

**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)	$V_{F(typ)} @ 125^{\circ}C$ (V)	$I_{R(MAX)} @ V_{RRM}$ (mA)
50, 60	3.0	0.70	0.5

**Description and Applications**

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

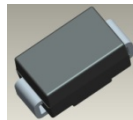
**Features**

- 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**

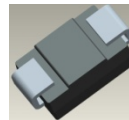
**Mechanical Data**

- 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 <sup>(3)</sup>
- Polarity: Cathode Band
- Weight: 0.064 grams (approximate)

SMA



Top View



Bottom View

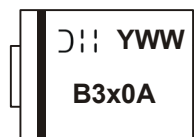
**Ordering Information** (Note 5)

Part Number*	Compliance	Case	Packaging
B3XXA-13-F	Standard	SMA	5000/Tape & Reel
B3XXAQ-13-F	Automotive	SMA	5000/Tape & Reel

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

- 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](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. Product 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>

**Marking Information** (Note 6)



B3x0A = Product type marking code, ex: B320A  
 DII = 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<sub>A</sub> = +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	V <sub>RRM</sub>	20	30	40	50	60	V
Working Peak Reverse Voltage	V <sub>RWM</sub>						
DC Blocking Voltage	V <sub>R</sub>						
Average Rectified Output Current @ T <sub>T</sub> = +100°C	I <sub>O</sub>	3.0					A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	80					A

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum Total Power Dissipation - Steady State, T <sub>A</sub> = +25°C (Note 7)	P <sub>D</sub>	850	mW
Typical Thermal Resistance, Junction to Ambient (Note 7)	R <sub>θJA</sub>	140	°C/W
Typical Thermal Resistance, Junction to Terminal (Note 8)	R <sub>θJT</sub>	25	°C/W
Typical Thermal Resistance, Junction to Ambient (Note 8)	R <sub>θJA</sub>	100	°C/W
Operating Temperature Range	T <sub>J</sub>	-55 to +150	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	°C

## Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V <sub>F</sub>	—	—	0.50	V	I <sub>F</sub> = 3.0A, T <sub>A</sub> = +25°C
		—	—	0.70		
Leakage Current (Note 9)	I <sub>R</sub>	—	—	0.5	mA	@ Rated V <sub>R</sub> , T <sub>A</sub> = +25°C
		—	—	20		@ Rated V <sub>R</sub> , T <sub>A</sub> = +100°C
Total Capacitance	C <sub>T</sub>	—	200	—	pF	V <sub>R</sub> = 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.

