


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 2)**

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 
- Polarity: Cathode Band
- Weight: 0.064 grams (approximate)

SMA

Top View

Bottom View

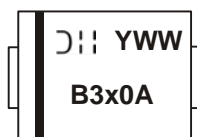
Ordering Information (Note 3)

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

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

- Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes.
 2. Product manufactured with Data Code 0924 (week 24, 2009) and newer are built with Green Molding Compound.
 3. For packaging details, go to our website at <http://www.diodes.com>.

Marking Information (Note 4)



B3x0A = Product type marking code, ex: B320A
J11 = Manufacturers' code marking
YWW = Date code marking
Y = Last digit of year (ex: 2 for 2002)
WW = Week code (01 to 53)

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

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	$^\circ\text{C}/\text{W}$
Typical Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	100	$^\circ\text{C}/\text{W}$
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	V_F	-	-	0.50	V	$I_F = 3.0\text{A}$, $T_A = 25^\circ\text{C}$
		-	-	0.70		
Leakage Current (Note 6)	I_R	-	-	0.5	mA	@ Rated V_R , $T_A = 25^\circ\text{C}$
		-	-	20		@ 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: 5. Thermal Resistance: Junction to terminal, unit mounted on glass epoxy substrate with 2x3mm copper pad.
6. Short duration pulse test used to minimize self-heating effect.

