3.0A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

Product Summary

B320/B330/B340

V_{RRM} (V)	I_O (A)	V_F max (V)	I_R max (mA)
20/30/40	3.0	0.5	0.5

B350/B360

V_{RRM} (V)	I_O (A)	V_F max (V)	I_R max (mA)
50/60	3.0	0.7	0.5

Features and Benefits

- 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
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **B340Q-13-F Qualified to AEC-Q101 standards for High Reliability**

Description and Applications

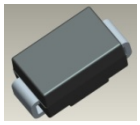
This Schottky Barrier Rectifier has been designed to meet the general requirements of commercial applications. It is ideally suited fc use as:

- Polarity Protection Diode
- Re-Circulating Diode
- Switching Diode

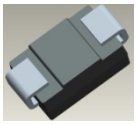
Mechanical Data

- Case: SMC
- 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: 0.21 grams (approximate)

SMC



Top View



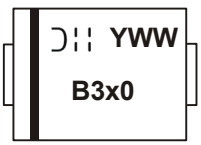
Bottom View

Ordering Information (Notes 4 & 5)

Part Number	Compliance	Case	Packaging
B3x0-13-F	Commercial	SMC	3000/Tape & Reel
B340Q-13-F (Note 5)	Automotive	SMC	3000/Tape & Reel

Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
2. See 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. For packaging details, go to our website at http://www.diodes.com/products/packages.html
5. Other automotive grade 'Q' parts evaluated upon request.

Marking Information (Note 6)



B3x0 = Product type marking code, ex: B320
= Manufacturers' code marking
YWW = Date code marking
Y = Last digit of year (ex: 13 for 2013)
WW = Week code (01 to 53)

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

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

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

Characteristic	Symbol	B320	B330	B340	B350	B360	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	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	$R_{\theta JT}$	20	°C/W
Typical Thermal Resistance, Junction to Ambient (Note 7)	$R_{\theta JA}$	90	°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 B320, B330, B340 B350, B360	V_F	— —	— —	0.50 0.70	V	I_F = 3.0A, T_A = +25°C
Leakage Current (Note 8)	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: 7. Thermal Resistance: Junction to terminal, unit mounted on glass epoxy substrate with 2x3mm copper pad
8. Short duration pulse test used to minimize self-heating effect.