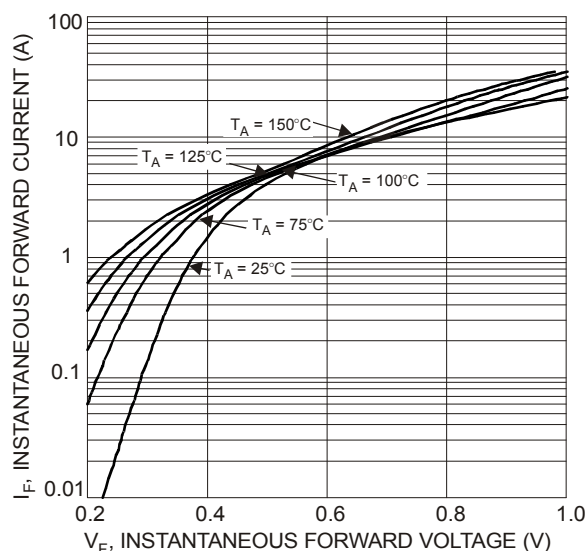


Fig. 1 Typical Forward Characteristics - B320A thru B340A

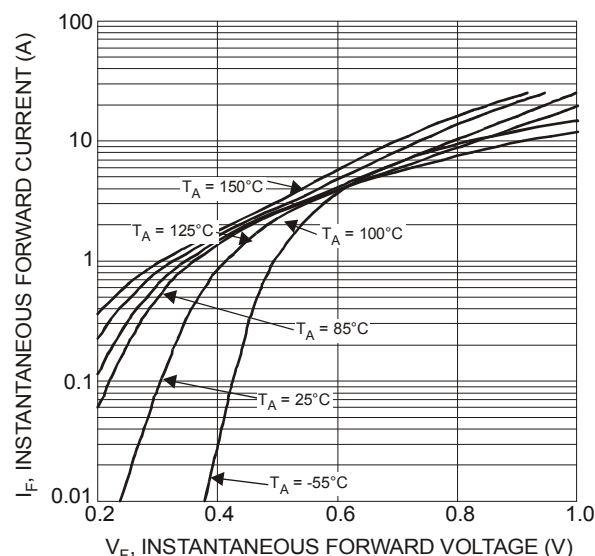
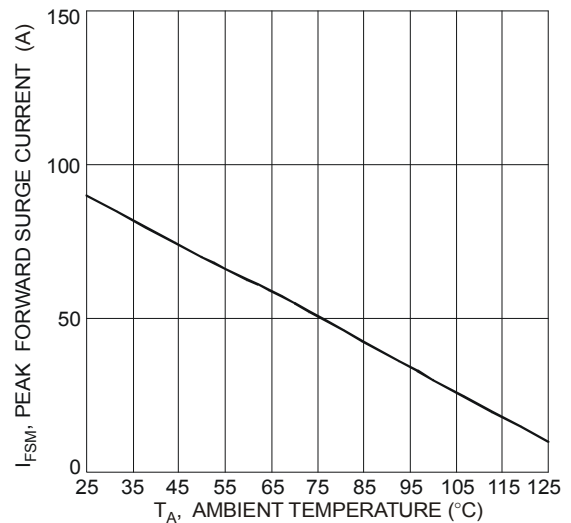
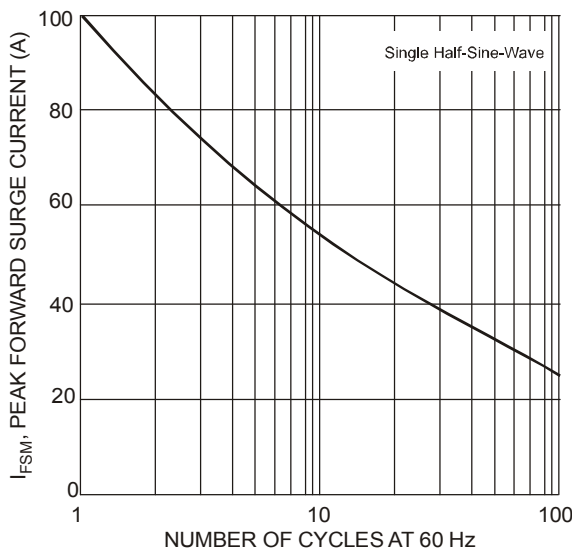
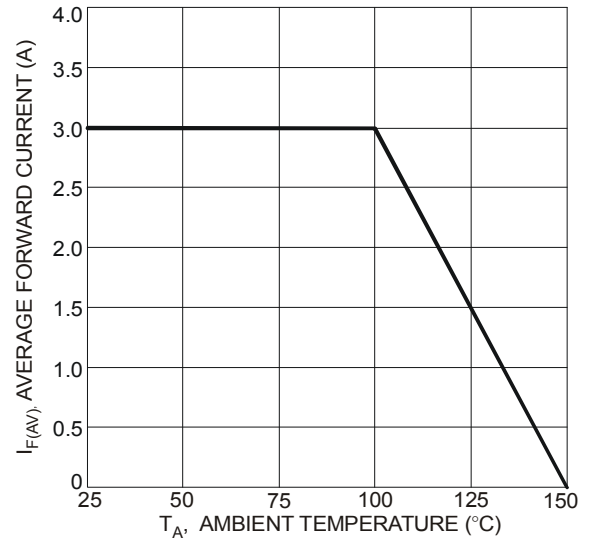
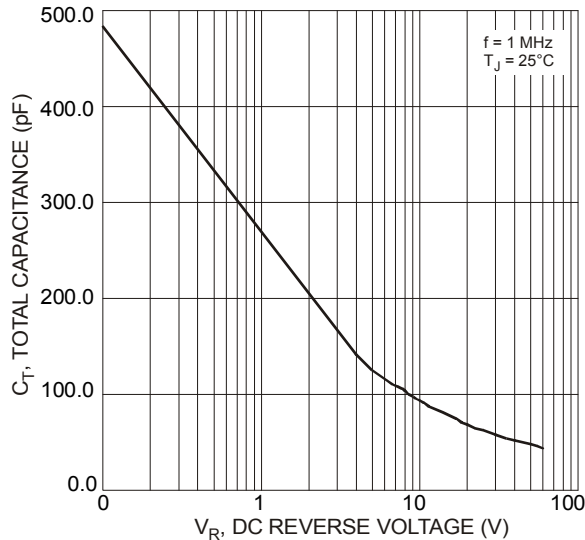
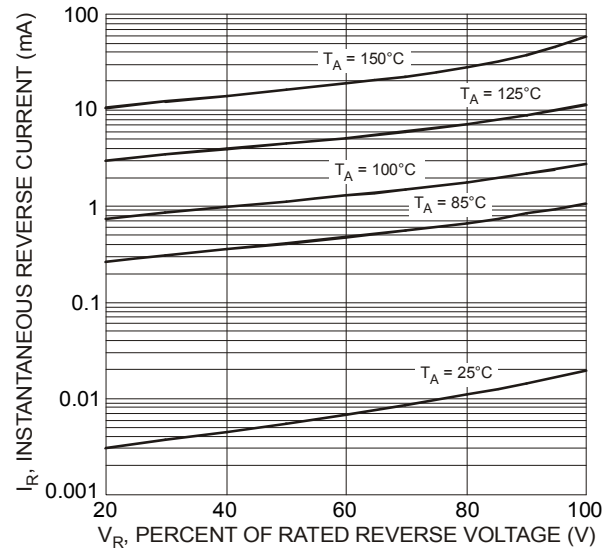
