

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

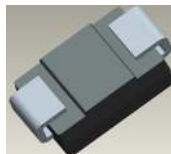
- Guard Ring Die Construction for Transient Protection
- Ideally Suited for Automated Assembly
- Low Power Loss, High Efficiency
- Surge Overload Rating to 125A Peak
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Application
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **PPAP Capable (Note 4)**

**Mechanical Data**

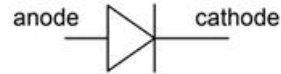
- Case: SMB
- Case Material: Molded Plastic. "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 **(e3)**
- Polarity: Cathode Band
- Weight: 0.093 grams (approximate)



Top View



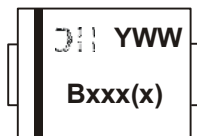
Bottom View


**Ordering Information** (Note 5)

Part Number*	Compliance	Case	Packaging
B3xxB-13-F	Standard	SMB	3000/Tape & Reel
B340BQ-13-F	Automotive	SMB	3000/Tape & Reel

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

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. Automotive products are AEC-Q101 qualified and are PPAP capable. Automotive, AEC-Q101 and standard products are electrically and thermally the same, except where specified. For more information, please refer to [http://www.diodes.com/quality/product\\_compliance\\_definitions/](http://www.diodes.com/quality/product_compliance_definitions/).
  5. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

**Marking Information**


Bxxx(x) = Product type marking code, ex: B320B  
 311 = Manufacturers' code marking  
 YWW = Date code marking  
 Y = Last digit of year (ex: 3 for 2013)  
 WW = Week code (01 to 53)

### 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	B320B	B330B	B340B/ B340BQ	B350B	B360B	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	20	30	40	50	60	V
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	$I_{FSM}$	100					A

### Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Terminal (Note 6)	$R_{\theta JT}$	25	$^\circ\text{C}/\text{W}$
Typical Thermal Resistance, Junction to Ambient (Note 6)	$R_{\theta JA}$	95	$^\circ\text{C}/\text{W}$
Operating Temperature Range	$T_J$	-55 to +150	$^\circ\text{C}$
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 B320B, B330B, B340B, B340BQ B350B, B360B	$V_F$	—	—	0.50 0.70	V	$I_F = 3.0\text{A}$ , $T_A = +25^\circ\text{C}$
Leakage Current (Note 7)	$I_R$	—	—	0.5 20	mA	@ Rated $V_R$ , $T_A = +25^\circ\text{C}$ @ 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: 6. Thermal Resistance: Junction to terminal, unit mounted on glass epoxy substrate with 2x3mm copper pad.  
7. Short duration pulse test used to minimize self-heating effect.