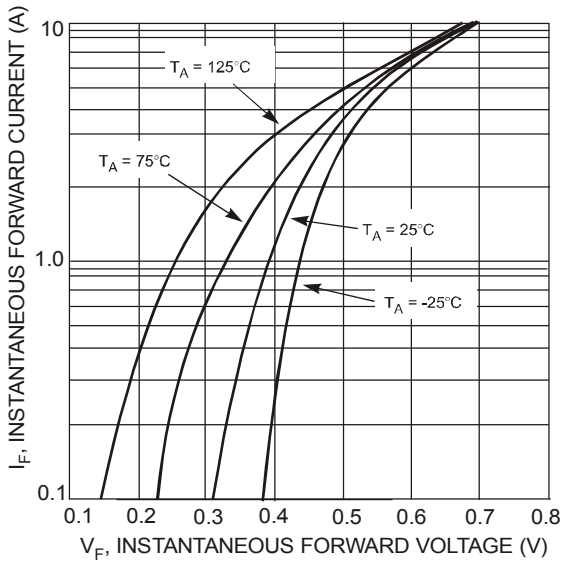


Fig. 1 Typical Forward Characteristics - B320B thru B340B

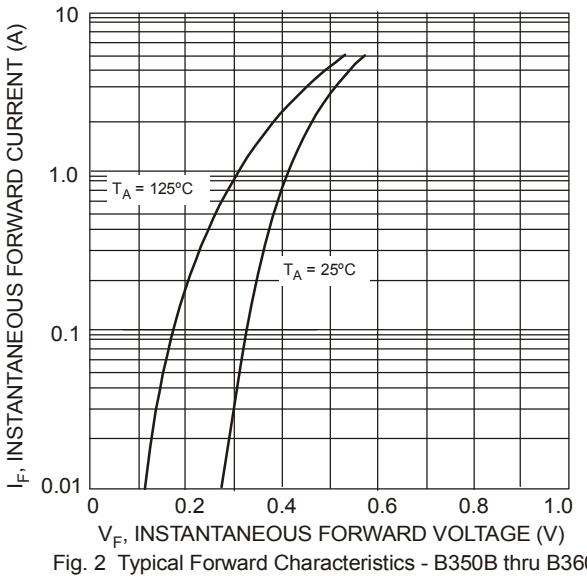


Fig. 2 Typical Forward Characteristics - B350B thru B360B

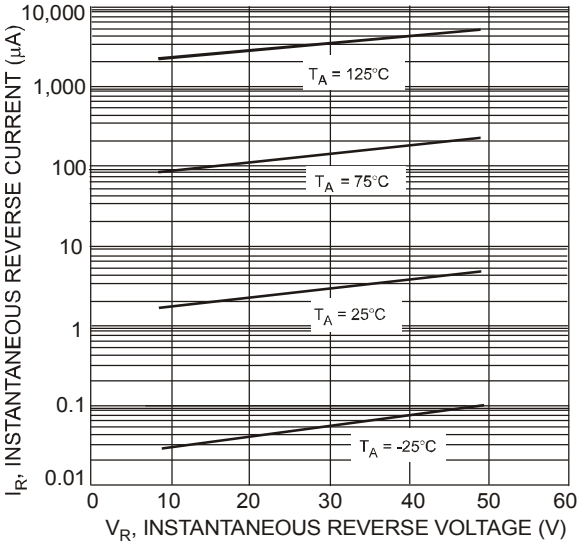


Fig. 3 Typical Reverse Characteristics, B320B thru B340B

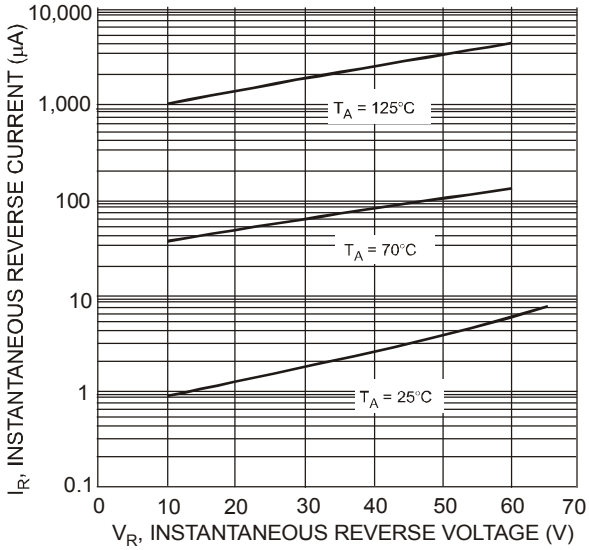


Fig. 4 Typical Reverse Characteristics, B350B thru B360B

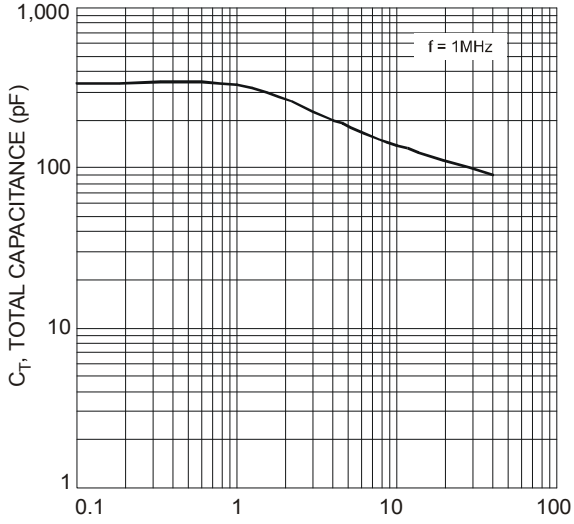


Fig. 5 Total Capacitance vs. Reverse Voltage

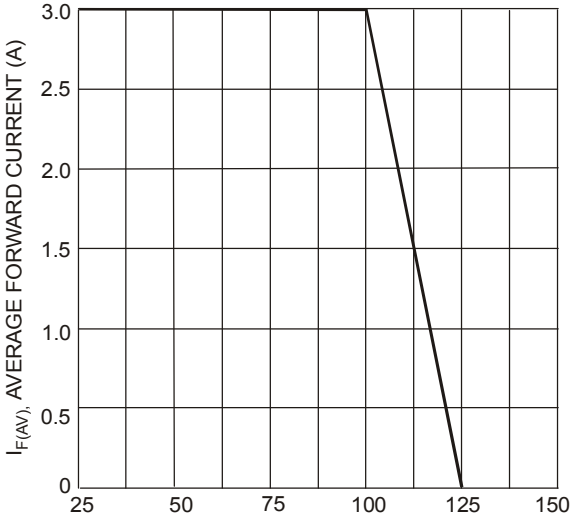


Fig. 6 Forward Current Derating Curve

