3.0A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

Product Summary

B320A-B340A:

V_{RRM} (V)	I_O(A)	$V_{F(MAX)}$ @ 3A (V)	$I_{R(MAX)}$ @ V_{RRM} (mA)
20, 30, 40	3.0	0.50	0.5

B350-B360A:

V_{RRM} (V)	I_O(A)	$V_{F(typ)}$ @ +125°C (V)	$I_{R(MAX)}$ @ V_{RRM} (mA)
50, 60	3.0	0.70	0.5

Features

- Guard Ring Die Construction for Transient Protection
- Ideally Suited for Automated Assembly
- Low Power Loss, High Efficiency
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Notes 3 & 4)**
- **Qualified to AEC-Q101 Standards for High Reliability**

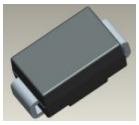
Description and Applications

For use in low-voltage, high-frequency inverters, freewheeling, DC-DC converters, and polarity protection applications.

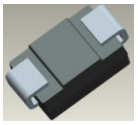
Mechanical Data

- Case: SMA
- Case Material: Molded Plastic. "Green" Molding Compound. 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
- Weight: 0.064 grams (Approximate)

SMA



Top View



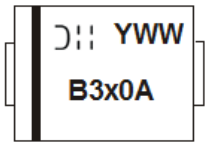
Bottom View

Ordering Information (Note 5)

Part Number*	Compliance	Case	Packaging
B3XXA-13-F	Standard	SMA	5,000/Tape & Reel

* XX = Device Type, e.g. B320A-13-F (SMA Package).

Marking Information (Note 6)



B3x0A = Product Type Marking Code, ex: B320A
= Manufacturers' Code Marking
YWW = Date Code Marking
Y = Last Digit of Year (ex: 15 for 2015)
WW = Week Code (01 to 53)

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. Products manufactured with Date Code 0924 (week 24, 2009) and newer are built with Green Molding Compound.
5. For packaging details, go to our website at http://www.diodes.com/products/packages.html.
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	B320A	B330A	B340A	B350A	B360A	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}	80					A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum Total Power Dissipation - Steady State, T_A = +25°C (Note 7)	P_D	850	mW
Typical Thermal Resistance, Junction to Ambient (Note 7)	$R_{\theta JA}$	140	°C/W
Typical Thermal Resistance, Junction to Terminal (Note 8)	$R_{\theta JT}$	25	°C/W
Typical Thermal Resistance, Junction to Ambient (Note 8)	$R_{\theta JA}$	100	°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	B320A, B330A, B340A	V_F	—	—	0.50	V	I_F = 3.0A, T_A = +25°C
	B350A, B360A		—	—	0.70		
Leakage Current (Note 9)		I_R	—	—	0.5	mA	@ Rated V_R, T_A = +25°C
			—	—	20		@ Rated V_R, T_A = +100°C
Total Capacitance		C_T	—	200	—	pF	V_R = 4V, f = 1MHz

Notes: 7. Device mounted on FR-4 PCB, with minimum recommended pad layout.
8. Device mounted on glass epoxy substrate with 2x3mm copper pad.
9. Short duration pulse test used to minimize self-heating effect.

