

Features

- Low Forward Voltage Drop
- Fast Switching
- Small Surface Mount Package
- PN Junction Guard Ring for Transient and ESD Protection
- Available in Lead Free Version

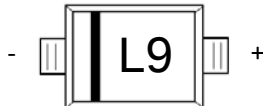
Marking: L9



SOD-123 top view



Schematic diagram



The marking bar indicates the cathode



Halogen-Free

Maximum Ratings($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_R	DC Blocking voltage	30	V
$V_{R(RMS)}$	RMS Reverse Voltage	21	V
I_O	Average rectified output current	100	mA
I_F	Forward Continuous Current	200	mA
I_{FRM}	Repetitive peak forward current	300	mA
I_{FSM}	Non-repetitive Peak Forward Surge Current @ $t=8.3\text{ms}$	600	mA
P_D	Power Dissipation	500	mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	200	$^{\circ}\text{C/W}$
T_J	Operating Junction Temperature Range	$-40\sim+125$	$^{\circ}\text{C}$
T_{stg}	Storage Temperature Range	$-55\sim+150$	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS($T_a=25^{\circ}\text{C}$ unless otherwise specified)

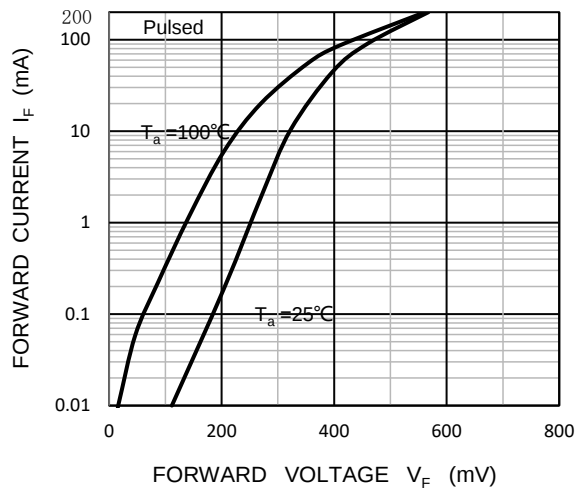
Symbol	Parameter	Condition	Min	Typ	Max	Unit
$V_{(BR)}$	Reverse breakdown voltage	$I_R=100\mu\text{A}$	30	--	--	V
I_R	Reverse current	$V_R=25\text{V}$	--	--	2	μA
V_F	Forward voltage	$I_{F1}=0.1\text{mA}$	--	--	240	mV
		$I_{F2}=1\text{mA}$	--	--	320	
		$I_{F3}=10\text{mA}$	--	--	400	
		$I_{F4}=30\text{mA}$	--	--	500	
		$I_{F5}=25\text{mA}$	--	--	1000	
C_T	Capacitance between terminals	$V_R=1\text{V}$, $f=1\text{MHz}$	--	--	10	pF
t_{rr}	Reverse recovery time	$I_F=10\text{mA}$ $I_R=10\text{mA}$ to 1mA $R_L=100\Omega$	--	--	5	ns

Ordering Information (Example)

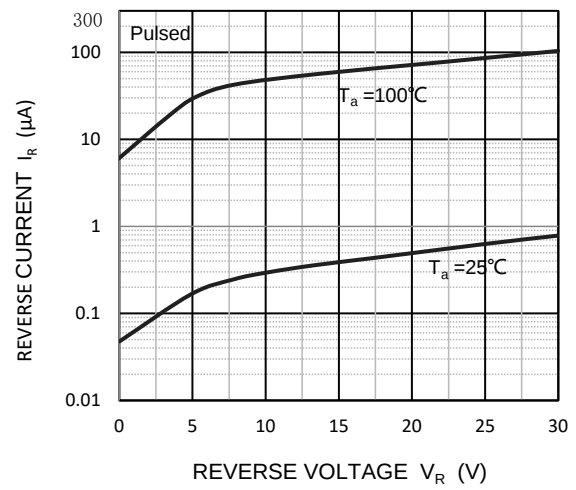
Type	Package	Marking	Minimum	Inner Box	Outer	Delivery
BAT54W	SOD-123	L9	3,000	45,000	180,000	7"reel