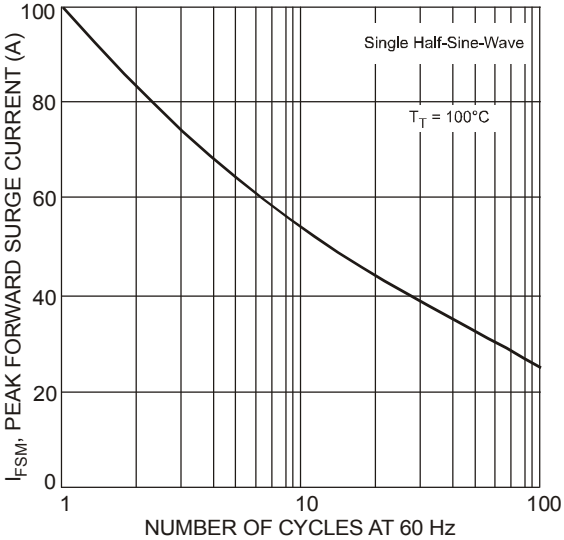
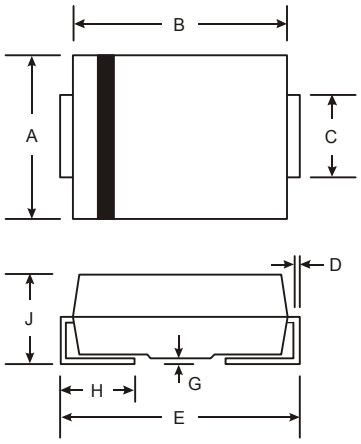


Fig. 7 Max Non-Repetitive Peak Forward Surge Current

Package Outline Dimensions

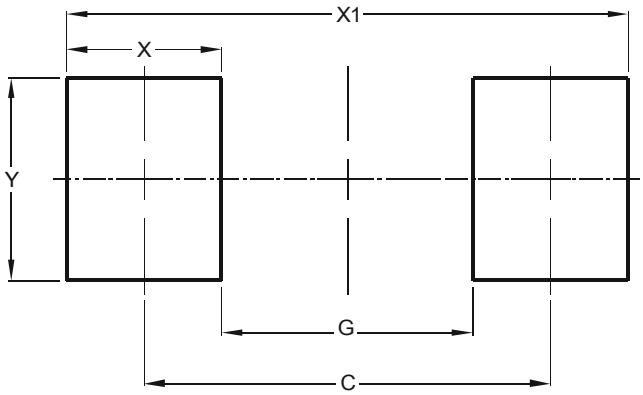
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



SMC		
Dim	**Min**	**Max**
A	5.59	6.22
B	6.60	7.11
C	2.75	3.18
D	0.15	0.31
E	7.75	8.13
G	0.10	0.20
H	0.76	1.52
J	2.00	2.50
All Dimensions in mm		

Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



Dimensions	Value (in mm)
C	6.80
G	4.40
X	2.50
X1	9.40
Y	3.30

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