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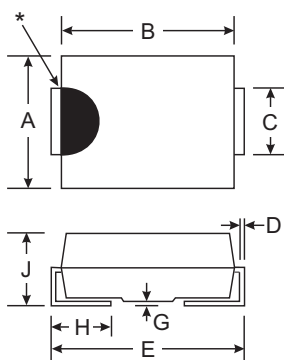


# B320/A/B - B360/A/B

## 3.0A 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 100A Peak
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Application
- **Lead Free Finish/RoHS Compliant (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: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208
- 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

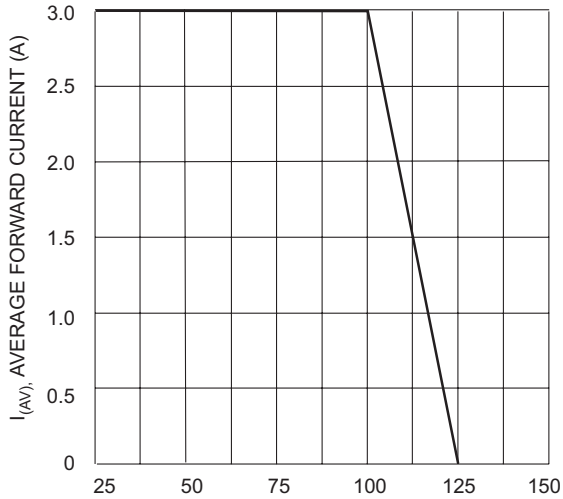
\*: Note: Device may have a semicircular indentation/notch on one side of the device (as shown).

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

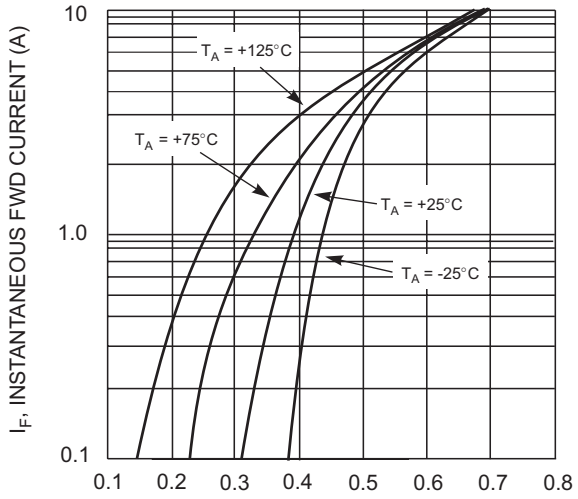
Single phase, half wave, 60Hz, resistive or inductive load.  
 For capacitive load, derate current by 20%.

| Characteristic   | Symbol   | B320/A/B    | B330/A/B | B340/A/B | B350/A/B | B360/A/B | Unit |
|--|--|-------------|----------|----------|----------|----------|------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                           | V <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>R</sub> | 20          | 30       | 40       | 50       | 60       | V    |
| RMS Reverse Voltage  | V <sub>R(RMS)</sub>                                    | 14          | 21       | 28       | 35       | 42       | V    |
| Average Rectified Output Current @ T <sub>T</sub> = 100°C  | I <sub>O</sub>   | 3.0         |          |          |          |          | A    |
| Non-Repetitive Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | I <sub>FSM</sub>                                       | 100         |          |          |          |          | A    |
| Forward Voltage (Note 3) @ I <sub>F</sub> = 3.0A   | V <sub>FM</sub>  | 0.50        |          |          | 0.70     |          | V    |
| Peak Reverse Current at Rated DC Blocking Voltage (Note 3) @ T <sub>A</sub> = 25°C<br>@ T <sub>A</sub> = 100°C   | I <sub>RM</sub>  | 0.5<br>20   |          |          |          |          | mA   |
| Typical Capacitance (Note 2)   | C <sub>T</sub>   | 250         |          |          |          |          | pF   |
| Typical Thermal Resistance, Junction to Terminal   | R <sub>θJT</sub>                                       | 10          |          |          |          |          | °C/W |
| Typical 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   |

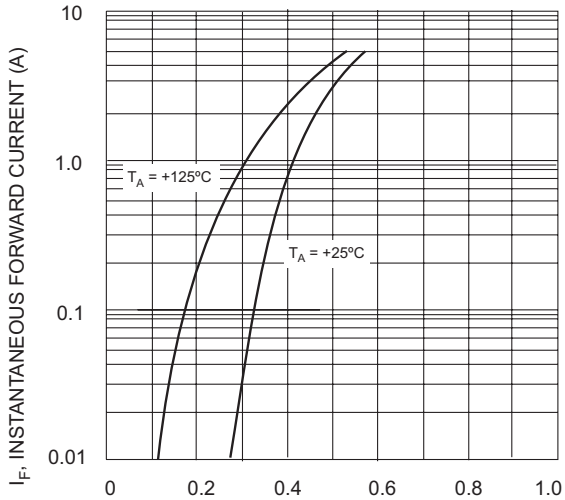
- Notes:
1. Thermal Resistance: Junction to terminal, unit mounted on PC board with 5.0 mm<sup>2</sup>, 0.013 mm thick, copper pad as heat sink.
  2. Measured at 1.0 MHz and applied reverse voltage of 4.0V DC.
  3. Short duration test pulse used to minimize self-heating effect.
  4. RoHS revision 13.2.2003.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



