3.0A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

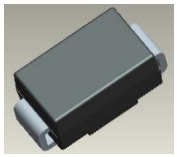
Features

- 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 Applications
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please contact us or your local Diodes representative. https://www.diodes.com/quality/product-definitions/**
- **An Automotive-Compliant Part is Available Under Separate Datasheet (B340BQ–B360BQ)**

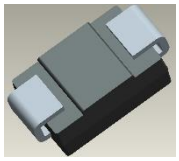
Mechanical Data

- Package: SMB
- Package 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)

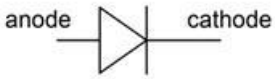
SMB



Top View



Bottom View



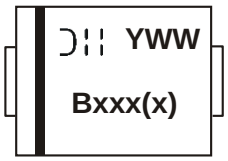
Ordering Information (Note 4)

Part Number*	Compliance	Package	Packing	
			Qty.	Carrier
B3xxB-13-F	Commercial	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) & 2015/863/EU (RoHS 3) compliant.
2. See https://www.diodes.com/quality/lead-free/ 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. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.

Marking Information



Bxxx(x) = Product Type Marking Code, ex: B320B
= Manufacturer's Code Marking
YWW = Date Code Marking
Y = Last Digit of Year (ex: 2 for 2022)
WW = Week Code (01 to 53)

Maximum Ratings (@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	B320B	B330B	B340B	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°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 5)	$R_{\theta JT}$	25	°C/W
Typical Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	95	°C/W
Operating Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	B320B, B330B, B340B B350B, B360B	V_F	— —	— —	0.50 0.70	V	I_F = 3.0A, T_A = +25°C
Leakage Current (Note 6)		I_R	— —	— —	0.5 20	mA	@ Rated V_R, T_A = +25°C @ Rated V_R, T_A = +100°C
Total Capacitance		C_T	—	200	—	pF	V_R = 4V, f = 1MHz

Notes: 5. Thermal resistance: Junction to terminal, unit mounted on glass epoxy substrate with 2 x 3mm copper pad.
6. Short duration pulse test used to minimize self-heating effect.

