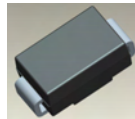


**3.0A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER**
**Features**

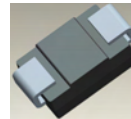
- Guard Ring Die Construction for Transient Protection
- Ideally Suited for Automated Assembly
- Low Power Loss, High Efficiency
- Surge Overload Rating to 100A Peak
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Application
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **Green Molding Compound (No Halogen and Antimony) (Note 4)**

**Mechanical Data**

- Case: SMA
- Case Material: Molded Plastic. UL Flammability Classification 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 **e3**
- Polarity: Cathode Band
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.064 grams (approximate)



Top View



Bottom View

**Maximum Ratings** @ $T_A = 25^\circ\text{C}$  unless otherwise specified

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

| Characteristic   | Symbol    | B320A | B330A | B340A | B350A | B360A | Unit |
|--|-----------|-------|-------|-------|-------|-------|------|
| Peak Repetitive Reverse Voltage  | $V_{RRM}$ |       |       |       |       |       |      |
| Working Peak Reverse Voltage   | $V_{RWM}$ | 20    | 30    | 40    | 50    | 60    | V    |
| DC Blocking Voltage  | $V_R$     |       |       |       |       |       |      |
| Average Rectified Output Current @ $T_T = 100^\circ\text{C}$                                     | $I_O$     |       |       | 3.0   |       |       | A    |
| Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load | $I_{FSM}$ |       |       | 80    |       |       | A    |

**Thermal Characteristics**

| Characteristic   | Symbol          | Value       | Unit               |
|--|-----------------|-------------|--------------------|
| Typical Thermal Resistance, Junction to Terminal         | $R_{\theta JT}$ | 25          | $^\circ\text{C/W}$ |
| Typical Thermal Resistance, Junction to Ambient (Note 2) | $R_{\theta JA}$ | 100         | $^\circ\text{C/W}$ |
| Operating Temperature Range                              | $T_J$           | -55 to +125 | $^\circ\text{C}$   |
| Storage Temperature Range                                | $T_{STG}$       | -55 to +150 | $^\circ\text{C}$   |

**Electrical Characteristics** @ $T_A = 25^\circ\text{C}$  unless otherwise specified

| Characteristic           | Symbol | Min | Typ | Max          | Unit | Test Condition  |
|--------------------------|--------|-----|-----|--------------|------|---|
| Forward Voltage Drop     | $V_F$  | -   | -   | 0.50<br>0.70 | V    | $I_F = 3.0\text{A}, T_A = 25^\circ\text{C}$                                     |
| Leakage Current (Note 3) | $I_R$  | -   | -   | 0.5<br>20    | mA   | @ Rated $V_R, T_A = 25^\circ\text{C}$<br>@ Rated $V_R, T_A = 100^\circ\text{C}$ |
| Total Capacitance        | $C_T$  | -   | -   | 200          | pF   | $V_R = 4\text{V}, f = 1\text{MHz}$  |

- Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied. Please visit our website at [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html).
  2. Thermal Resistance: Junction to terminal, unit mounted on glass epoxy substrate with 2x3mm copper pad.
  3. Short duration pulse test used to minimize self-heating effect.
  4. Product manufactured with Data Code 0924 (week 24, 2009) and newer are built with Green Molding Compound.

