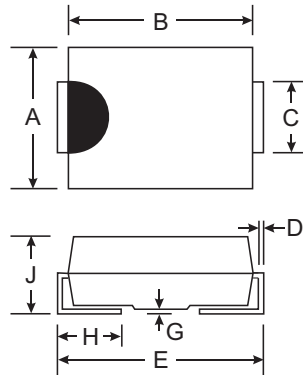


Features

Guard Ring Die Construction for
 Transient Protection
 Ideally Suited for Automatic Assembly
 Low Power Loss, High Efficiency
 Surge Overload Rating to 30A Peak
 For Use in Low Voltage, High Frequency Inverters, Free
 Wheeling, and Polarity Protection Application
Lead Free Finish/RoHS Compliant (Note 3)



Dim	SMA		SMB	
	Min	Max	Min	Max
A	2.29	2.92	3.30	3.94
B	4.00	4.60	4.06	4.57
C	1.27	1.63	1.96	2.21
D	0.15	0.31	0.15	0.31
E	4.80	5.59	5.00	5.59
G	0.10	0.20	0.10	0.20
H	0.76	1.52	0.76	1.52
J	2.01	2.62	2.00	2.62
All Dimensions in mm				

Mechanical Data

Case: SMA/SMB
 Case Material: Molded Plastic. UL Flammability
 Classification Rating 94V-0
 Moisture Sensitivity: Level 1 per J-STD-020C
 Terminals: Lead Free Plating (Matte Tin Finish).
 Solderable per MIL-STD-202, Method 208 **(e3)**
 Polarity: Cathode Band or Cathode Notch
 Marking Information: See page 3
 Ordering Information: See page 3
 Approximate Weight: SMA 0.064 grams
 SMB 0.093 grams

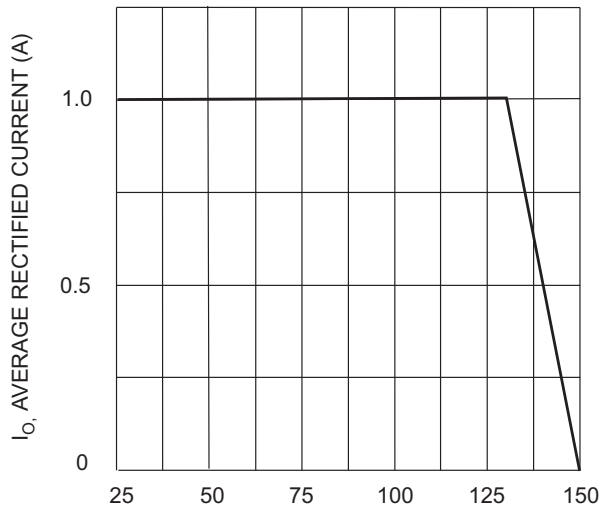
No Suffix Designates SMA Package
 "B" Suffix Designates SMB Package

Maximum Ratings and Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

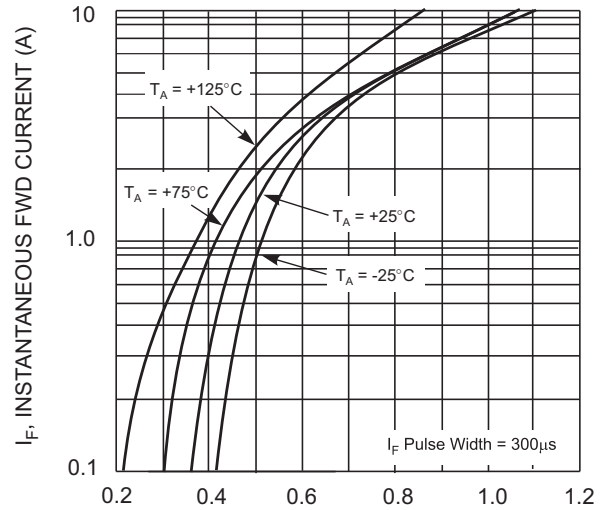
Single phase, half wave, 60Hz, resistive or inductive load.
 For capacitive load, derate current by 20%.