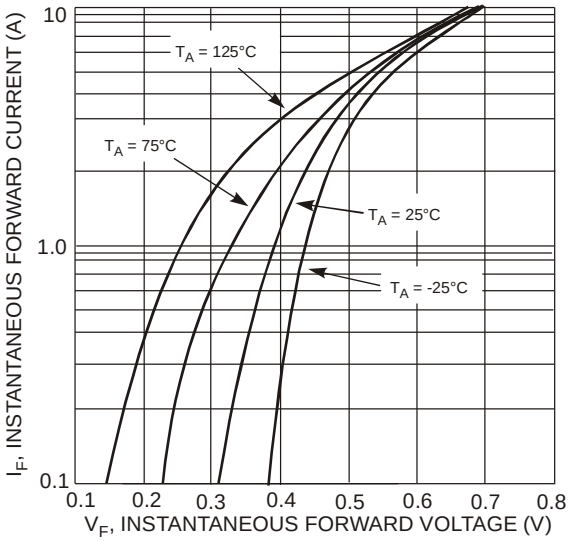


Figure 1 Typical Forward Characteristics - B320B thru B340B

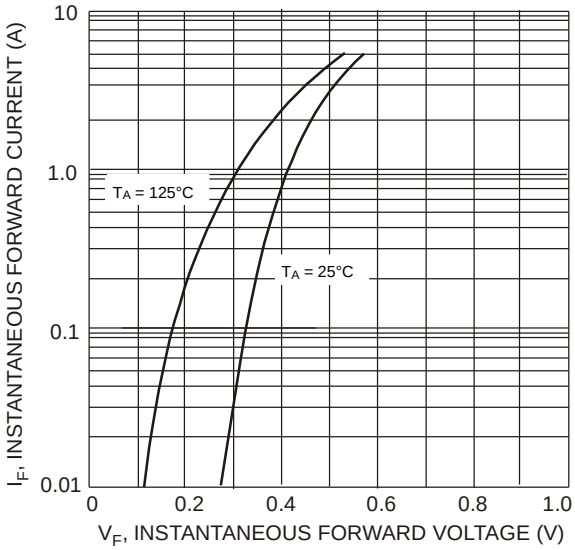


Figure 2 Typical Forward Characteristics - B350B thru B360B

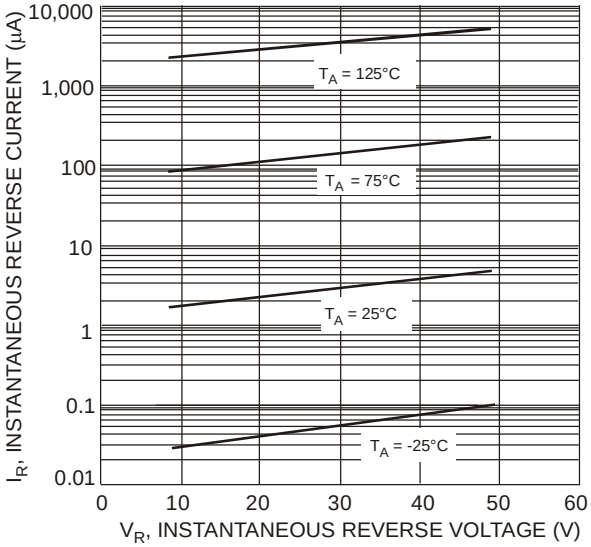


Figure 3 Typical Reverse Characteristics, B320B thru B340B

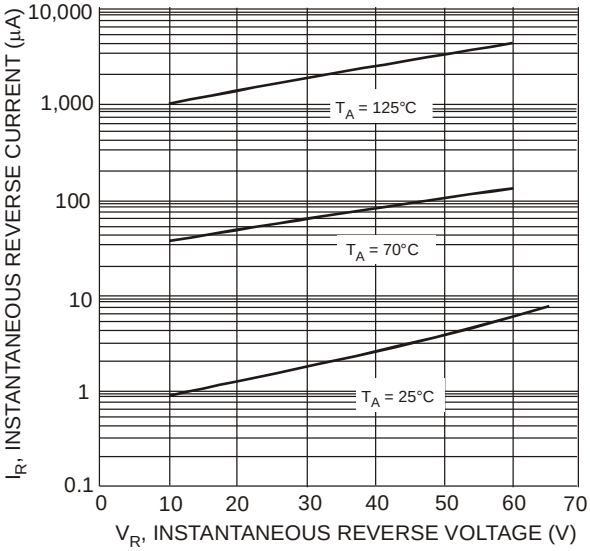


Figure 4 Typical Reverse Characteristics, B350B thru B360B

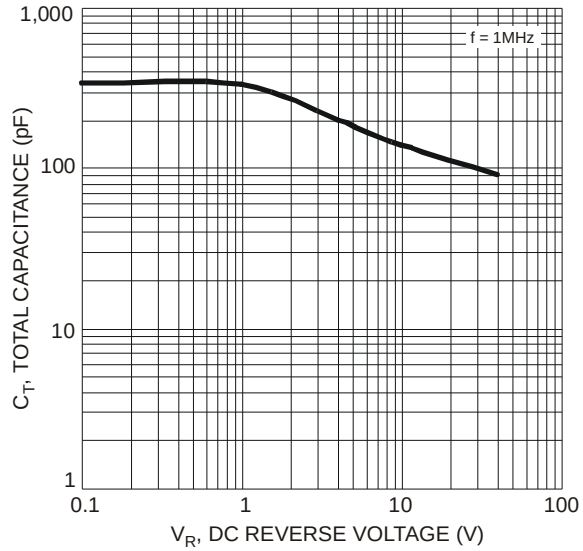


Figure 5 Total Capacitance vs. Reverse Voltage

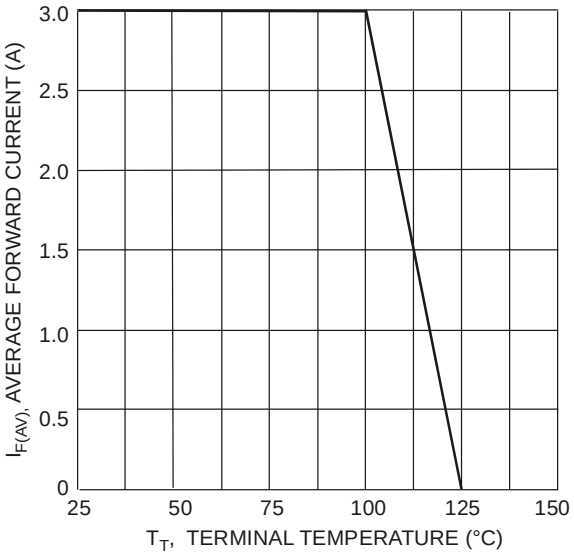


Figure 6 Forward Current Derating Curve