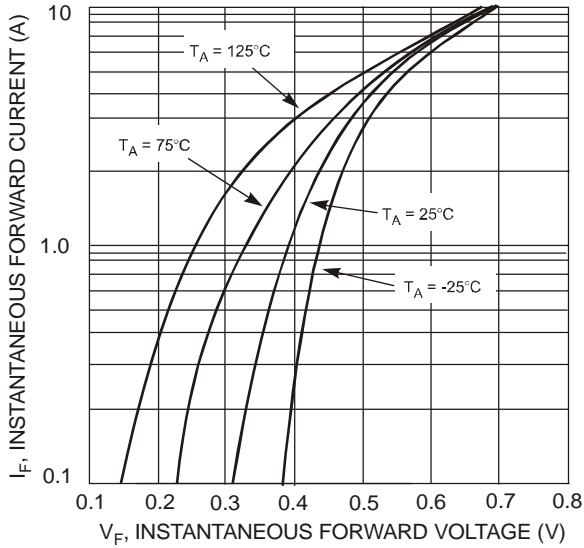


Fig. 1 Typical Forward Characteristics - B320A thru B340A

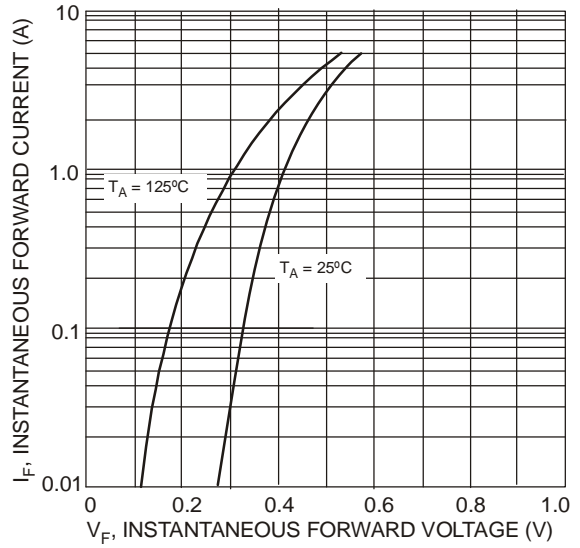


Fig. 2 Typ. Forward Characteristics - B350A thru B360A

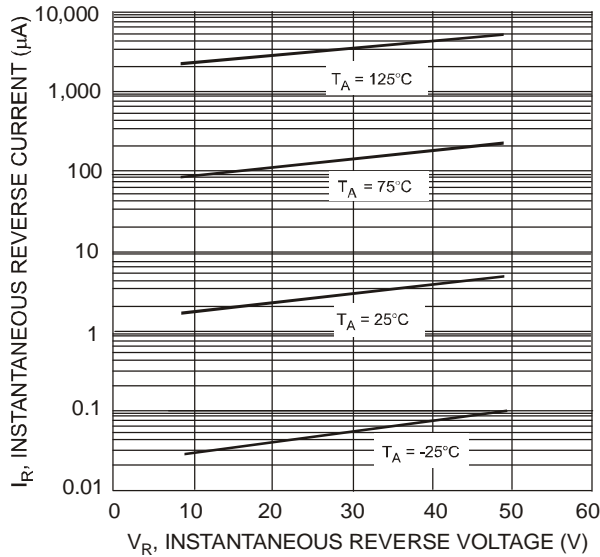


Fig. 3 Typical Reverse Characteristics, B320A thru B340A

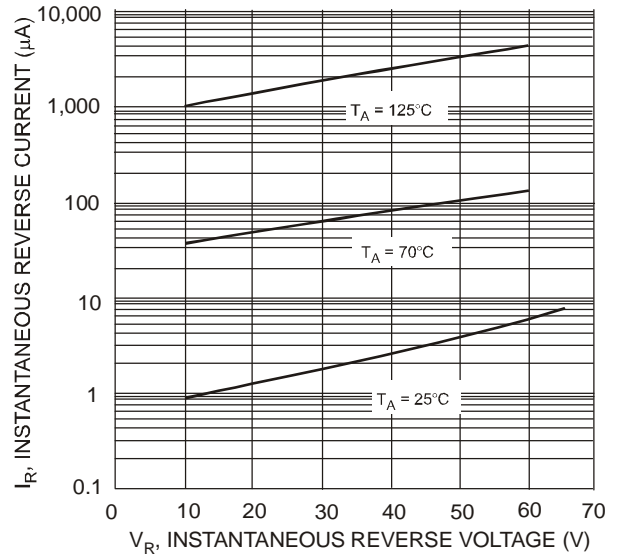


Fig. 4 Typical Reverse Characteristics, B350A thru B360A

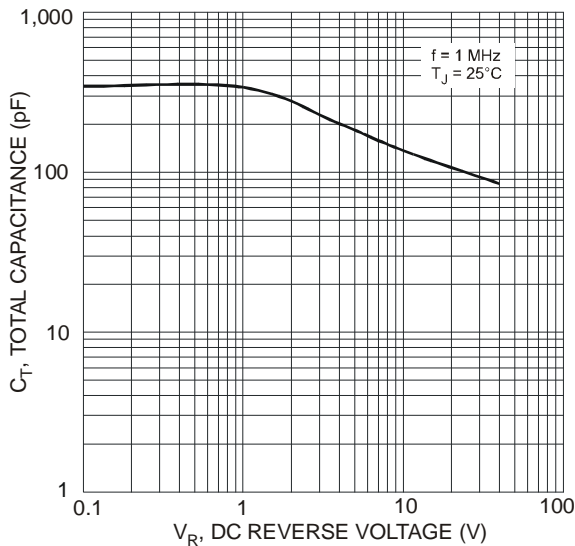


Fig. 5 Total Capacitance vs. Reverse Voltage

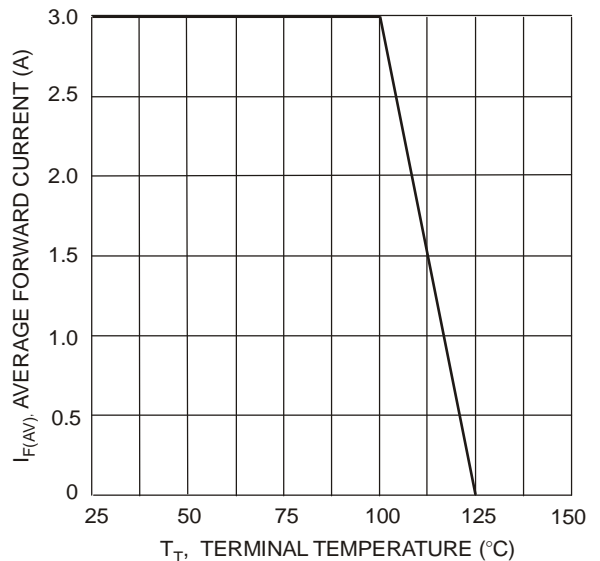


Fig. 6 Forward Current Derating Curve

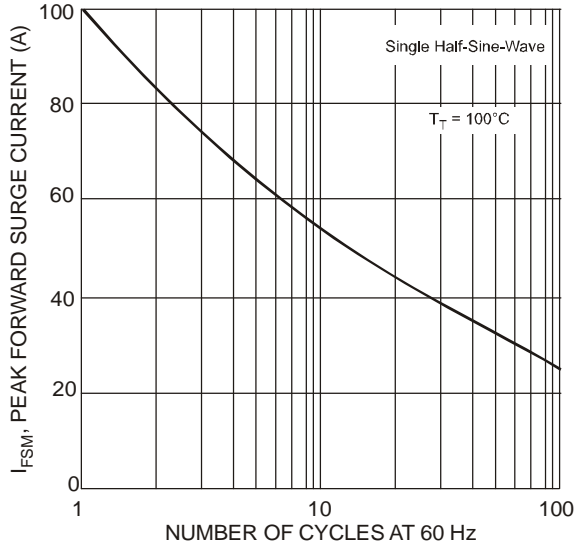


Fig. 7 Max Non-Repetitive Peak Fwd Surge Current

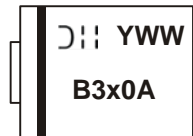
**Ordering Information** (Note 5)

| Part Number* | Case | Packaging        |
|--------------|------|------------------|
| B3XXA-13-F   | SMA  | 5000/Tape & Reel |

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

Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