Characteristic	Symbol	B120/B	B130/B	B140/B	B150/B	B160/B	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	20	30	40	50	60	V
RMS Reverse Voltage	$V_{R(RMS)}$	14	21	28	35	42	V
Average Rectified Output Current @ $T_T = 130^{\circ}\text{C}$	I_O	1.0					A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	30					A
Forward Voltage @ $I_F = 1.0\text{A}$	V_{FM}	0.50			0.70		V
Peak Reverse Current @ $T_A = 25^{\circ}\text{C}$ at Rated DC Blocking Voltage @ $T_A = 100^{\circ}\text{C}$	I_{RM}	0.5 10					mA
Typical Total Capacitance (Note 2)	C_T	110					pF
Typical Thermal Resistance Junction to Terminal (Note 1)	R_{JT}	20					$^{\circ}\text{C/W}$
Operating and Storage Temperature Range	T_j, T_{STG}	-65 to +150					$^{\circ}\text{C}$

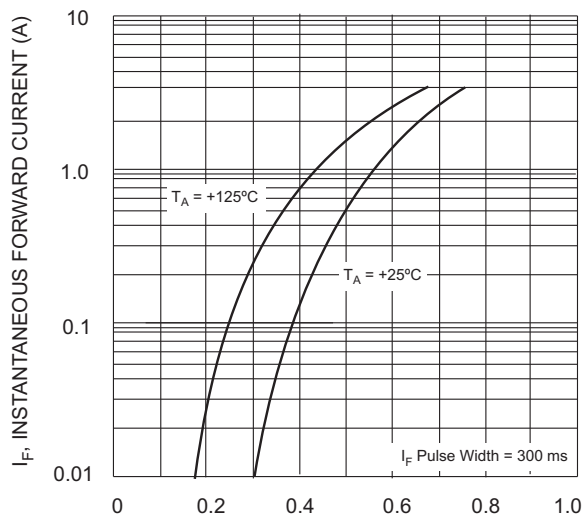
- Notes:
1. Thermal Resistance: Junction to terminal, unit mounted on PC board with 5.0 mm² (0.013 mm thick) copper pads as heat sink.
 2. Measured at 1.0 MHz and applied reverse voltage of 4.0V DC.
 3. RoHS revision 13.2.2003. High Temperature Solder Exemption Applied, see EU Directive Annex Note 7.



T_T , TERMINAL TEMPERATURE ($^{\circ}$ C)
Fig. 1 Forward Current Derating Curve



V_F , INSTANTANEOUS FORWARD VOLTAGE (V)
Fig. 2 Typical Forward Characteristics - B120/B thru B140/B



V_F , INSTANTANEOUS FWD VOLTAGE (V)
Fig. 3 Typ. Forward Characteristics - B150/B thru B160/B