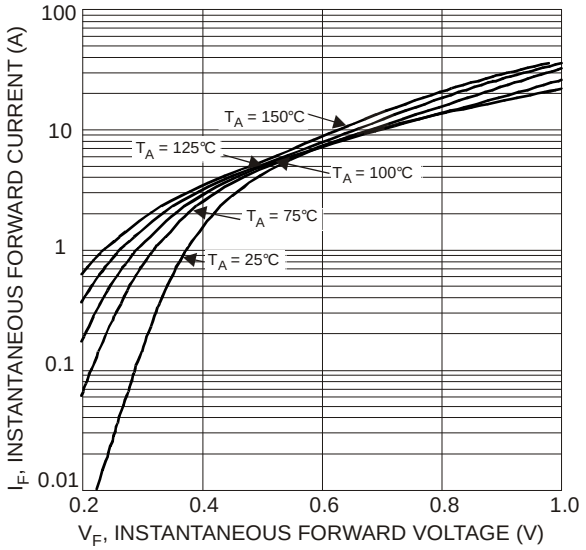


Fig. 1 Typical Forward Characteristics - B320A thru B340A

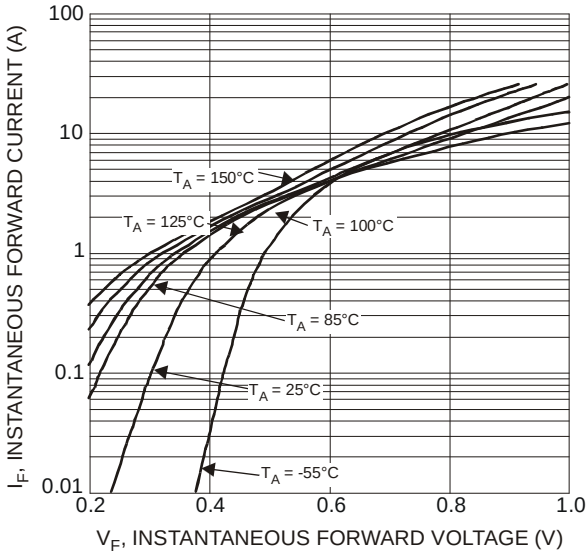


Fig. 2 Typ. Forward Characteristics - B350A thru B360A

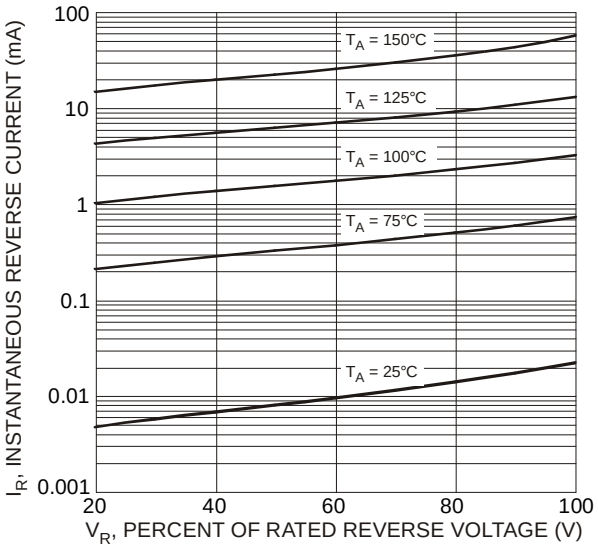


Fig. 3 Typical Reverse Characteristics, B320A thru B340A

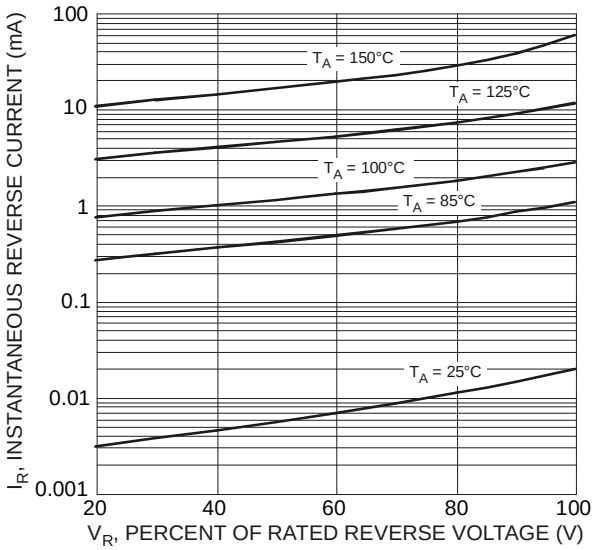


Fig. 4 Typical Reverse Characteristics, B350A thru B360A