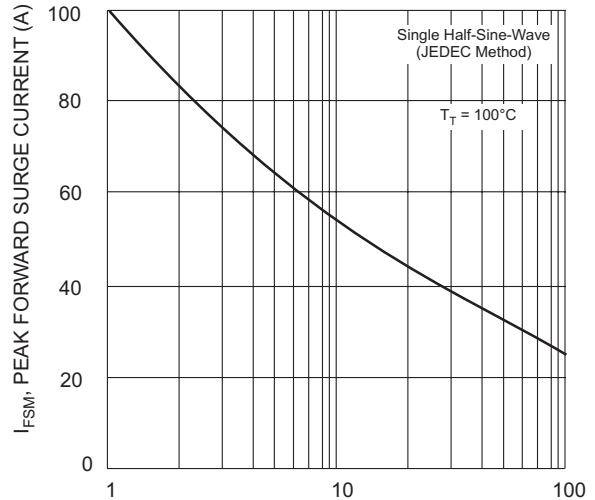
$T_T$ , TERMINAL TEMPERATURE ( $^{\circ}C$ )  
Fig. 1 Forward Current Derating Curve



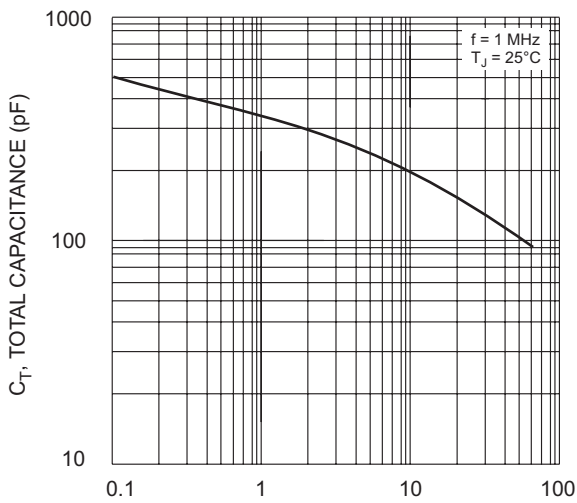
$V_F$ , INSTANTANEOUS FORWARD VOLTAGE (V)  
Fig. 2 Typical Forward Characteristics - B320/A/B thru B340/A/B



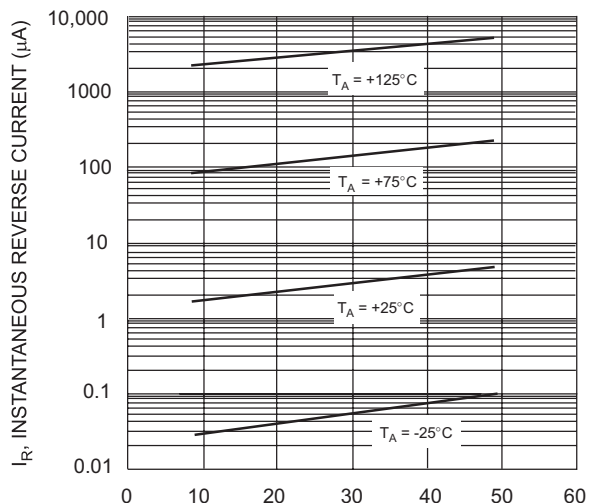
$V_F$ , INSTANTANEOUS FORWARD VOLTAGE (V)  
Fig. 3 Typ. Forward Characteristics - B350/A/B thru B360/A/B



NUMBER OF CYCLES AT 60 Hz  
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

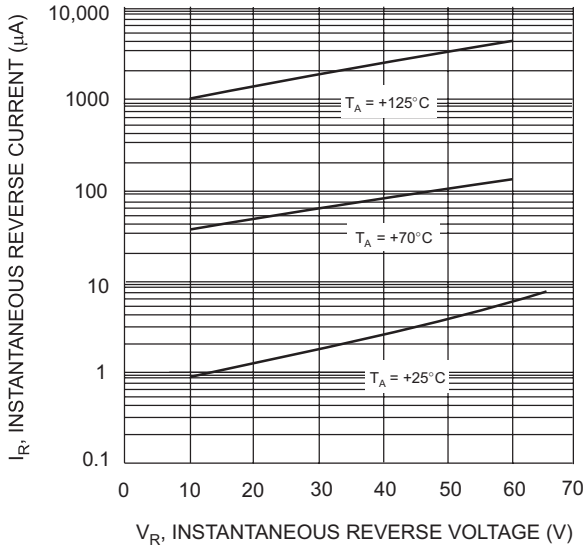


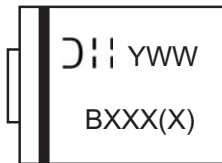
Fig. 7 Typical Reverse Characteristics, B350/A/B thru B360/A/B

### Ordering Information (Note 5)

| 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>.

\* xx = Device type, e.g. B320A-13-F (SMA package); B320B-13-F (SMB package); B320-13-F (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).

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