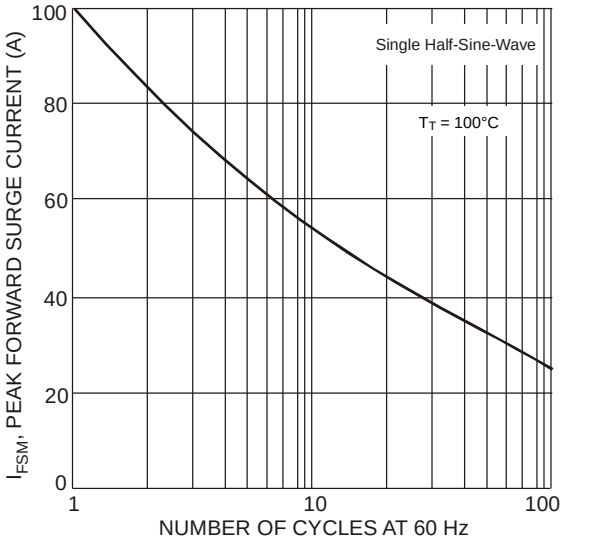
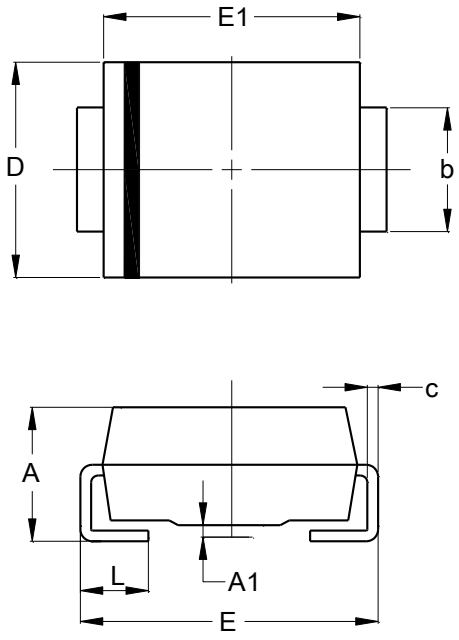


Figure 7 Max Non-Repetitive Peak Forward Surge Current

Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

SMB

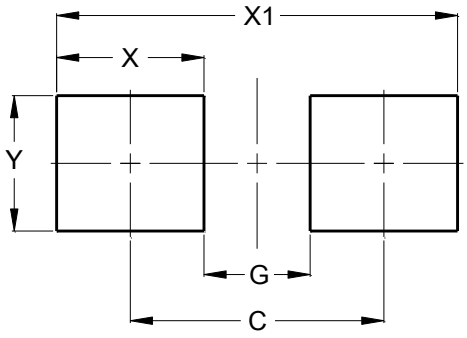


SMB		
Dim	**Min**	**Max**
A	2.00	2.50
A1	0.05	0.20
b	1.96	2.21
c	0.15	0.31
D	3.30	3.94
E	5.00	5.59
E1	4.06	4.57
L	0.76	1.52
All Dimensions in mm		

Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.

SMB



Dimensions	Value (in mm)
C	4.30
G	1.80
X	2.50
X1	6.80
Y	2.30

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