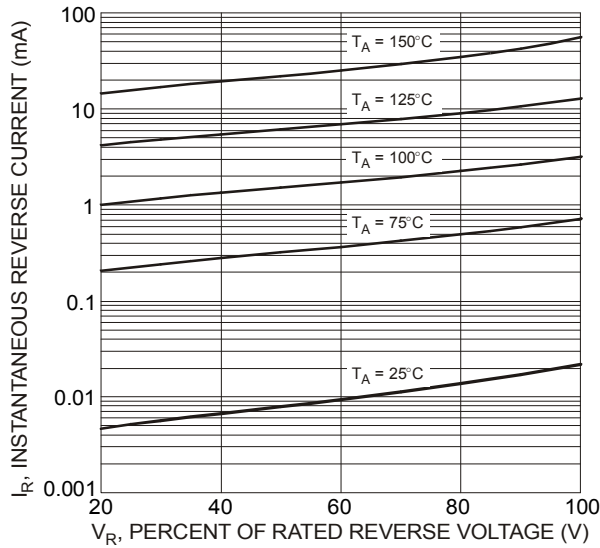
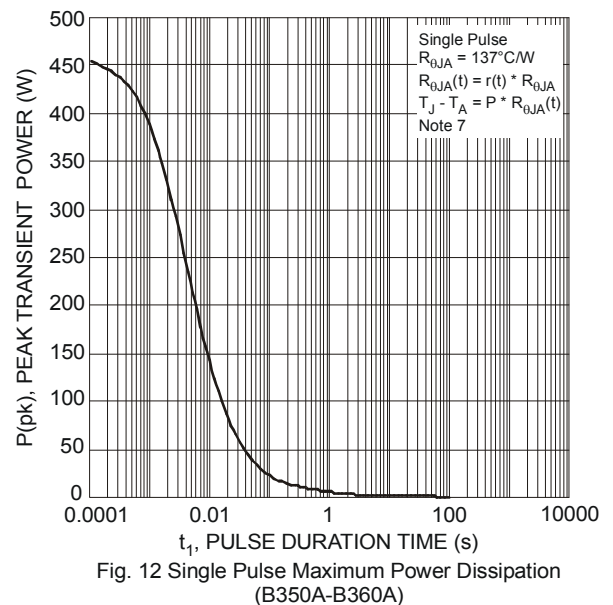
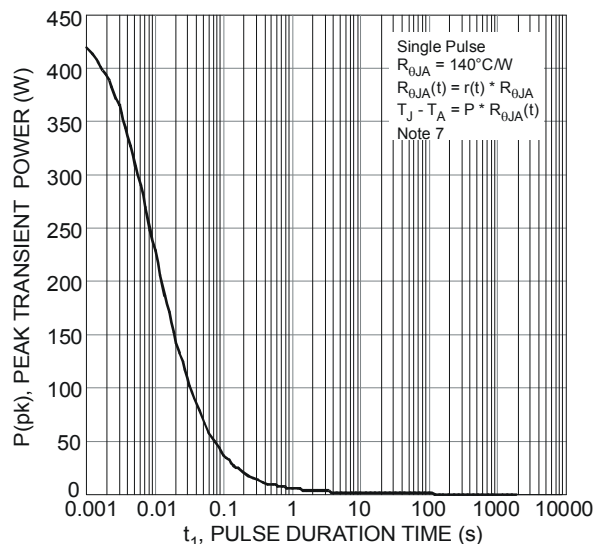
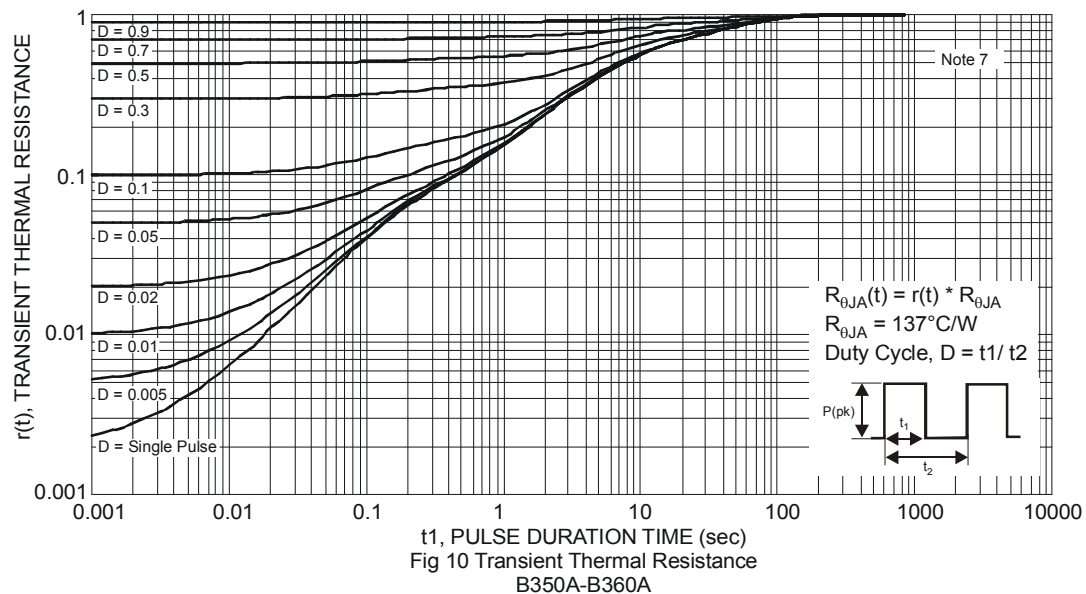
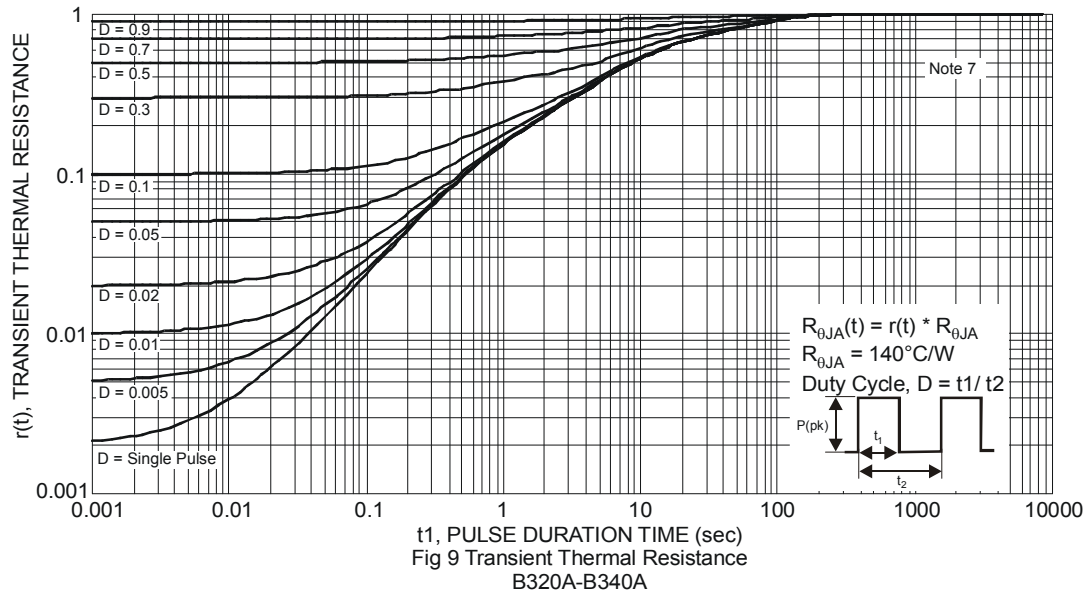


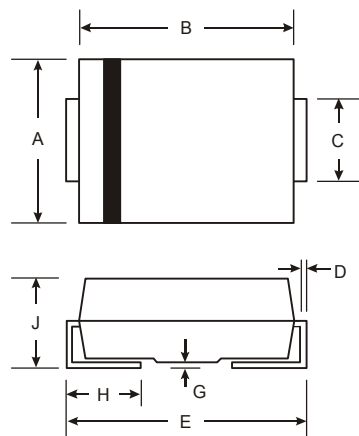
Fig. 2 Typ. Forward Characteristics - B350A thru B360A





## Package Outline Dimensions

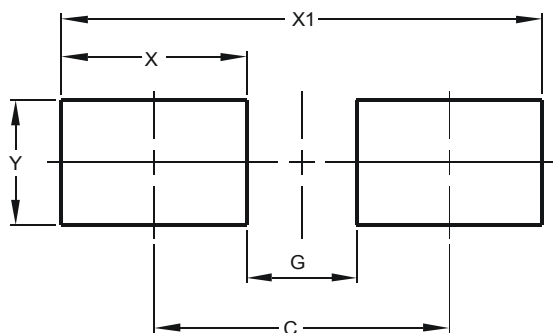
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



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

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



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

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