

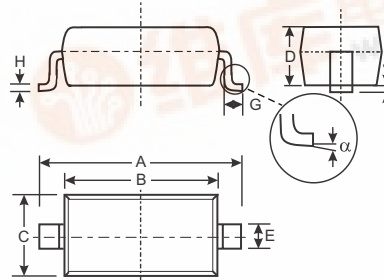
0.5A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

Features

- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- High Conductance
- Lead Free/RoHS Compliant (Note 4)
- Qualified to AEC-Q101 Standards for High Reliability

Mechanical Data

- Case: SOD-123
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Polarity: Cathode Band
- Leads: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Marking: Date Code & Type Code, See Page 2
- Type Code Marking: SD
- Ordering Information, See Page 2
- 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
α	0°	8°
All Dimensions in mm		

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

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

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	20	V
RMS Reverse Voltage	$V_{R(RMS)}$	14	V
Average Rectified Output Current @ $T_L = 90^\circ\text{C}$	I_O	0.5	A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	5.5	A
Power Dissipation (Note 1)	P_d	410	mW
Typical Thermal Resistance Junction to Ambient (Note 1)	$R_{\theta JA}$	244	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_j, T_{STG}	-65 to +125	$^\circ\text{C}$
Voltage Rate of Change (Note 3)	dv/dt	1000	V/ μs

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

Characteristic	Symbol	Value	Unit	Test Conditions
Minimum Reverse Breakdown Voltage (Note 2)	$V_{(BR)R}$	20	V	$I_R = 250\mu\text{A}$
Maximum Forward Voltage Drop (Note 2)	V_{FM}	0.300 0.385 0.220 0.330	V	$I_F = 0.1\text{A}, T_j = 25^\circ\text{C}$ $I_F = 0.5\text{A}, T_j = 25^\circ\text{C}$ $I_F = 0.1\text{A}, T_j = 100^\circ\text{C}$ $I_F = 0.5\text{A}, T_j = 100^\circ\text{C}$
Maximum Leakage Current (Note 2)	I_{RM}	75 250 5.0 8.0	μA mA	$V_R = 10\text{V}, T_j = 25^\circ\text{C}$ $V_R = 20\text{V}, T_j = 25^\circ\text{C}$ $V_R = 10\text{V}, T_j = 100^\circ\text{C}$ $V_R = 20\text{V}, T_j = 100^\circ\text{C}$
Typical Total Capacitance	C_T	170	pF	$f = 1\text{MHz}, V_R = 0\text{V DC}$

- Notes:
1. Device mounted on FR-4 PC board, 2"x2", 2 oz. Copper, single sided, Cathode pad dimensions 0.75"x1.0", Anode pad dimensions 0.25"x1.0".
 2. Pulse Test: Pulse width = 300 μs , Duty Cycle $\leq 2\%$.
 3. dv/dt measured at rated V_R .
 4. No purposefully added lead.



