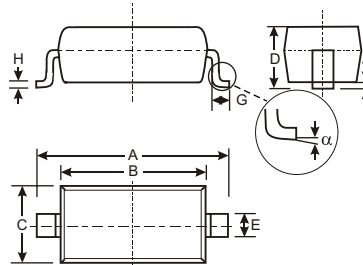


### Features

- 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
$\alpha$	0°	8°
All Dimensions in mm		

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

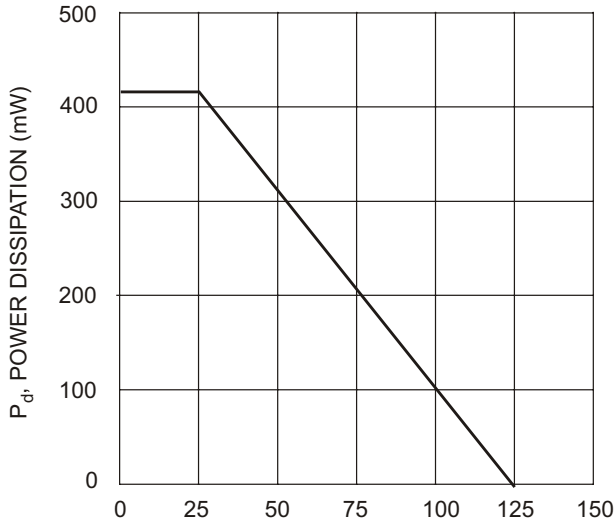
Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

Characteristic	Symbol	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 @ $T_L = 90^\circ\text{C}$	$I_O$	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	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +125	$^\circ\text{C}$
Voltage Rate of Change	$dv/dt$	1000	$\text{V}/\mu\text{s}$

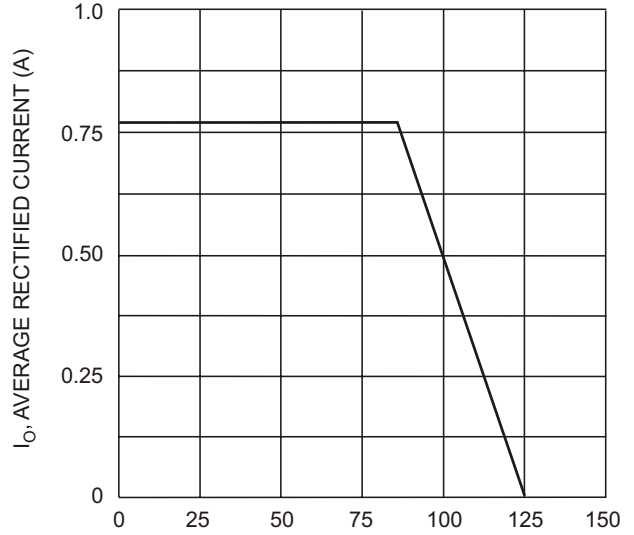
### Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	B0520LW	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	$\mu\text{A}$	$V_R = 10\text{V}, T_J = 25^\circ\text{C}$ $V_R = 15\text{V}, T_J = 25^\circ\text{C}$ $V_R = 20\text{V}, T_J = 25^\circ\text{C}$
		5.0 8.0	$\text{mA}$	$V_R = 10\text{V}, T_J = 100^\circ\text{C}$ $V_R = 20\text{V}, T_J = 100^\circ\text{C}$
Total Capacitance	$C_T$	170	$\text{pF}$	$f = 1\text{MHz}, V_R = 0\text{V DC}$

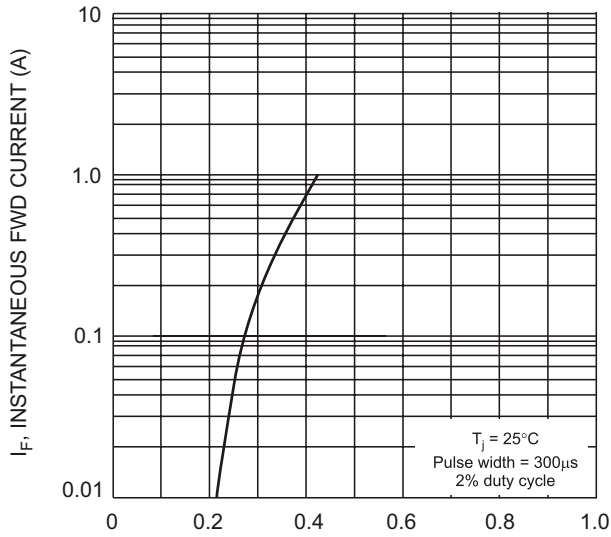
- Notes:
1. Device mounted on FR-4 PC board, 2"x2", 2 oz. Copper, single sided, Cathode pad dimensions 0.75"x1.0", Anode pad dimensions 0.25"x1.0".
  2. Pulse Test: Pulse width = 300 $\mu\text{s}$ , Duty Cycle  $\leq$  2%.
  3.  $dv/dt$  measured at rated  $V_R$ .



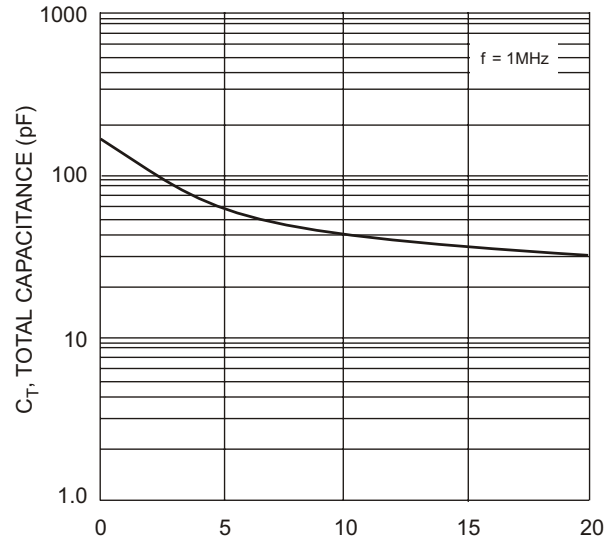
$T_A$ , AMBIENT TEMPERATURE (°C)  
Fig. 1 Power Derating Curve



$T_L$ , LEAD TEMPERATURE (°C)  
Fig. 2 Forward Current Derating Curve



$V_F$ , INSTANTANEOUS FORWARD VOLTAGE (V)  
Fig. 3 Typical Forward Characteristics



$V_R$ , REVERSE VOLTAGE (V)  
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