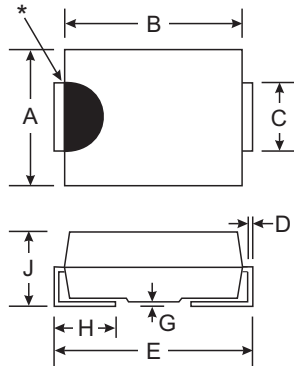


### Features

- Guard Ring Die Construction for Transient Protection
- Ideally Suited for Automatic 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 4)**

### Mechanical Data

- Case: SMA/SMB/SMC
- Case Material: Molded Plastic. UL Flammability Classification 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Marking: Type Number (See Page 3)
- Approximate Weight: SMA 0.064 grams  
SMB 0.093 grams  
SMC 0.21 grams



Dim	SMA		SMB		SMC	
	Min	Max	Min	Max	Min	Max
A	2.29	2.92	3.30	3.94	5.59	6.22
B	4.00	4.60	4.06	4.57	6.60	7.11
C	1.27	1.63	1.96	2.21	2.75	3.18
D	0.15	0.31	0.15	0.31	0.15	0.31
E	4.80	5.59	5.00	5.59	7.75	8.13
G	0.10	0.20	0.10	0.20	0.10	0.20
H	0.76	1.52	0.76	1.52	0.76	1.52
J	2.01	2.30	2.00	2.40	2.00	2.40
<b>All Dimensions in mm</b>						

"A" Suffix Designates SMA Package

"B" Suffix Designates SMB Package

No Suffix Designates SMC Package

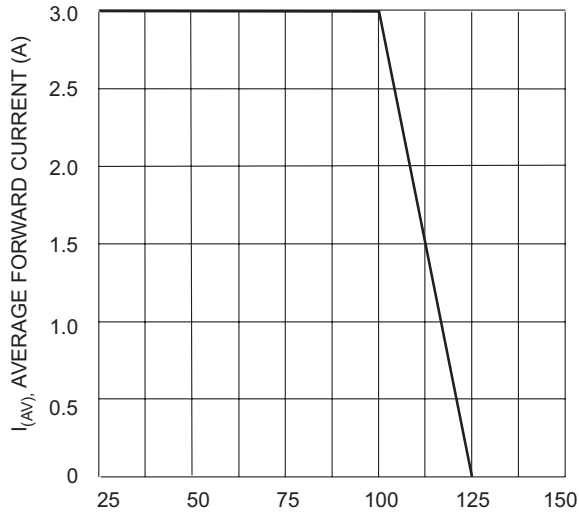
\*: Note: Device may have a semicircular indentation/notch on one side of the device (as shown).

### Maximum Ratings and Electrical Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified

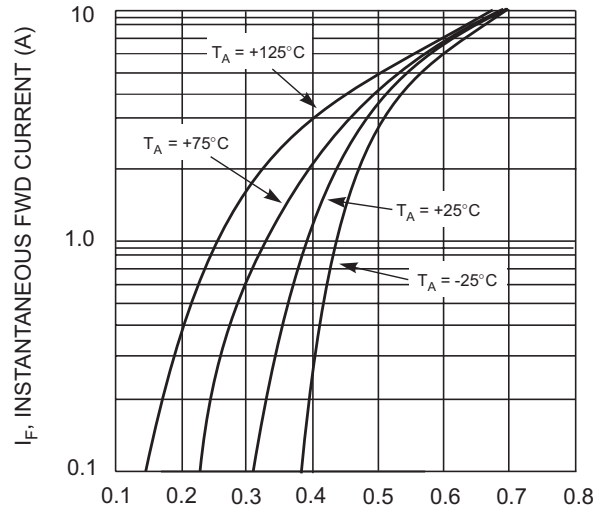
Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

