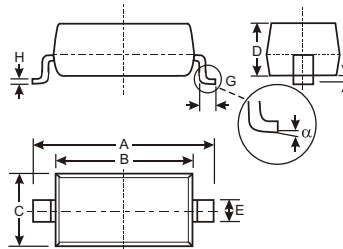


### Features

- Guard Ring Die Construction for Transient Protection
- Very Low Forward Voltage Drop
- Lead Free by Design/RoHS Compliant (Note 3)**

### Mechanical Data

- Case: SOD-123
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe)
- Polarity: Cathode Band
- Marking: Date Code & Type Code, See Page 4
- Type Code: SX
- Ordering Information: See Page 4
- Weight: 0.01 grams (approximate)



SOD-123		
Dim	Min	Max
A	3.55	3.85
B	2.55	2.85
C	1.40	1.70
D	—	1.35
E	0.45	0.65
	0.55 Typical	
G	0.25	—
H	0.11 Typical	
J	—	0.10
	0	8
All Dimensions in mm		

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

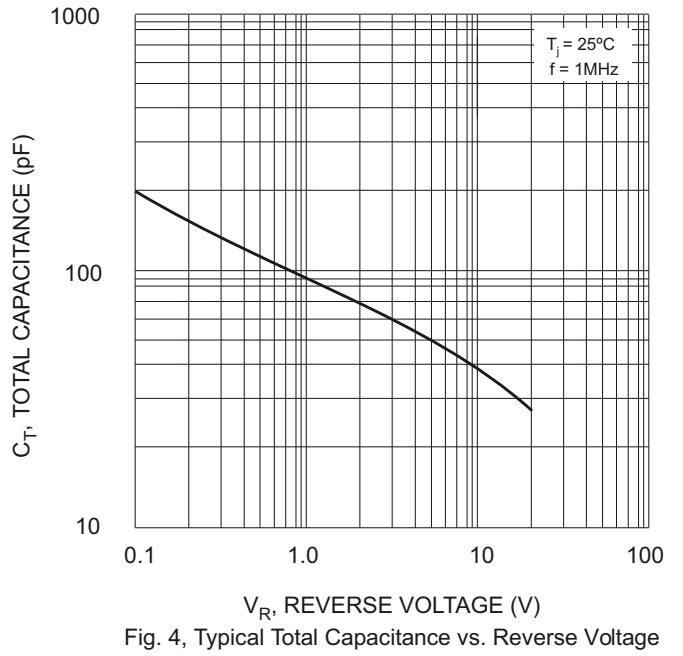
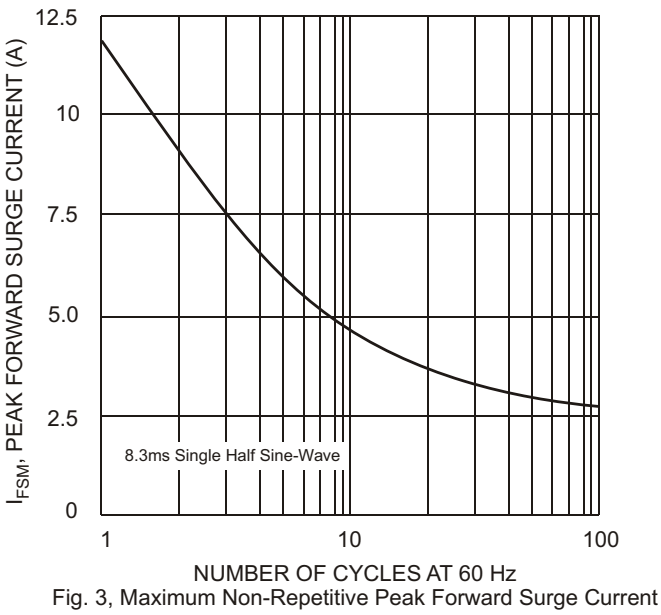
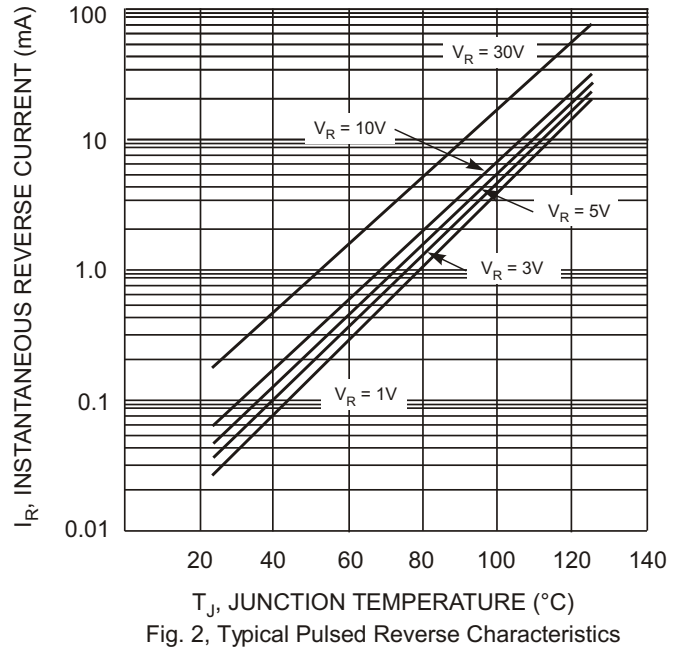
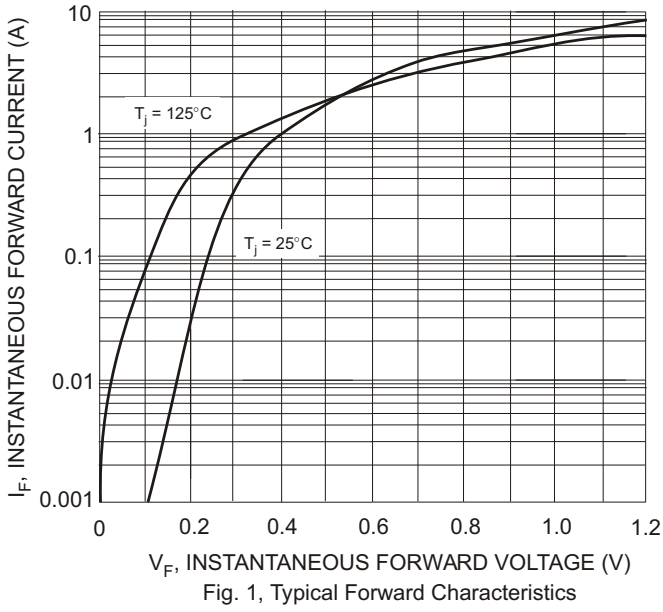
Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

