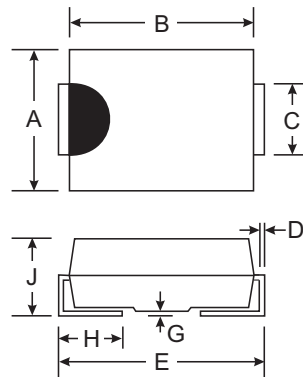


Features

- 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: See Page 2
- 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_A = 25°C unless otherwise specified

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

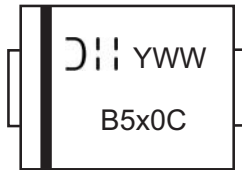
| Characteristic | Symbol | B520C | B530C | B540C | B550C | B560C | Unit |
|--|---------------------|-------------|-------|-------|-------|-------|------|
| Peak Repetitive Reverse Voltage | V _{RRM} | 20 | 30 | 40 | 50 | 60 | V |
| Working Peak Reverse Voltage | V _{RWM} | | | | | | |
| DC Blocking Voltage | V _R | | | | | | |
| 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 _{θJT} | 10 | | | | | °C/W |
| Thermal Resistance, Junction to Ambient (Note 1) | R _{θJA} | 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 mm² (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*.

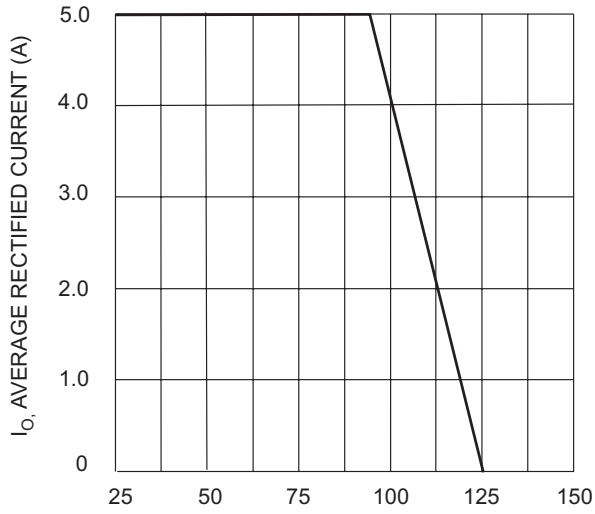
Ordering Information (Note 4)

| 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 |

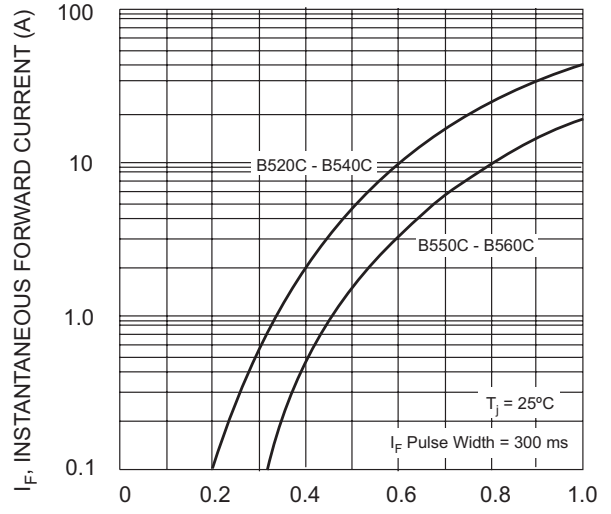
Notes: 4. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information

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



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



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

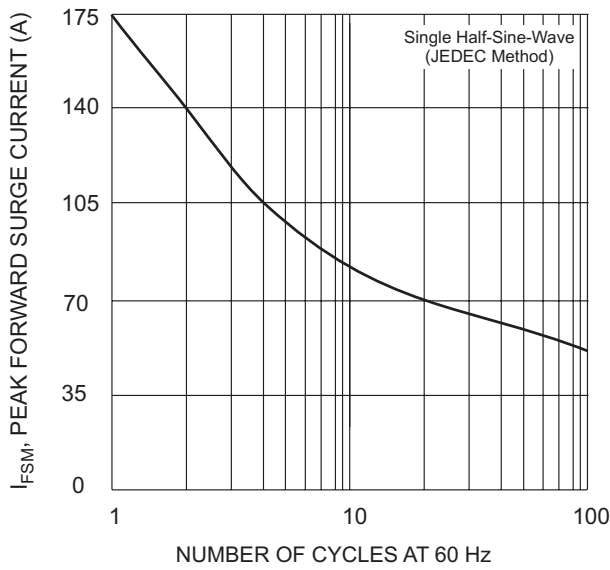
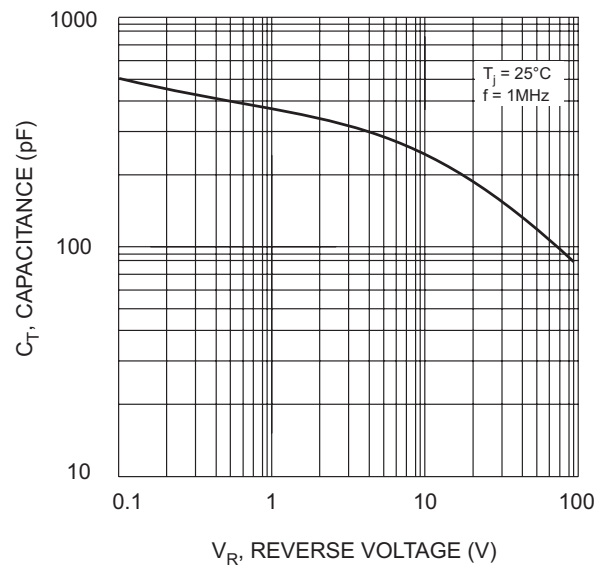


Fig. 3 Max Non-Repetitive Peak Forward Surge Current



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

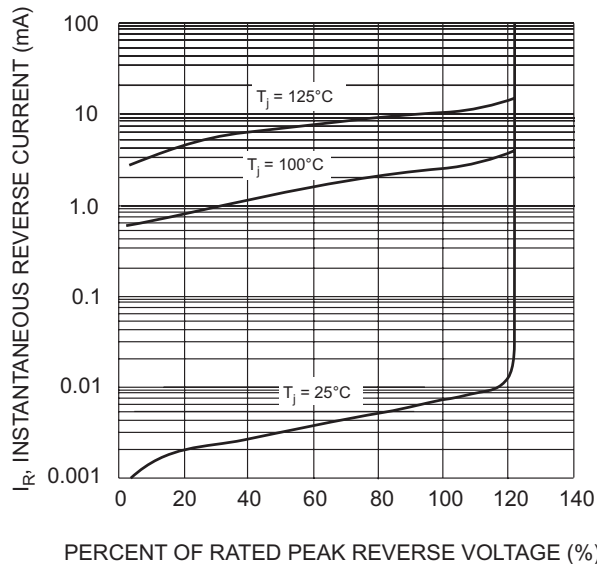


Fig. 5 Typical Reverse Characteristics

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