Characteristic	Symbol	B320/A/B	B330/A/B	B340/A/B	B350/A/B	B360/A/B	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	20	30	40	50	60	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	14	21	28	35	42	V
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 (JEDEC Method)	I <sub>FSM</sub>	100					A
Forward Voltage (Note 3) @ I <sub>F</sub> = 3.0A	V <sub>FM</sub>	0.50		0.70			V
Peak Reverse Current @ T <sub>A</sub> = 25°C at Rated DC Blocking Voltage (Note 3) @ T <sub>A</sub> = 100°C	I <sub>RM</sub>	0.5 20					mA
Typical Capacitance (Note 2)	C <sub>T</sub>	250					pF
Typical Thermal Resistance, Junction to Terminal	R <sub>θJT</sub>	10					°C/W
Typical Thermal Resistance, Junction to Ambient (Note 1)	R <sub>θJA</sub>	50					°C/W
Operating Temperature Range	T <sub>j</sub>	-55 to +125					°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150					°C

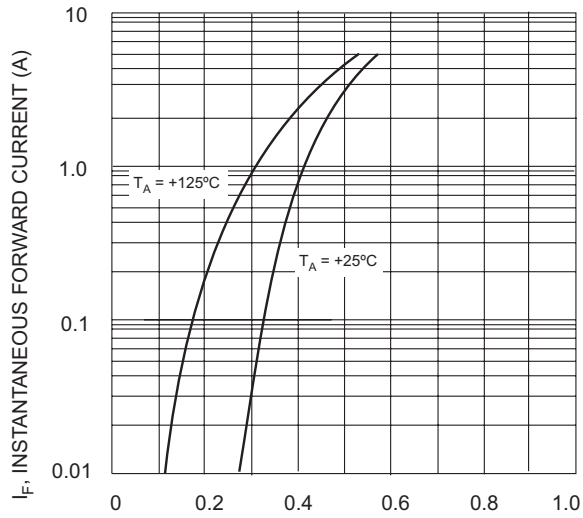
- Notes:
1. Thermal Resistance: Junction to terminal, unit mounted on PC board with 5.0 mm<sup>2</sup>, 0.013 mm thick, copper pad as heat sink.
  2. Measured at 1.0 MHz and applied reverse voltage of 4.0V DC.
  3. Short duration test pulse used to minimize self-heating effect.
  4. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex Notes 5 and 7*.



$T_T$ , TERMINAL TEMPERATURE (°C)  
Fig. 1 Forward Current Derating Curve



$V_F$ , INSTANTANEOUS FORWARD VOLTAGE (V)  
Fig. 2 Typical Forward Characteristics - B320/A/B thru B340/A/B



$V_F$ , INSTANTANEOUS FORWARD VOLTAGE (V)  
Fig. 3 Typ. Forward Characteristics - B350/A/B thru B360/A/B

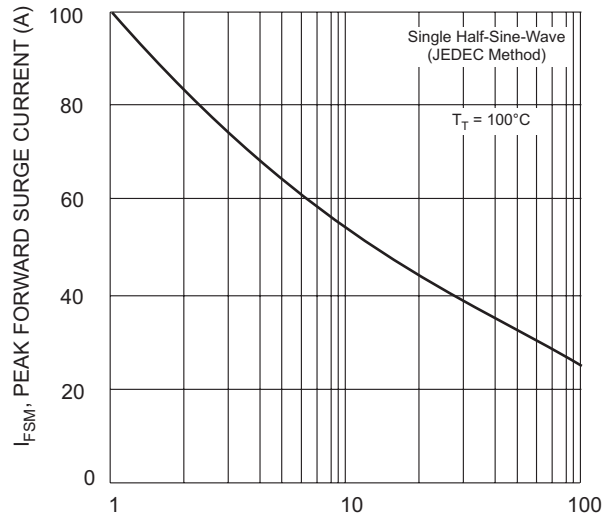
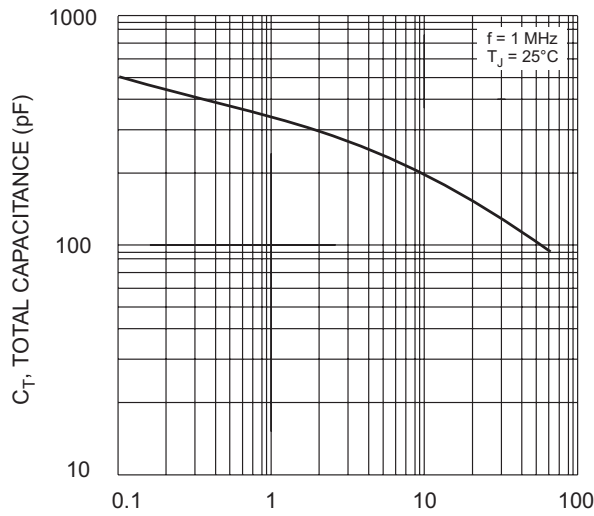
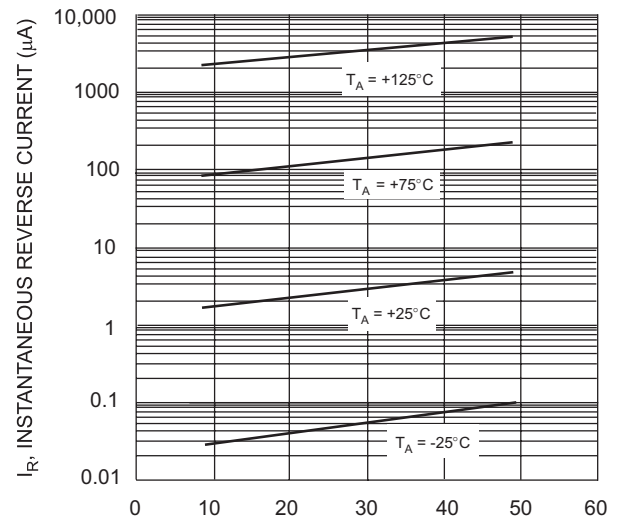