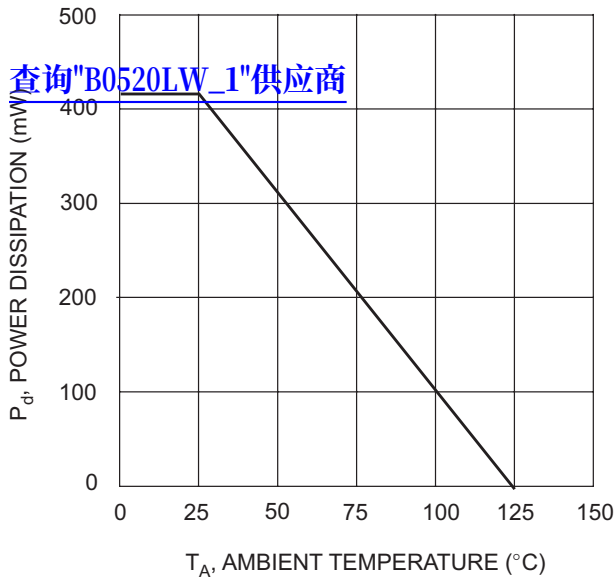


Fig. 1 Power Derating Curve

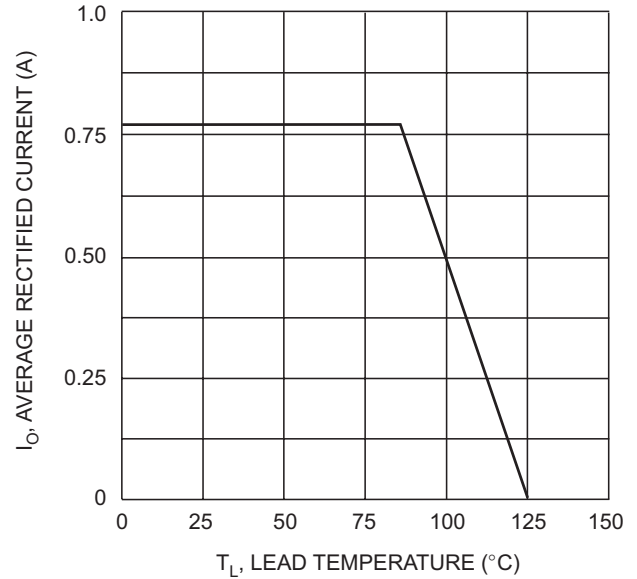


Fig. 2 Forward Current Derating Curve

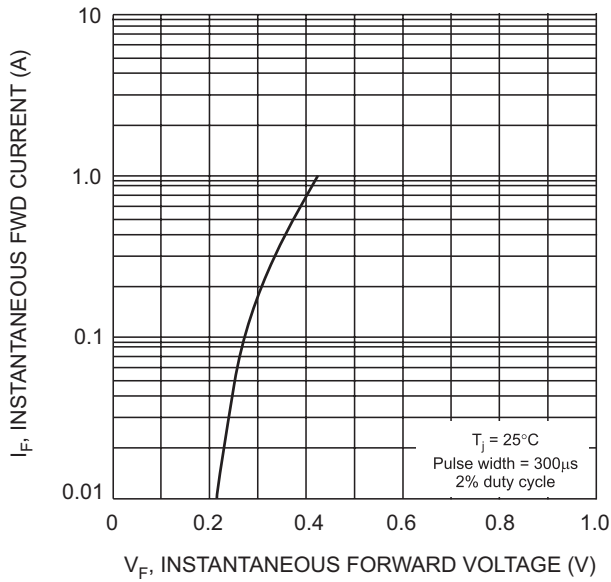


Fig. 3 Typical Forward Characteristics

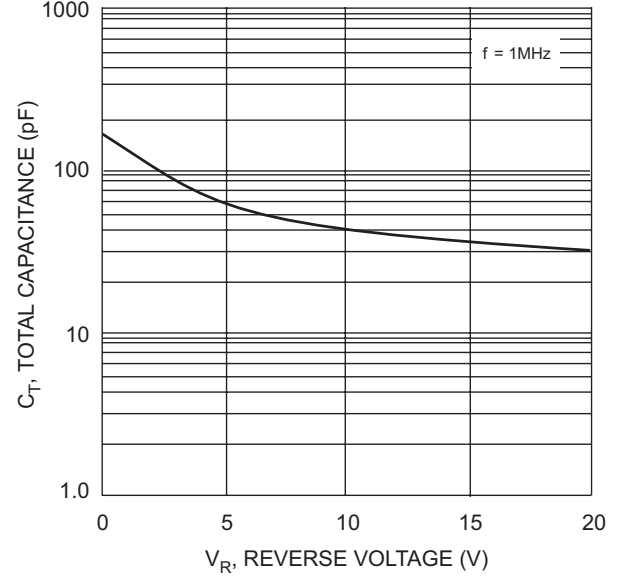


Fig. 4 Typ. Total Capacitance vs Reverse Voltage

Ordering Information (Note 5)

Device	Packaging	Shipping
B0520LW-7-F	SOD-123	3000/Tape & Reel

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

Marking Information



XX = Product Type Marking Code (See Sheet 1)
YM = Date Code Marking
Y = Year (ex: N = 2002)
M = Month (ex: 9 = September)

Date Code Key

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Code	J	K	L	M	N	P	R	S	T	U	V	W

Month	Jan	Feb	March	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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