B0520LW

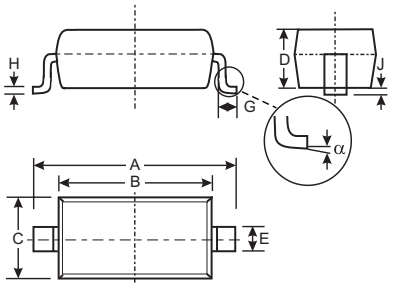
0.5A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

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°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°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	°C/W
Operating and Storage Temperature Range	T_j, T_{STG}	-65 to +125	°C
Voltage Rate of Change (Note 3)	dv/dt	1000	V/μs

Electrical Characteristics @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit	Test Conditions
Minimum Reverse Breakdown Voltage (Note 2)	$V_{(BR)R}$	20	V	I_R = 250μA
Maximum Forward Voltage Drop (Note 2)	V_{FM}	0.300 0.385 0.220 0.330	V	I_F = 0.1A, T_j = 25°C I_F = 0.5A, T_j = 25°C I_F = 0.1A, T_j = 100°C I_F = 0.5A, T_j = 100°C
Maximum Leakage Current (Note 2)	I_{RM}	75 250	μA	V_R = 10V, T_j = 25°C V_R = 20V, T_j = 25°C
		5.0 8.0	mA	V_R = 10V, T_j = 100°C V_R = 20V, T_j = 100°C
Typical Total Capacitance	C_T	170	pF	f = 1MHz, V_R = 0V 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 = 300μs, Duty Cycle ≤ 2%.
3. dv/dt measured at rated V_R.
4. No purposefully added lead.

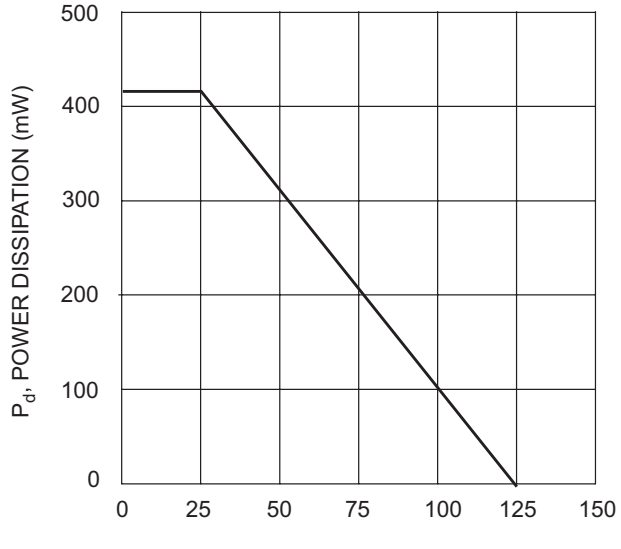


Fig. 1 Power Derating Curve

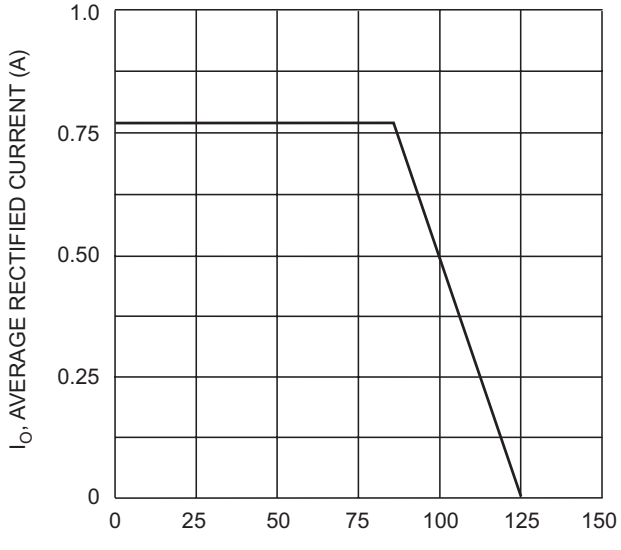


Fig. 2 Forward Current Derating Curve

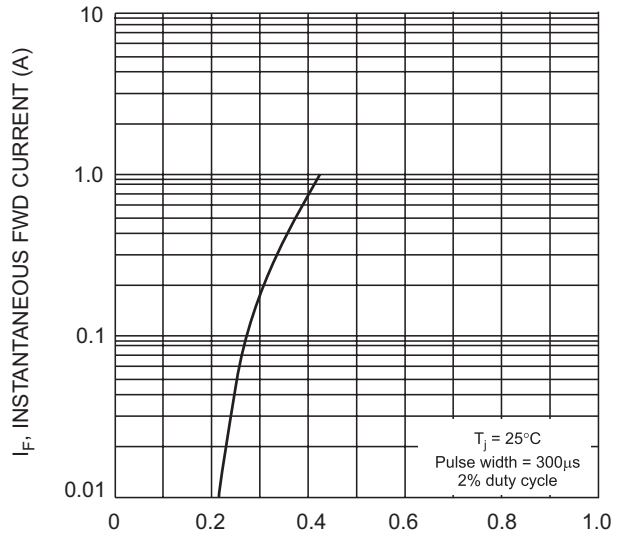


Fig. 3 Typical Forward Characteristics

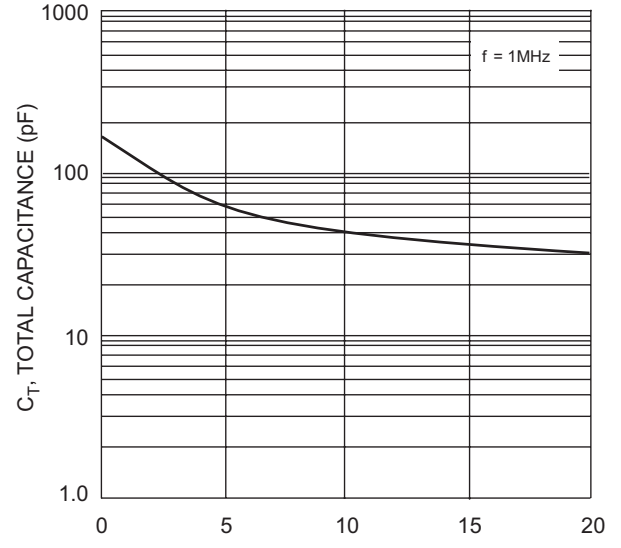


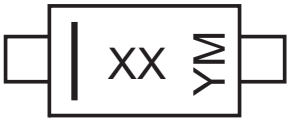
Fig. 4 Typ. Total Capacitance vs Reverse Voltage

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

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** 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 expressed written approval of Diodes Incorporated.