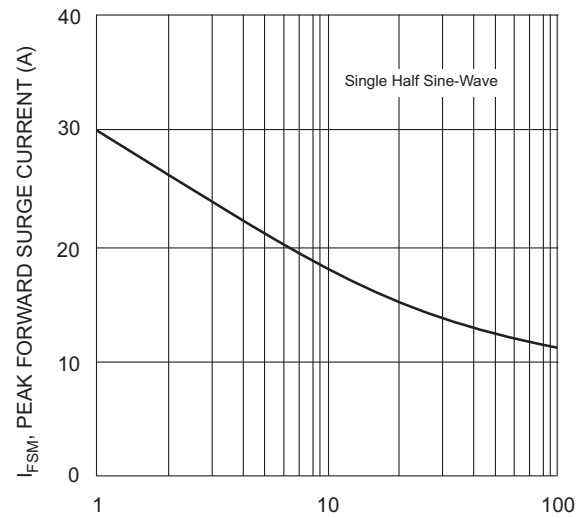
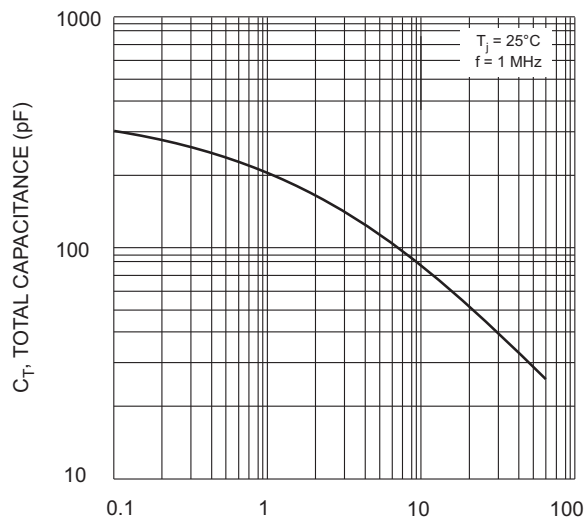
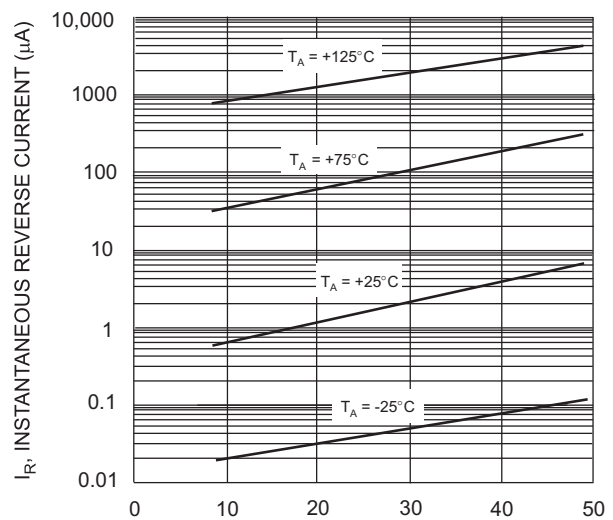


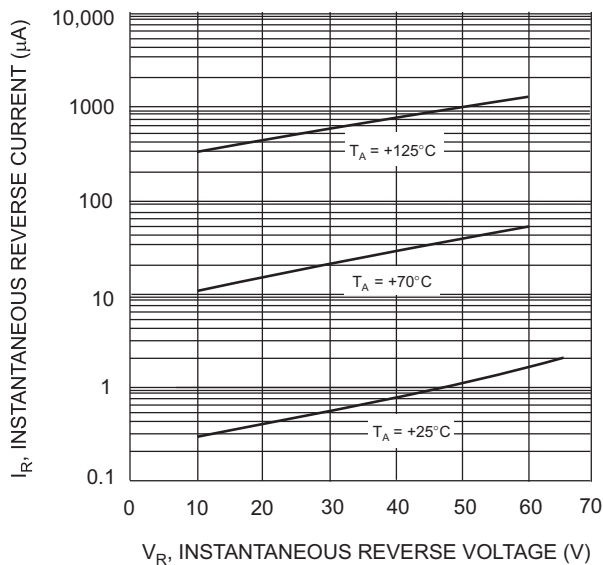
Fig. 4 Max Non-Repetitive Peak Fwd Surge Current



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



V_R , INSTANTANEOUS REVERSE VOLTAGE (V)
Fig. 6 Typical Reverse Characteristics, B120/B thru B140/B



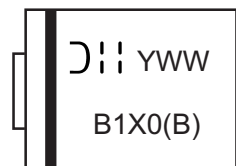
Ordering Information (Note 4)

Device*	Packaging	Shipping
B1XX-13-F	SMA	5000/Tape & Reel
B1XXB-13-F	SMB	3000/Tape & Reel

Notes: 4. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

* xx = Device type, e.g. B120-13-F (SMA package); B120B-13-F (SMB package).

Marking Information



B1X0 = Product type marking code, ex: B120 (SMA package)
 B1X0B = Product type marking code, ex: B160B (SMB package)
 B1X0(B) = 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).

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