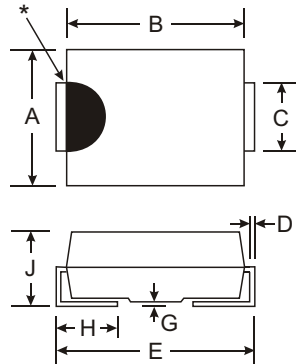


Features

- Guard Ring Die Construction for Transient Protection
- Ideally Suited for Automatic Assembly
- Low Power Loss, High Efficiency
- Surge Overload Rating to 100A Peak
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Application
- **Available in Lead Free Finish/RoHS Compliant Version (Note 4)**



| Dim | SMA | | SMB | | SMC | |
|-----------------------------|------|------|------|------|------|------|
| | Min | Max | Min | Max | Min | Max |
| A | 2.29 | 2.92 | 3.30 | 3.94 | 5.59 | 6.22 |
| B | 4.00 | 4.60 | 4.06 | 4.57 | 6.60 | 7.11 |
| C | 1.27 | 1.63 | 1.96 | 2.21 | 2.75 | 3.18 |
| D | 0.15 | 0.31 | 0.15 | 0.31 | 0.15 | 0.31 |
| E | 4.80 | 5.59 | 5.00 | 5.59 | 7.75 | 8.13 |
| G | 0.10 | 0.20 | 0.10 | 0.20 | 0.10 | 0.20 |
| H | 0.76 | 1.52 | 0.76 | 1.52 | 0.76 | 1.52 |
| J | 2.01 | 2.30 | 2.00 | 2.40 | 2.00 | 2.40 |
| All Dimensions in mm | | | | | | |

Mechanical Data

- Case: SMA/SMB/SMC
- Case Material: Molded Plastic. UL Flammability Classification 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 6, on Page 3
- Polarity: Cathode Band
- Marking: Type Number (See Page 3)
- Approximate Weight: SMA 0.064 grams
SMB 0.093 grams
SMC 0.21 grams

"A" Suffix Designates SMA Package

"B" Suffix Designates SMB Package

No Suffix Designates SMC Package

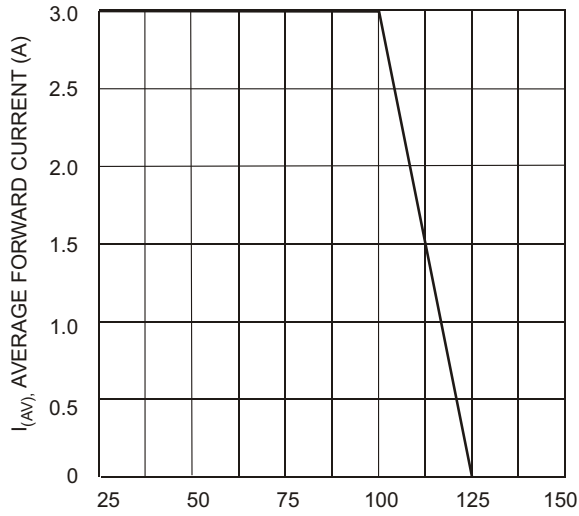
*: Note: Device may have a semicircular indentation/notch on one side of the device (as shown).

Maximum Ratings and Electrical Characteristics @ T_A = 25°C unless otherwise specified

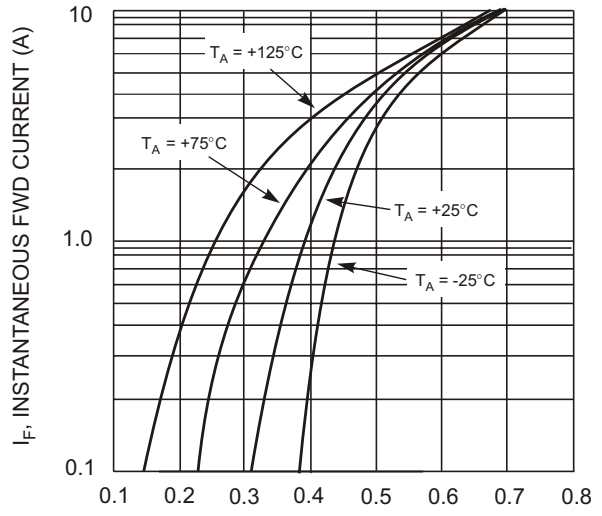
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