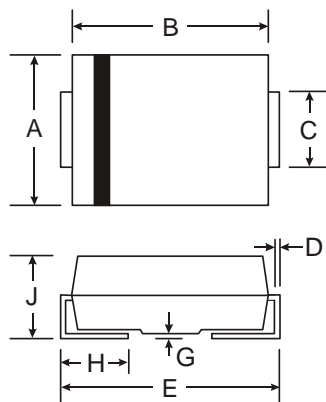
**Marking Information** (Note 6)



B3x0A = Product type marking code, ex: B320A  
 )|| = Manufacturers' code marking  
 YWW = Date code marking  
 Y = Last digit of year (ex: 2 for 2002)  
 WW = Week code 01 to 52

Notes: 6. Device has a cathode band (as shown above) and may also have a cathode notch.

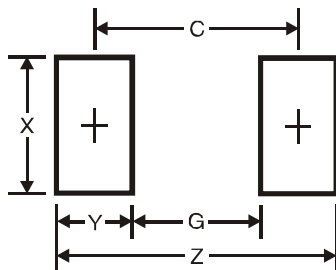
**Package Outline Dimensions**



| SMA |      |      |
|-----|------|------|
| Dim | Min  | Max  |
| A   | 2.29 | 2.92 |
| B   | 4.00 | 4.60 |
| C   | 1.27 | 1.63 |
| D   | 0.15 | 0.31 |
| E   | 4.80 | 5.59 |
| G   | 0.05 | 0.20 |
| H   | 0.76 | 1.52 |
| J   | 2.01 | 2.30 |

All Dimensions in mm

## Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| Z          | 6.5           |
| G          | 1.5           |
| X          | 1.7           |
| Y          | 2.5           |
| C          | 4.0           |

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