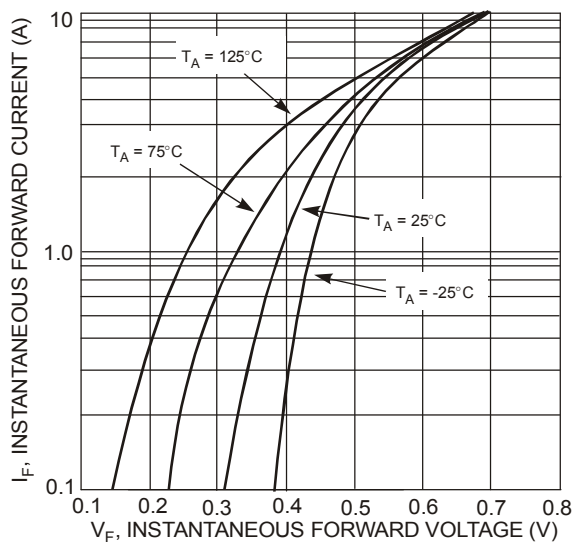


Figure 1 Typical Forward Characteristics - B320B thru B340B

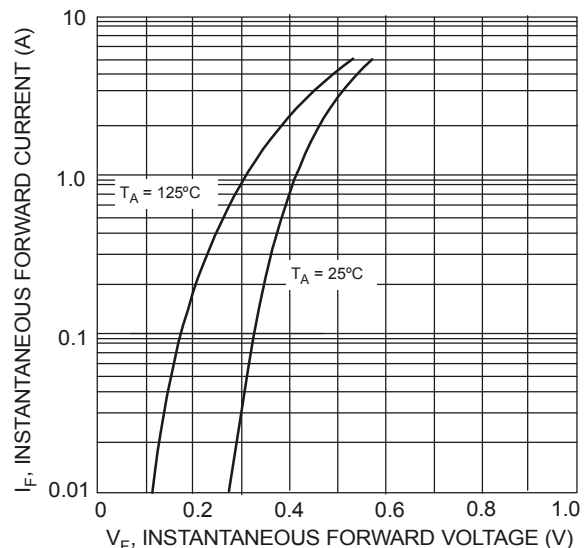


Figure 2 Typical Forward Characteristics - B350B thru B360B

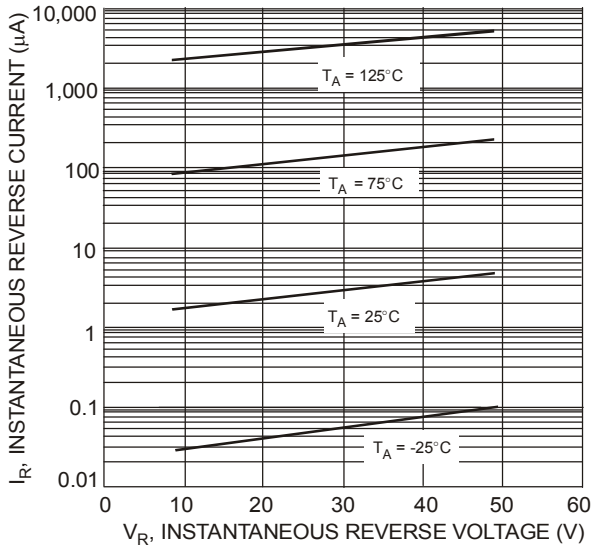


Figure 3 Typical Reverse Characteristics, B320B thru B340B

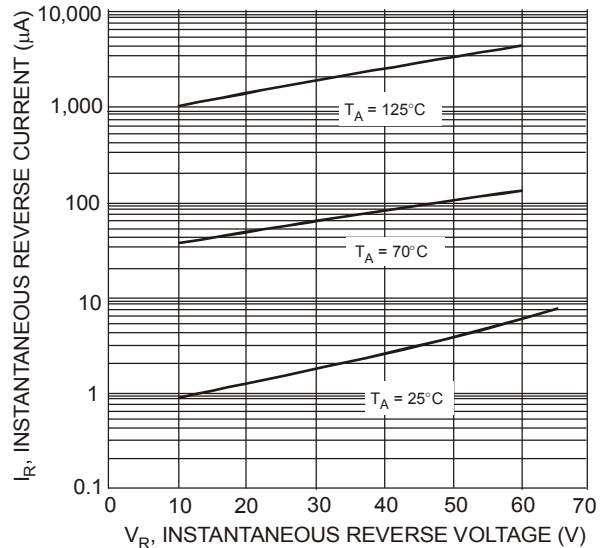


Figure 4 Typical Reverse Characteristics, B350B thru B360B

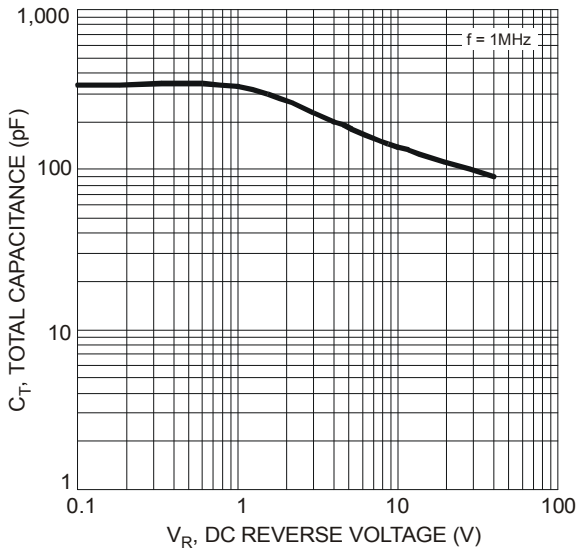


Figure 5 Total Capacitance vs. Reverse Voltage

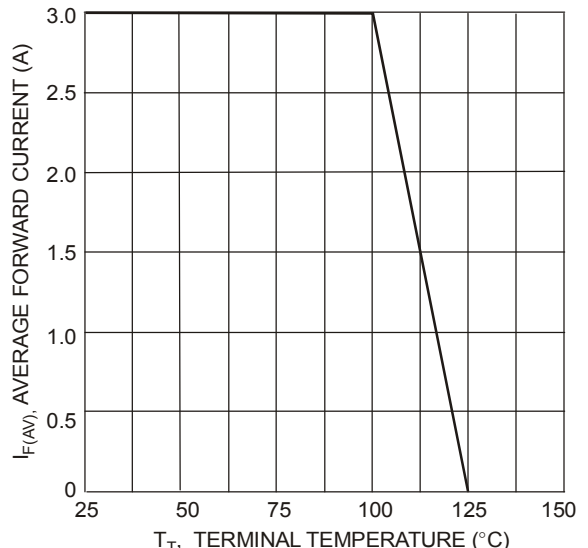