| Characteristic | Symbol | B320/A/B | B330/A/B | B340/A/B | B350/A/B | B360/A/B | 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 = 100°C | I _O | 3.0 | | | | | A |
| Non-Repetitive Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | I _{FSM} | 100 | | | | | A |
| Forward Voltage (Note 3) @ I _F = 3.0A | V _{FM} | 0.50 | | | 0.70 | | V |
| Peak Reverse Current @ T _A = 25°C at Rated DC Blocking Voltage (Note 3) @ T _A = 100°C | I _{RM} | 0.5 20 | | | | | mA |
| Typical Capacitance (Note 2) | C _T | 250 | | | | | pF |
| Typical Thermal Resistance, Junction to Terminal | R _{θJT} | 10 | | | | | °C/W |
| Typical 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 |

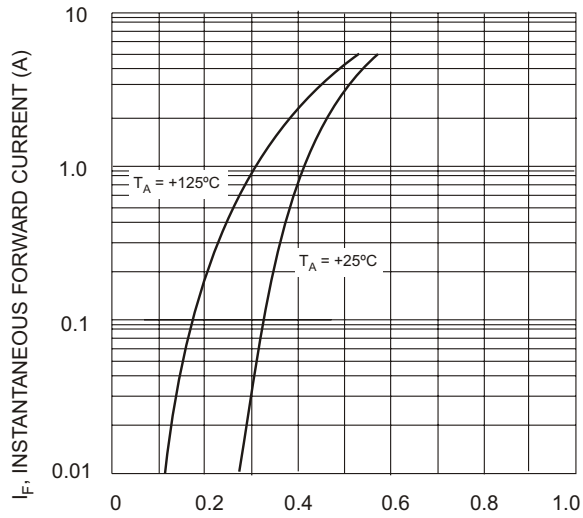
- Notes:
1. Thermal Resistance: Junction to terminal, unit mounted on PC board with 5.0 mm², 0.013 mm thick, copper pad as heat sink.
 2. Measured at 1.0 MHz and applied reverse voltage of 4.0V DC.
 3. Short duration test pulse used to minimize self-heating effect.
 4. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex Notes 5 and 7*.



T_T , TERMINAL TEMPERATURE ($^{\circ}\text{C}$)
Fig. 1 Forward Current Derating Curve



V_F , INSTANTANEOUS FORWARD VOLTAGE (V)
Fig. 2 Typical Forward Characteristics - B320/A/B thru B340/A/B



V_F , INSTANTANEOUS FORWARD VOLTAGE (V)
Fig. 3 Typ. Forward Characteristics - B350/A/B thru B360/A/B