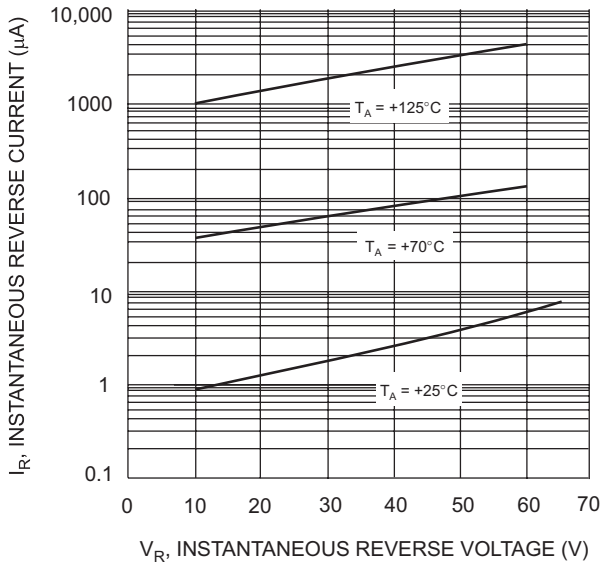
Fig. 4 Max Non-Repetitive Peak Fwd Surge Current



$V_R$ , REVERSE VOLTAGE (V)  
Fig. 5 Typical Capacitance



$V_R$ , INSTANTANEOUS REVERSE VOLTAGE (V)  
Fig. 6 Typical Reverse Characteristics, B320/A/B thru B340/A/B

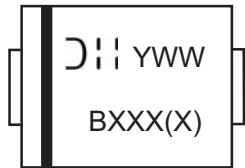


**Ordering Information** (Note 5)

Device*	Packaging	Shipping
B3XXA-13	SMA	5000/Tape & Reel
B3XXB-13	SMB	3000/Tape & Reel
B3XX-13	SMC	3000/Tape & Reel

Notes: 5. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

\* xx = Device type, e.g. B320A-13-F (SMA package); B320B-13-F (SMB package); B320-13-F (SMC Package).



BXXX = Product type marking code, ex: B320 (SMC package)  
 BXXXX = Product type marking code, ex: B320A (SMA package)  
 D|| = Manufacturers' code marking  
 YWW = Date code marking  
 Y = Last digit of year ex: 2 for 2002  
 WW = Week code 01 to 52

Note: Device has a cathode band (as shown above) and may also have a cathode notch (as shown on Page 1).

**IMPORTANT NOTICE**

Diodes, Inc. and its subsidiaries reserve the right to make changes without further notice to any product herein to make corrections, modifications, enhancements, improvements, or other changes. Diodes, Inc. does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

**LIFE SUPPORT**

The products located on our website at [www.diodes.com](http://www.diodes.com) are not recommended for use in life support systems where a failure or malfunction of the component may directly threaten life or cause injury without the express written approval of Diodes Incorporated.