Typical Operating Characteristics

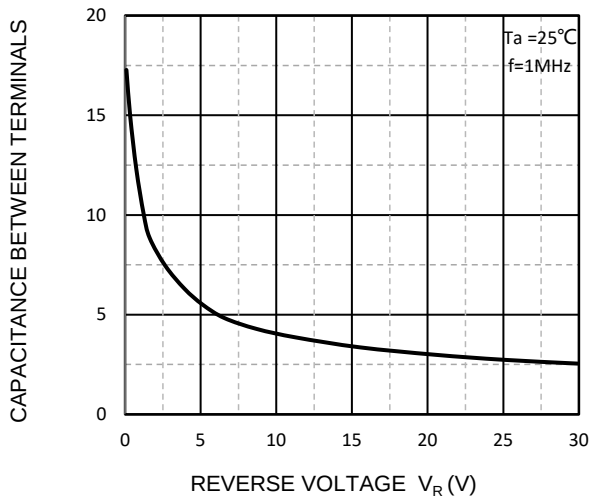
Forward Characteristics



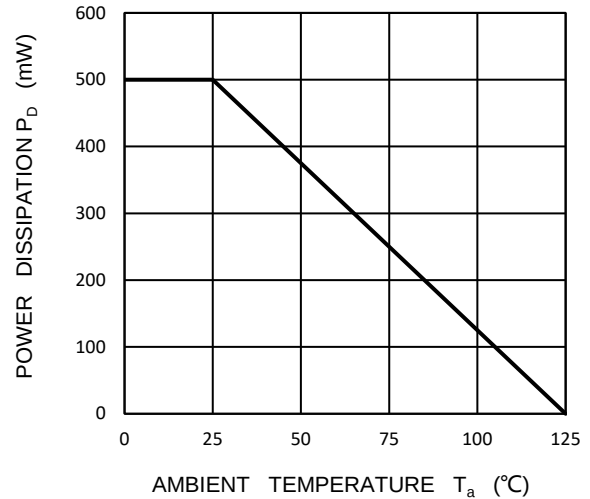
Reverse Characteristics



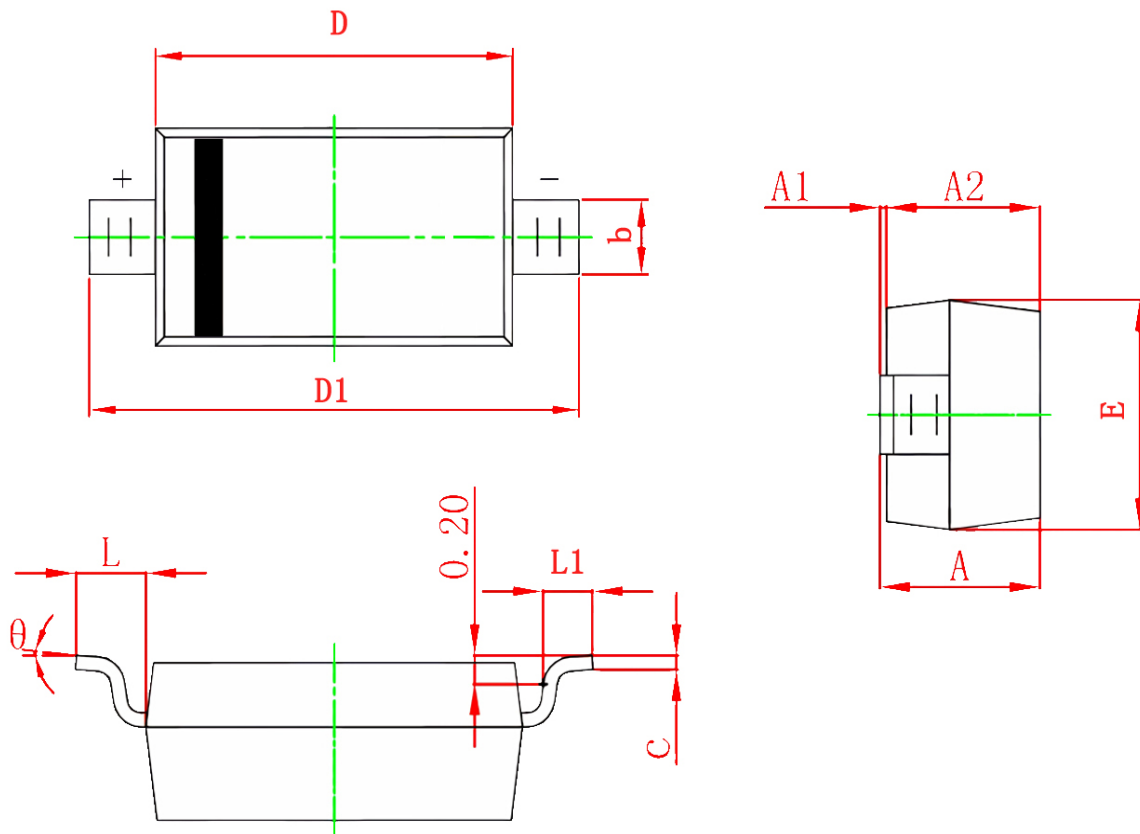
Capacitance Characteristics



Power Derating Curve



SOD-123 Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.450	0.650	0.018	0.026
c	0.080	0.150	0.003	0.006
D	2.600	2.800	0.102	0.110
D1	3.550	3.850	0.140	0.152
E	1.500	1.700	0.059	0.067
L	0.500 REF		0.020 REF	
L1	0.250	0.450	0.010	0.018
θ	0°	8°	0°	8°