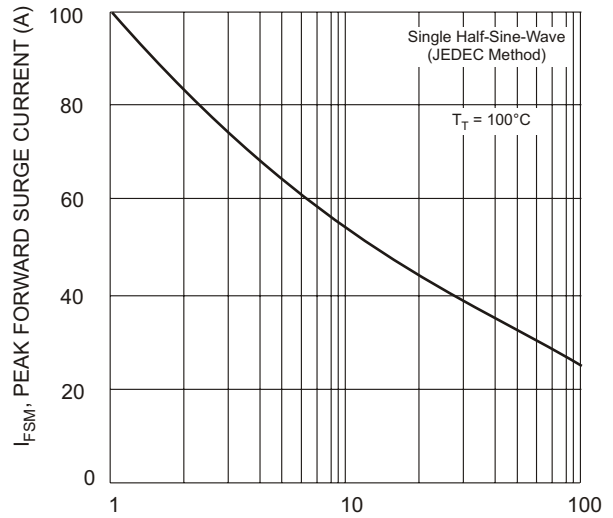
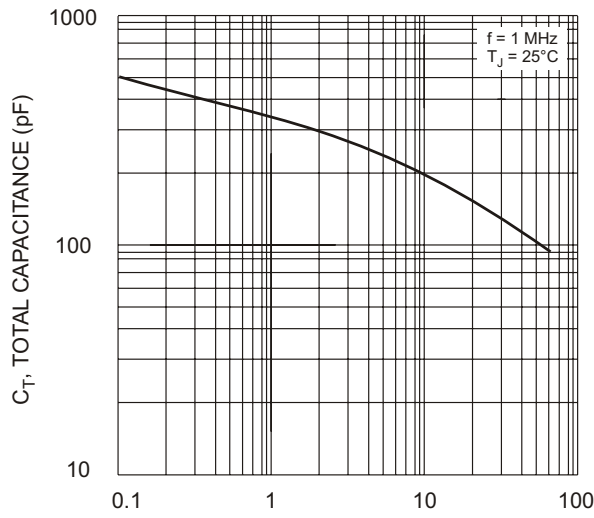
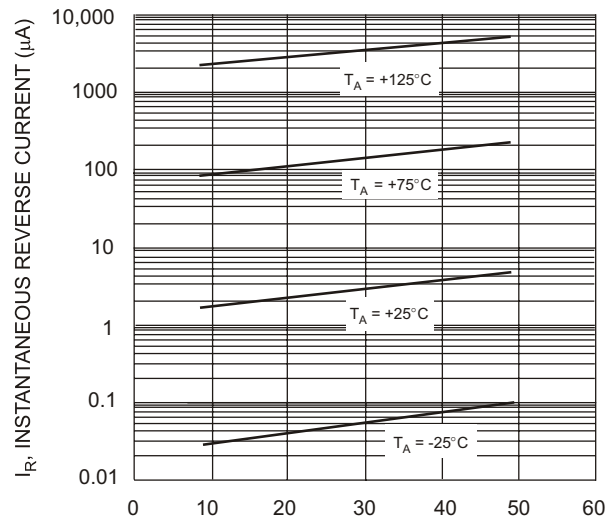


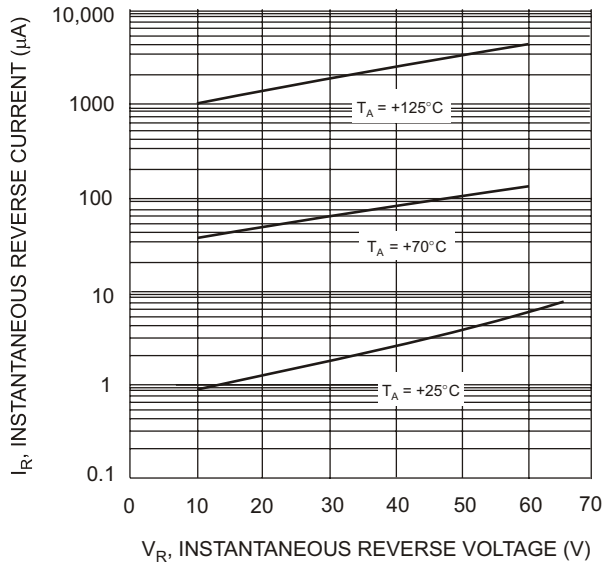
Fig. 4 Max Non-Repetitive Peak Fwd Surge Current



V_R , REVERSE VOLTAGE (V)
Fig. 5 Typical Capacitance



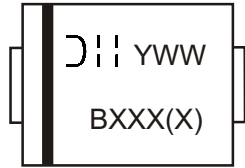
V_R , INSTANTANEOUS REVERSE VOLTAGE (V)
Fig. 6 Typical Reverse Characteristics, B320/A/B thru B340/A/B



Ordering Information (Note 5 & 6)

| Device* | Packaging | Shipping |
|----------|-----------|------------------|
| B3XXA-13 | SMA | 5000/Tape & Reel |
| B3XXB-13 | SMB | 3000/Tape & Reel |
| B3XX-13 | SMC | 3000/Tape & Reel |

- Notes: 5. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.
 6. For Lead Free Finish/RoHS Compliant part number, please add "-F" suffix to the part number above. Example: B320A-13-F.
 * xx = Device type, e.g. B320A-13 (SMA package); B320B-13 (SMB package); B320-13 (SMC Package).



BXXX = Product type marking code, ex: B320 (SMC package)
 BXXXX = Product type marking code, ex: B320A (SMA package)
 D|| = Manufacturers' code marking
 YWW = Date code marking
 Y = Last digit of year ex: 2 for 2002
 WW = Week code 01 to 52

Note: Device has a cathode band (as shown above) and may also have a cathode notch (as shown on Page 1).