



B130LAW

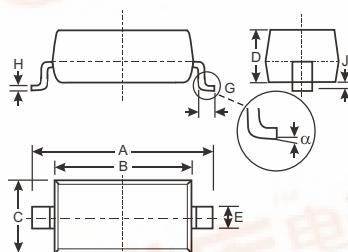
1.0A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

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

@ $T_A = 25^\circ C$ 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	V_{RRM}	30		V
Working Peak Reverse Voltage	V_{RWM}			
DC Blocking Voltage	V_R			
RMS Reverse Voltage	$V_{R(RMS)}$	21		V
Average Forward Current (See Figure 6)	$I_{F(AV)}$	1.0		A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	12		A
Power Dissipation (Note 2)	P_d	450		mW
Typical Thermal Resistance Junction to Ambient (Note 2)	R_{JA}	222		C/W
Operating Temperature Range (See Figure 7)	T_j	-55 to +125		C
Storage Temperature Range	T_{STG}	-55 to +150		°C

Electrical Characteristics

@ $T_A = 25^\circ C$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 1)	$V_{(BR)R}$	30			V	$I_R = 1.5\text{mA}$
Forward Voltage	V_F		0.25 0.35 0.38	0.37 0.42	V	$I_F = 0.1\text{A}$ $I_F = 0.7\text{A}$ $I_F = 1.0\text{A}$
Leakage Current (Note 1)	I_R		0.15	1.0	mA	$V_R = 30\text{V}$, $T_A = 25^\circ C$
Total Capacitance	C_T		40		pF	$V_R = 10\text{V}$, $f = 1.0\text{MHz}$

Notes:

- Short duration pulse test used to minimize self-heating effect.
- 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>.
- No purposefully added lead.