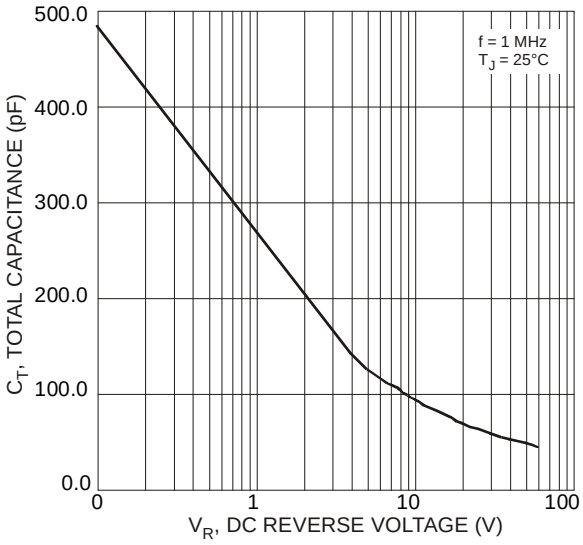


Fig. 5 Total Capacitance vs. Reverse Voltage

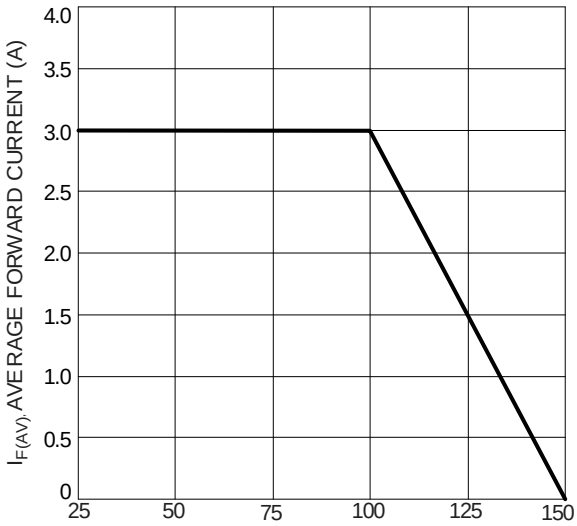


Fig. 6 Forward Current Derating Curve

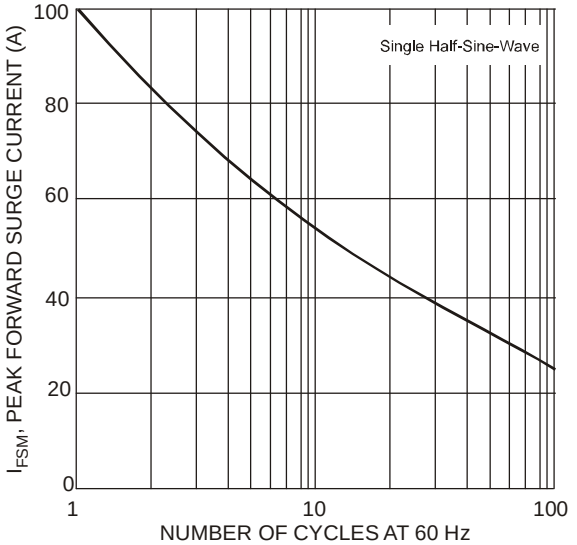


Fig. 7 Max Non-Repetitive Peak Fwd Surge Current

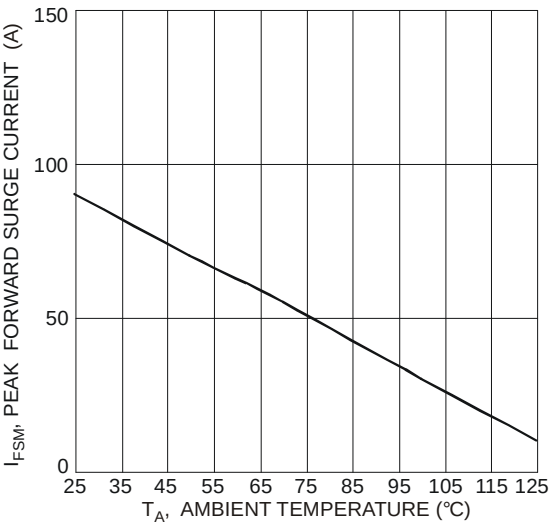


Fig. 8 Non-Repetitive Forward Surge Current Derating Curve

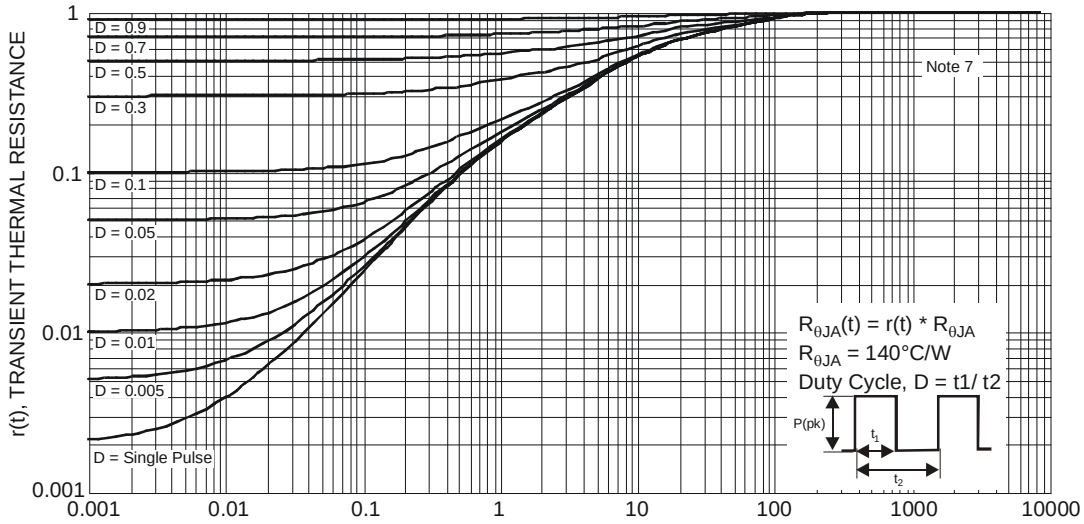


Fig 9 Transient Thermal Resistance