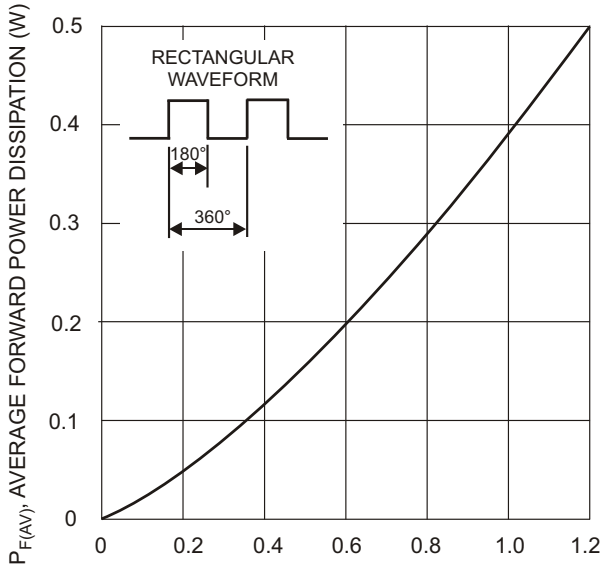
Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	30	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	21	V
Average Forward Current (See Figure 6)	I <sub>F(AV)</sub>	1.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	12	A
Power Dissipation (Note 2)	P <sub>d</sub>	450	mW
Typical Thermal Resistance Junction to Ambient (Note 2)	R <sub>JA</sub>	222	C/W
Operating Temperature Range (See Figure 7)	T <sub>j</sub>	-55 to +125	C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	°C