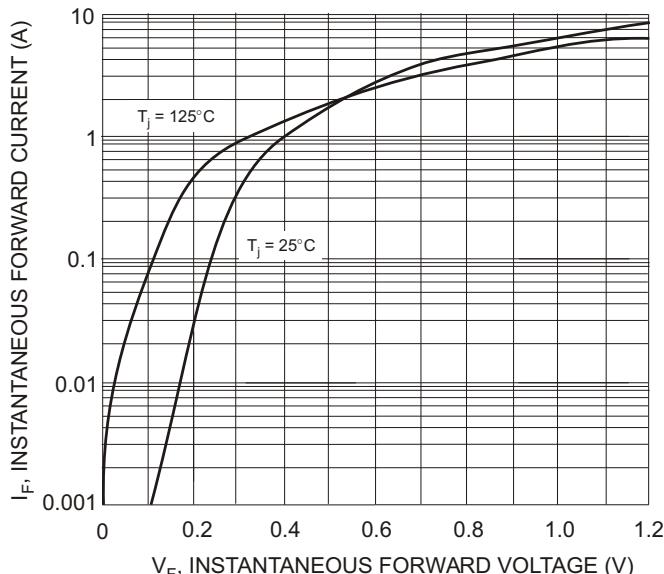


Fig. 1, Typical Forward Characteristics

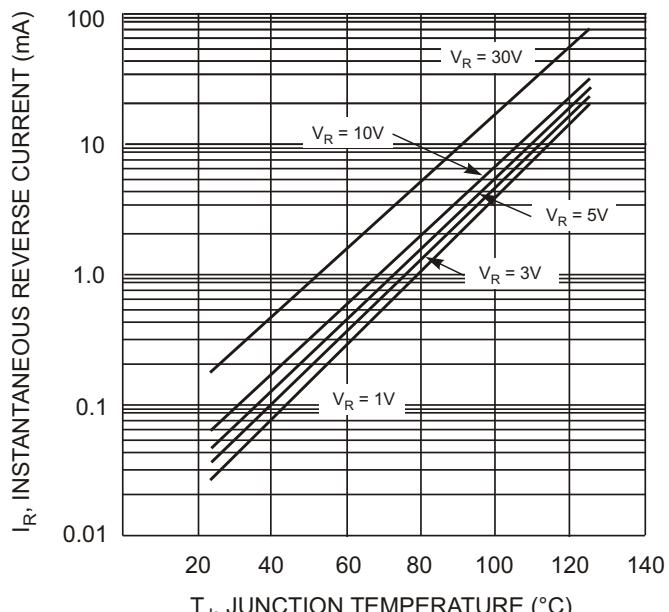


Fig. 2, Typical Pulsed Reverse Characteristics

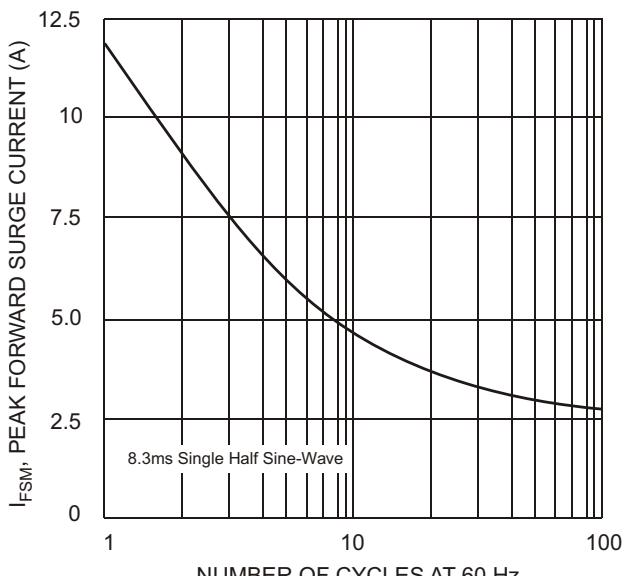


Fig. 3, Maximum Non-Repetitive Peak Forward Surge Current

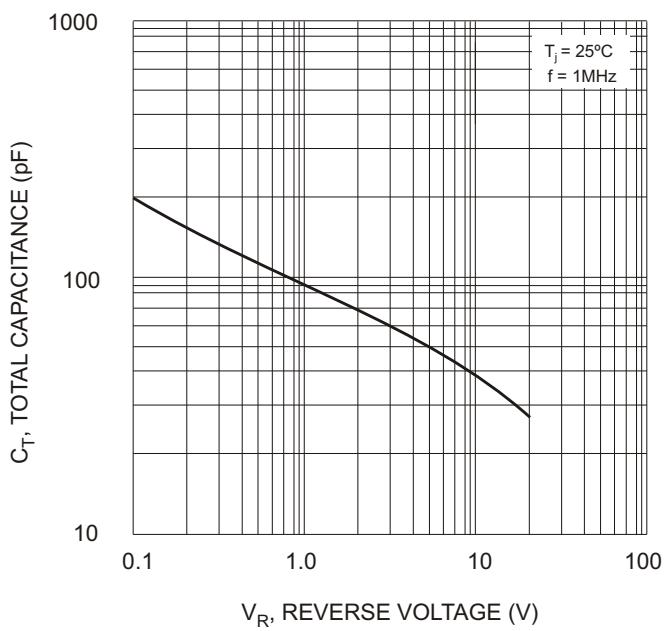


Fig. 4, Typical Total Capacitance vs. Reverse Voltage

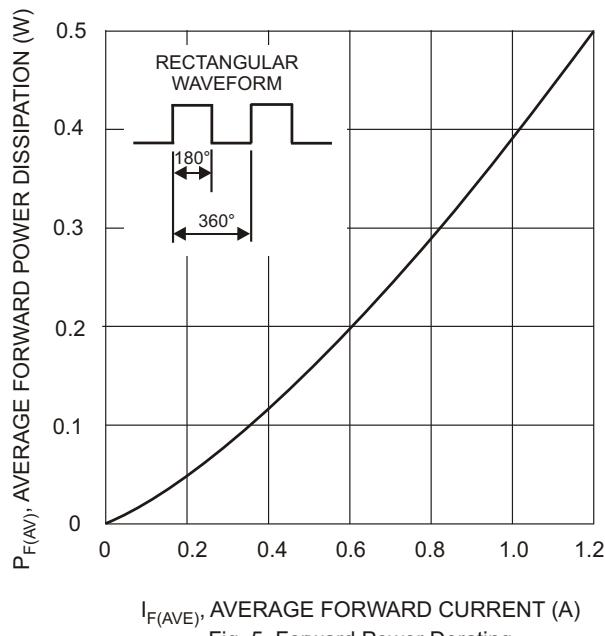


Fig. 5, Forward Power Derating

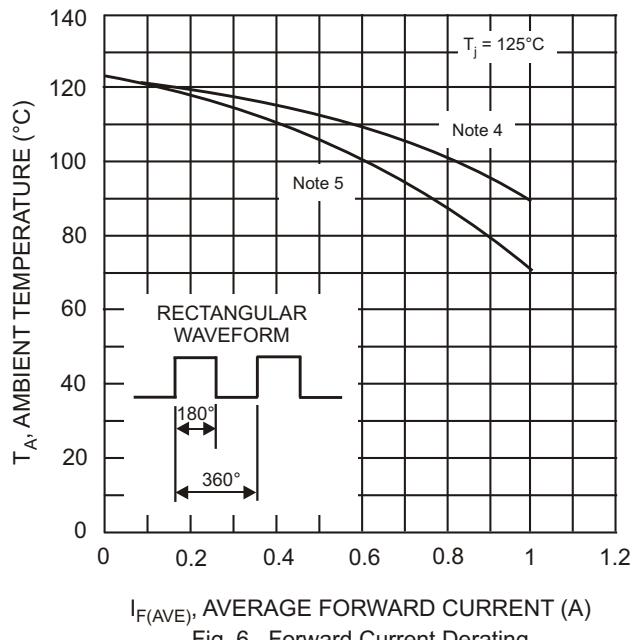


Fig. 6, Forward Current Derating

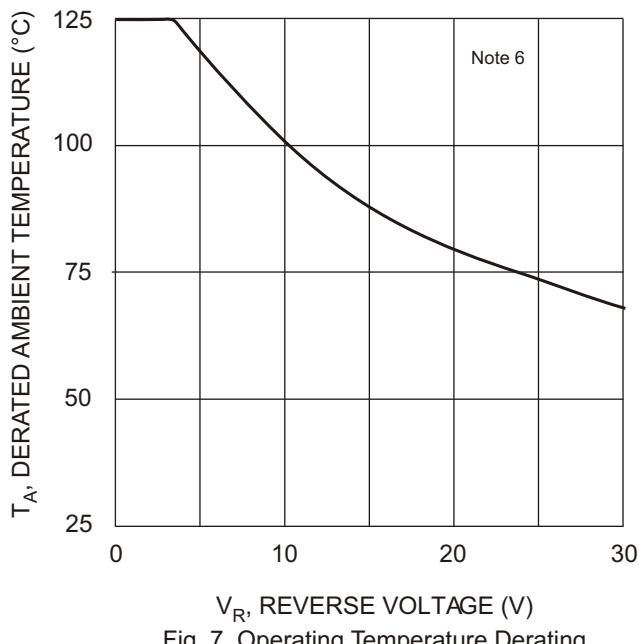


Fig. 7 Operating Temperature Derating

Notes:

4. Device mounted on GETEK substrate, 2" x 2", 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" x 2", 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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