B0520LW

0.5A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

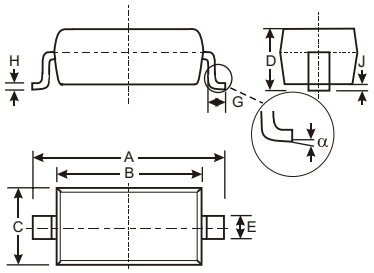
NEW PRODUCT

Features

- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- High Conductance

Mechanical Data

- Case: SOD-123, Plastic
- Case material - UL Flammability Rating Classification 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Polarity: Cathode Band
- Leads: Solderable per MIL-STD-202, Method 208
- Marking: Date Code & Type Code, See Page 2
- Type Code Marking: SD
- Weight: 0.01 grams (approx.)
- Ordering Information, See Page 2



SOD-123		
Dim	**Min**	**Max**
A	3.55	3.85
B	2.55	2.85
C	1.40	1.70
D	—	1.35
E	0.55 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	B0520LW	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	dv/dt	1000	V/μs

Electrical Characteristics @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	B0520LW	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 = 15V, 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
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.

NEW PRODUCT

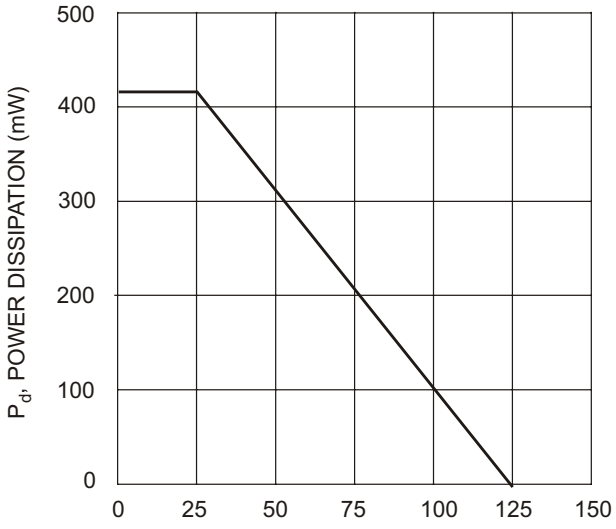


Fig. 1 Power Derating Curve

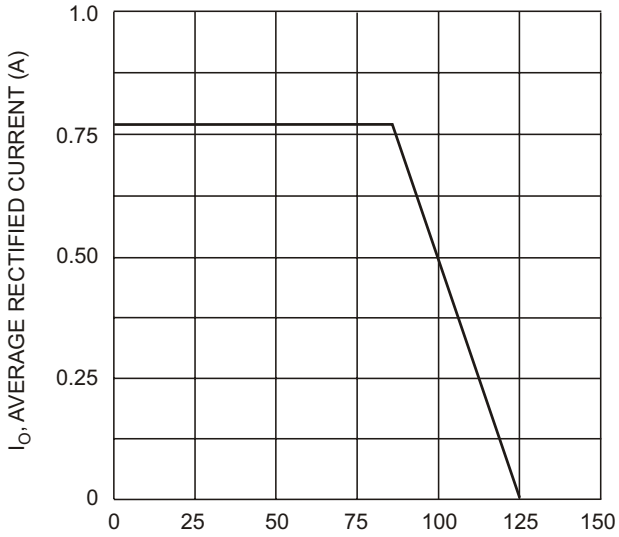


Fig. 2 Forward Current Derating Curve

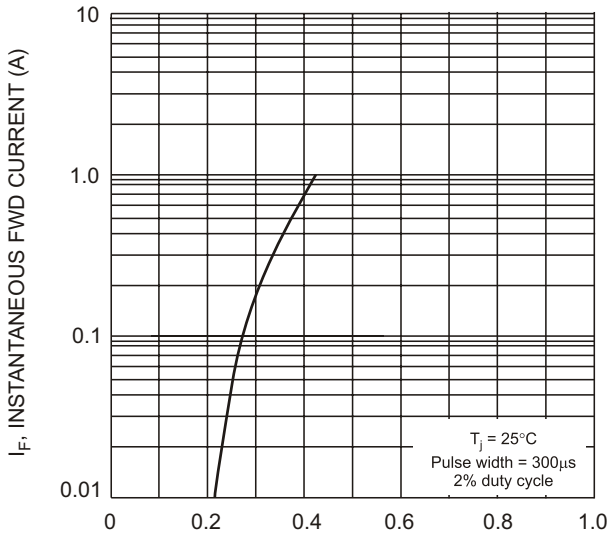


Fig. 3 Typical Forward Characteristics

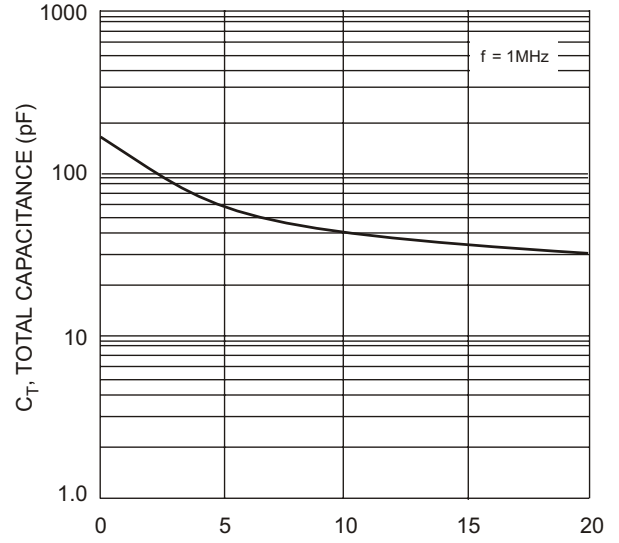


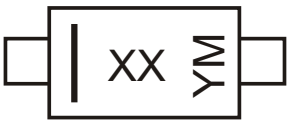
Fig. 4 Typ. Total Capacitance vs Reverse Voltage

Ordering Information (Note 4)

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

Notes: 4. 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
Code	J	K	L	M	N	P	R	S	T	U	V

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