Figure 6 Forward Current Derating Curve

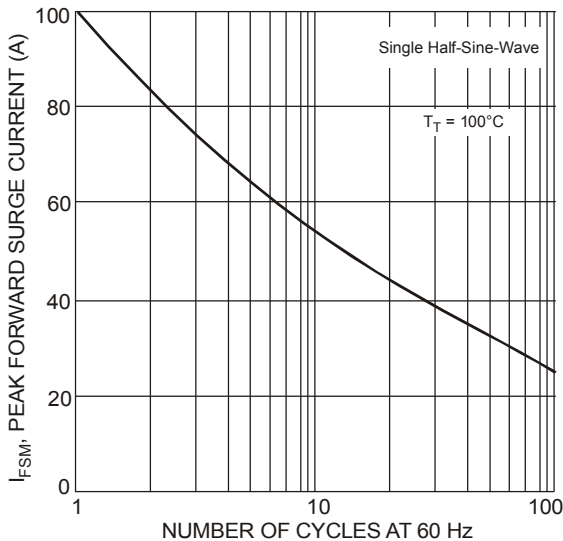
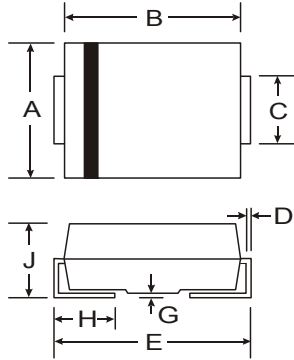


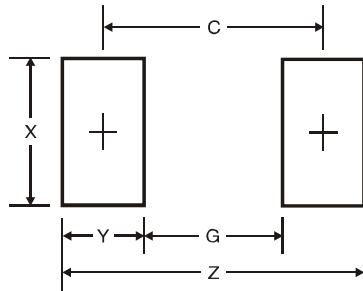
Figure 7 Max Non-Repetitive Peak Forward Surge Current

**Package Outline Dimensions**



SMB		
Dim	Min	Max
A	3.30	3.94
B	4.06	4.57
C	1.96	2.21
D	0.15	0.31
E	5.00	5.59
G	0.05	0.20
H	0.76	1.52
J	2.00	2.50
All Dimensions in mm		

**Suggested Pad Layout**



Dimensions	Value (in mm)
Z	6.8
G	1.8
X	2.3
Y	2.5
C	4.3

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