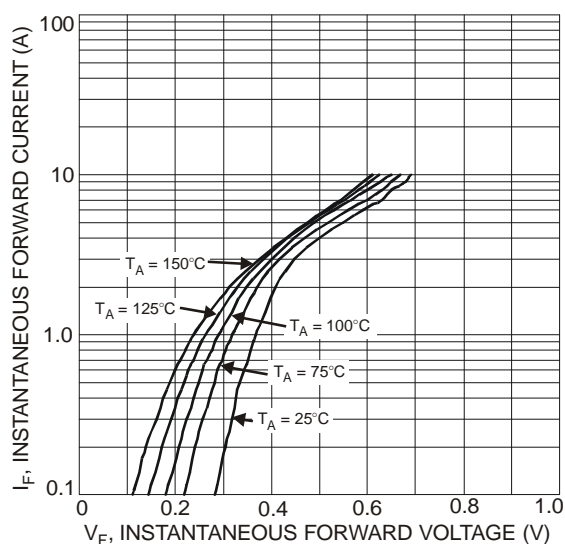


Fig. 1 Typical Forward Characteristics - B320A thru B340A

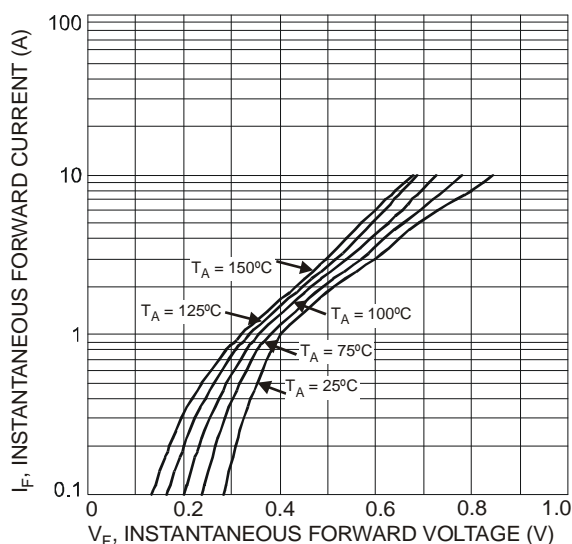


Fig. 2 Typ. Forward Characteristics - B350A thru B360A

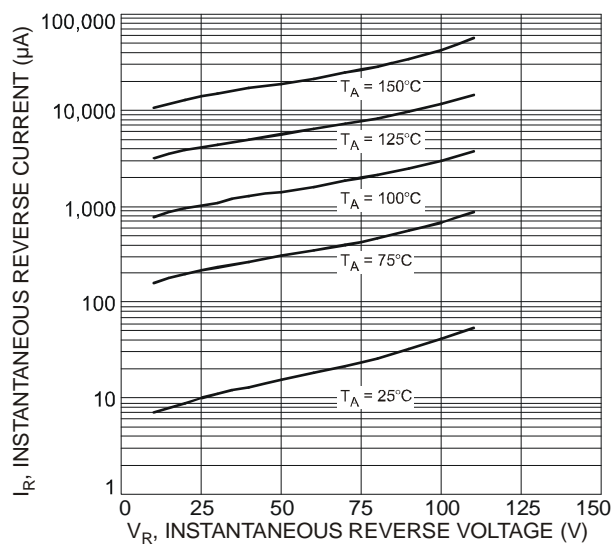


Fig. 3 Typical Reverse Characteristics, B320A thru B340A

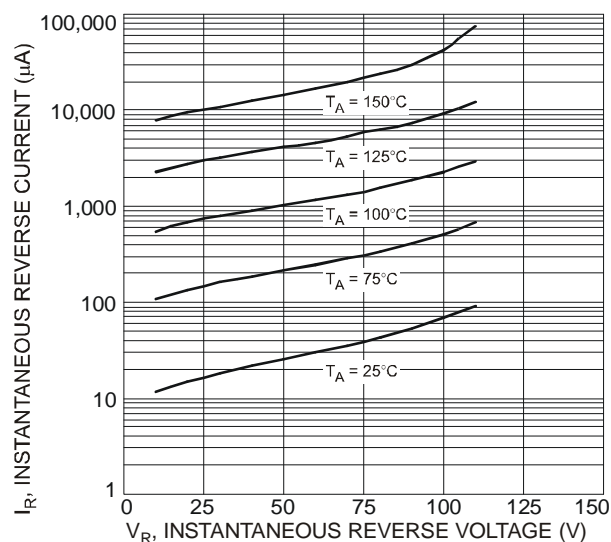


Fig. 4 Typical Reverse Characteristics, B350A thru B360A

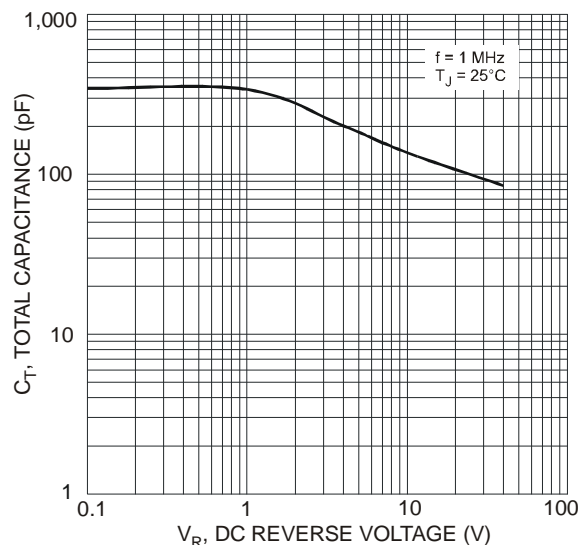


Fig. 5 Total Capacitance vs. Reverse Voltage

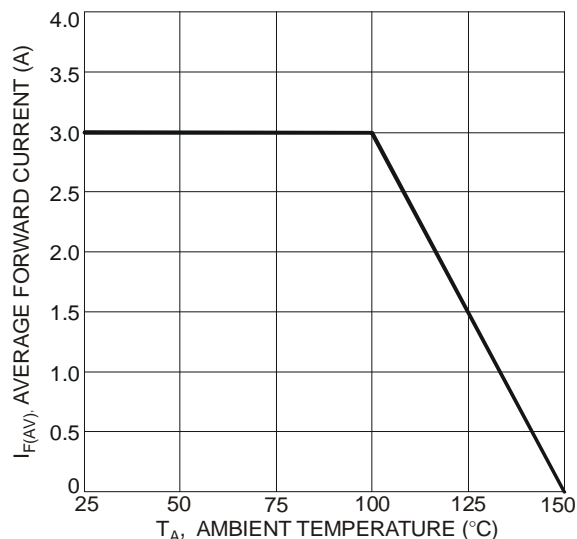


Fig. 6 Forward Current Derating Curve

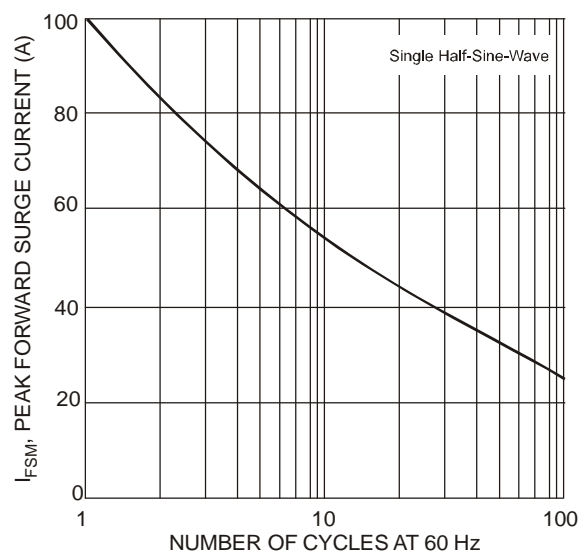


Fig. 7 Max Non-Repetitive Peak Fwd Surge Current

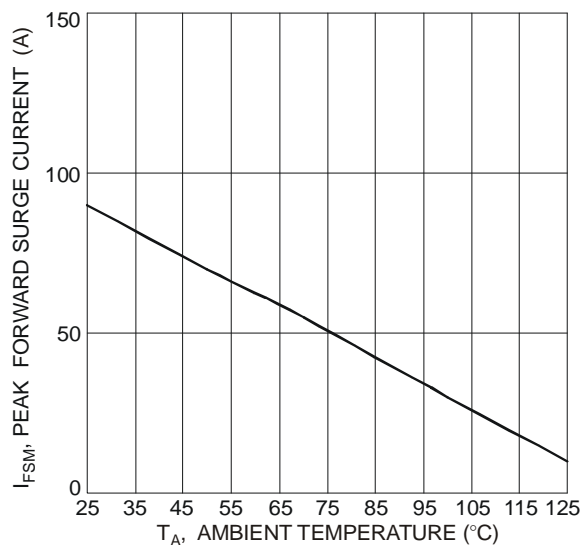
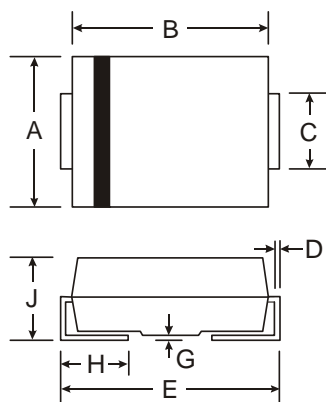


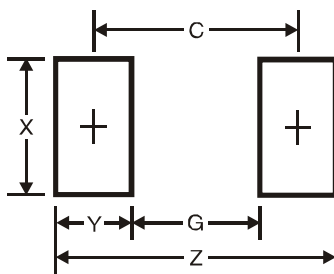
Fig. 8 Non-Repetitive Forward Surge Current Derating Curve

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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