B320A-B340A

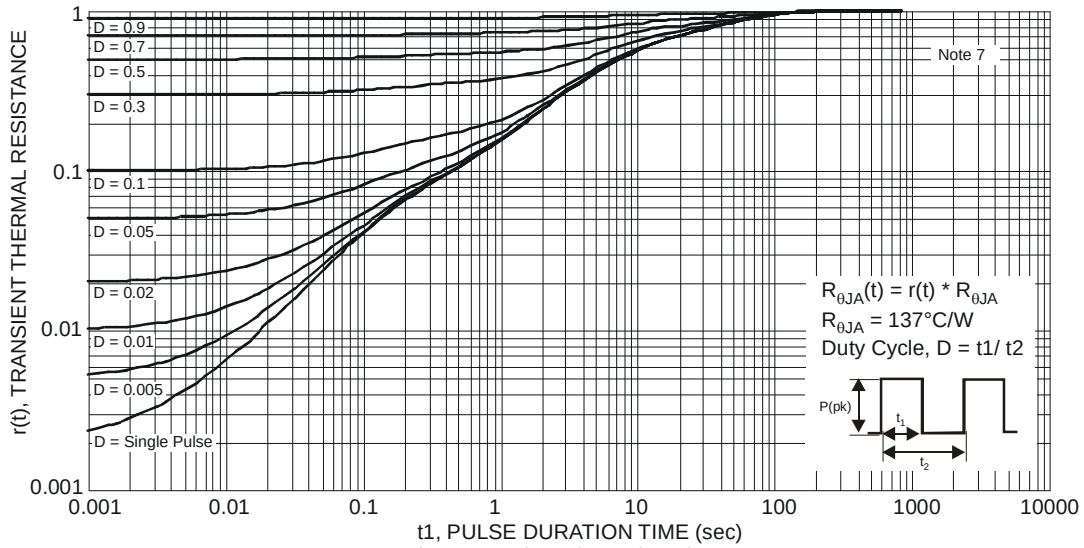


Fig 10 Transient Thermal Resistance
B350A-B360A

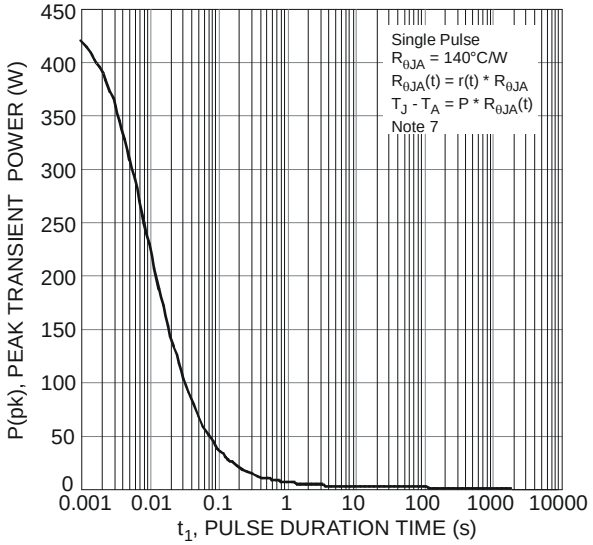


Fig. 11 Single Pulse Maximum Power Dissipation
(B320A-B340A)

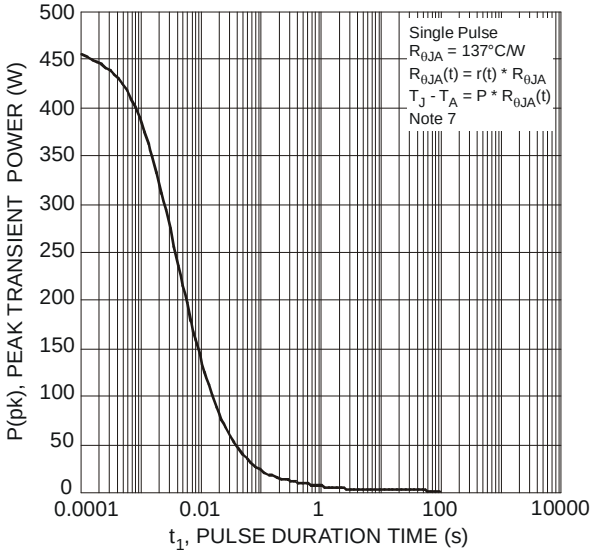
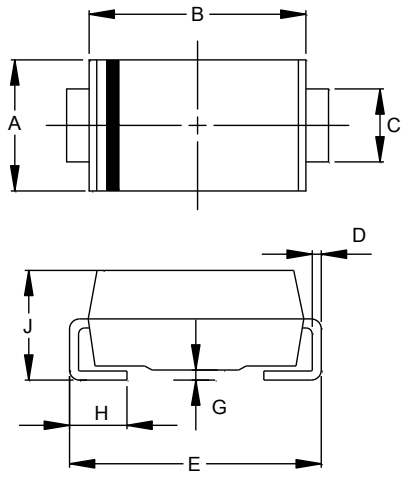


Fig. 12 Single Pulse Maximum Power Dissipation
(B350A-B360A)

Package Outline Dimensions

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

SMA

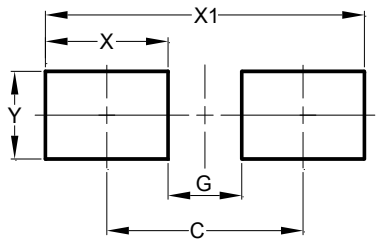


SMA		
Dim	**Min**	**Max**
A	2.29	2.92
B	4.00	4.60
C	1.27	1.63
D	0.15	0.31
E	4.80	5.59
G	0.05	0.20
H	0.76	1.52
J	1.96	2.40
All Dimensions in mm		

Suggested Pad Layout

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

SMA



Dimensions	Value (in mm)
C	4.00
G	1.50
X	2.50
X1	6.50
Y	1.70

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