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

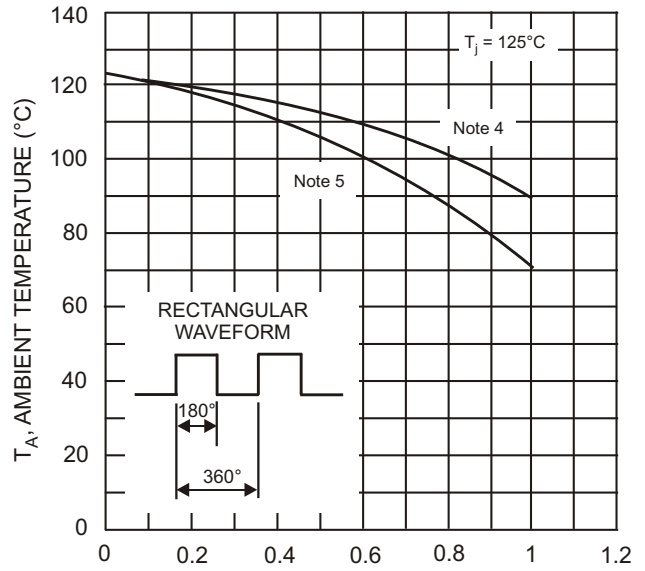
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 1)	V <sub>(BR)R</sub>	30			V	I <sub>R</sub> = 1.5mA
Forward Voltage	V <sub>F</sub>		0.25 0.35 0.38	0.37 0.42	V	I <sub>F</sub> = 0.1A I <sub>F</sub> = 0.7A I <sub>F</sub> = 1.0A
Leakage Current (Note 1)	I <sub>R</sub>		0.15	1.0	mA	V <sub>R</sub> = 30V, T <sub>A</sub> = 25 C
Total Capacitance	C <sub>T</sub>		40		pF	V <sub>R</sub> = 10V, f = 1.0MHz

- Notes:
1. Short duration pulse test used to minimize self-heating effect.
  2. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  3. No purposefully added lead.

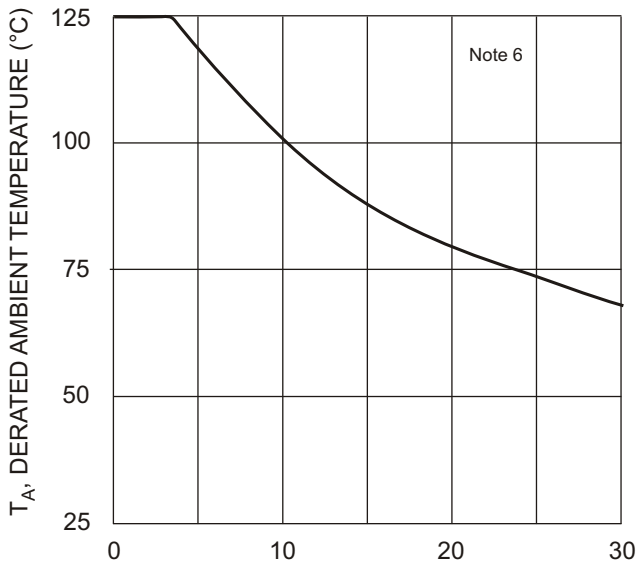




$I_{F(AVE)}$ , AVERAGE FORWARD CURRENT (A)  
Fig. 5, Forward Power Derating



$I_{F(AVE)}$ , AVERAGE FORWARD CURRENT (A)  
Fig. 6, Forward Current Derating



$V_R$ , REVERSE VOLTAGE (V)  
Fig. 7 Operating Temperature Derating

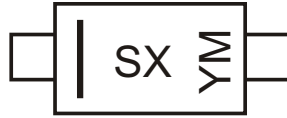
- Notes:
4. Device mounted on GETEK substrate, 2"x2", 2 oz. copper, double-sided, cathode pad dimensions 0.75" x 1.0", anode pad dimensions 0.25" x 1.0".
  5. Device mounted on FR-4 substrate, 2"x2", 2 oz. copper, single-sided, pad layout as per Diodes Inc. suggested pad layout document AP02001 which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  6.  $R_{JA}$  estimated to be approximately 220 °C/W.

**Ordering Information** (Note 7)

Device	Packaging	Shipping
B130LAW-7-F	SOD-123	3000/Tape & Reel

Notes: 7. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**



SX = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: T = 2006)  
 M = Month (ex: 9 = September)

Date Code Key

Year	2006	2007	2008	2009	2010	2011	2012
Code	T	U	V	W	X	Y	Z

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

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