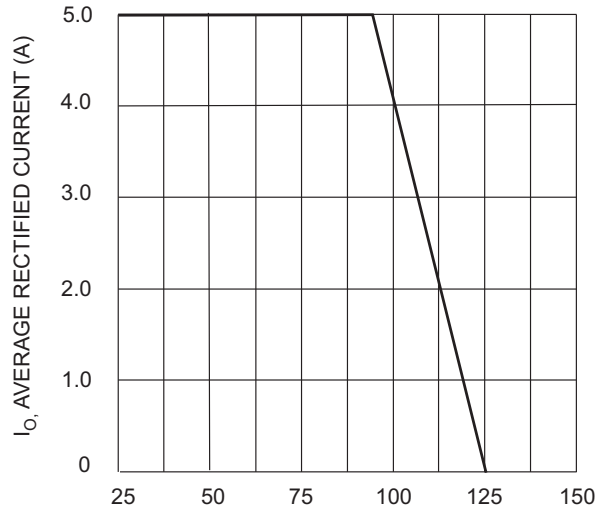


Fig. 1 Forward Current Derating Curve

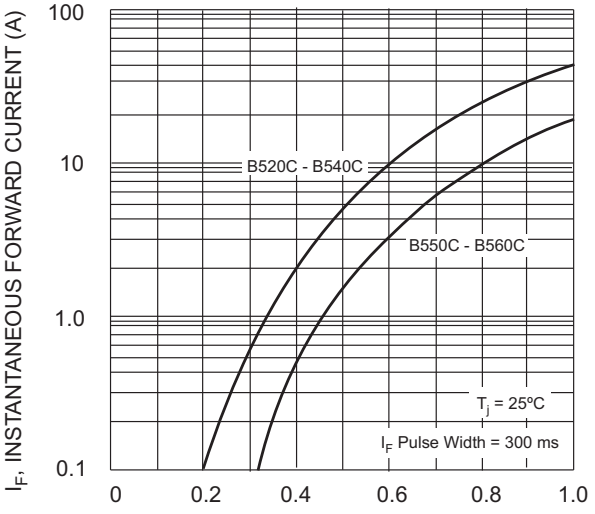


Fig. 2 Typical Forward Characteristics

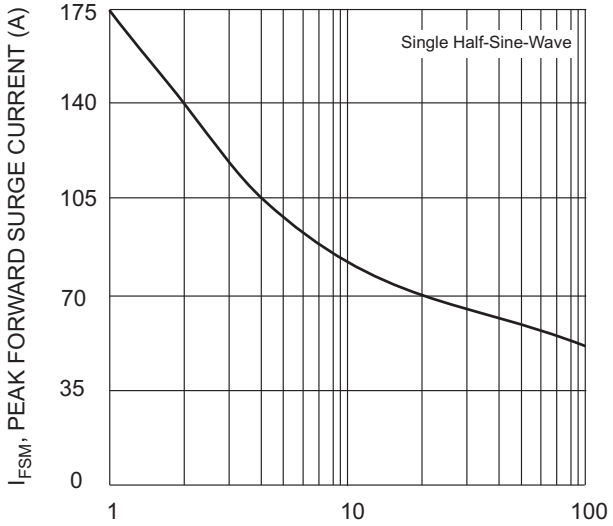


Fig. 3 Max Non-Repetitive Peak Forward Surge Current

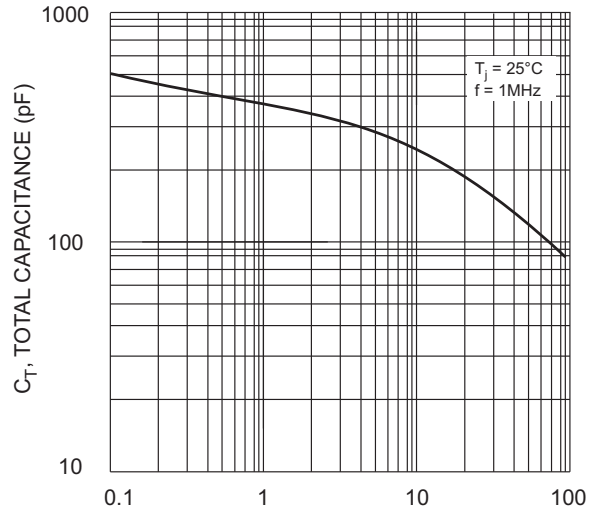


Fig. 4 Typical Total Capacitance

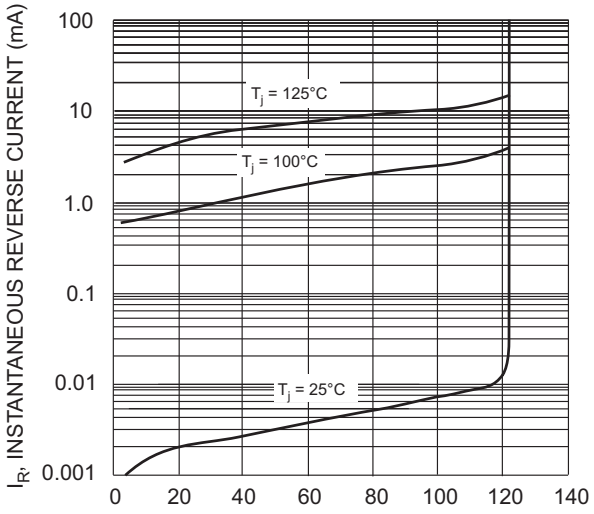


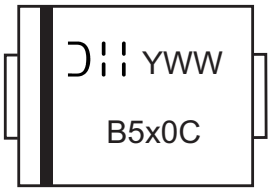
Fig. 5 Typical Reverse Characteristics

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)
= 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