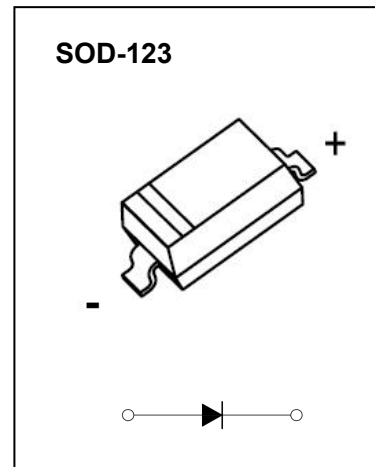


## FAST SWITCHING DIODE

## FEATURES

- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automatic Insertion
- For General Purpose Switching Applications
- High Conductance
- AEC-Q101 qualified (Automotive grade with suffix "Q".)
- Exsemi technology

## MARKING: T4

Maximum Ratings and Electrical Characteristics, Single Diode @ $T_a=25^{\circ}\text{C}$ 

Parameter	Symbol	Limit	Unit
Non-Repetitive Peak Reverse Voltage	$V_{RM}$	100	V
Peak Repetitive Peak Reverse Voltage	$V_{RRM}$	100	V
Working Peak Reverse Voltage	$V_{RWM}$		
DC Blocking Voltage	$V_R$		
RMS Reverse Voltage	$V_{R(RMS)}$	71	V
Forward Continuous Current	$I_{FM}$	300	mA
Average Rectified Output Current	$I_O$	150	mA
Non-Repetitive Peak Forward Surge Current @ $t=8.3\text{ms}$	$I_{FSM}$	2.0	A
Power Dissipation	$P_d$	350	mW
Thermal Resistance from Junction to Ambient(Note 1)	$R_{\theta JA}$	250	$^{\circ}\text{C/W}$
Junction Temperature	$T_J$	150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55~+150	$^{\circ}\text{C}$

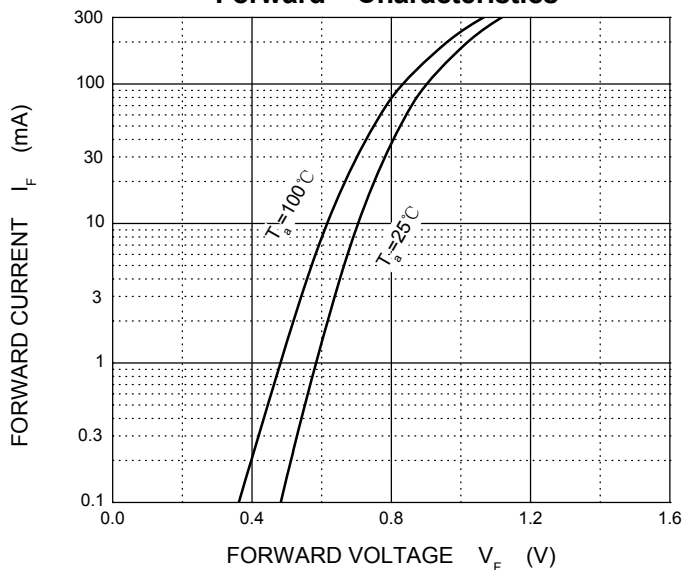
Note 1: Device mounted on 1"x1" FR4 PCB, 1oz single-side copper.

## Electrical Ratings @Ta=25°C

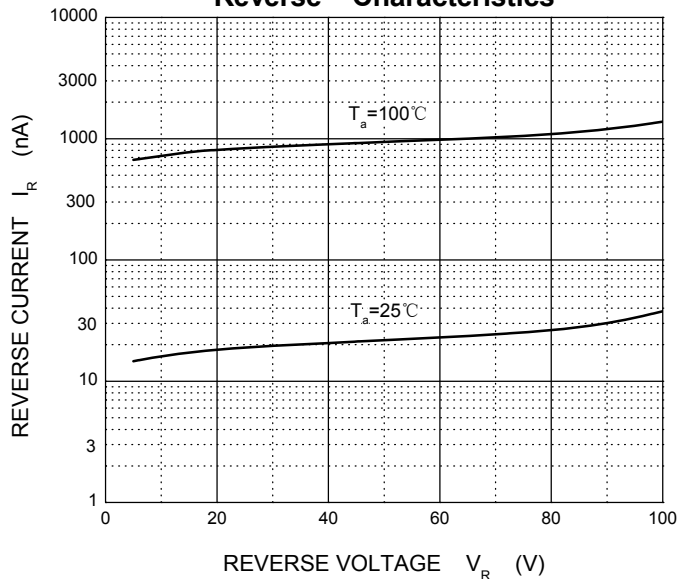
Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Forward voltage	$V_{F1}$			0.715	V	$I_F=1\text{mA}$
	$V_{F2}$			0.855	V	$I_F=10\text{mA}$
	$V_{F3}$			1.0	V	$I_F=50\text{mA}$
	$V_{F4}$			1.25	V	$I_F=150\text{mA}$
Reverse current	$I_{R1}$			1	$\mu\text{A}$	$V_R=75\text{V}$
	$I_{R2}$			25	nA	$V_R=20\text{V}$
Capacitance between terminals	$C_T$			2	pF	$V_R=0\text{V}, f=1\text{MHz}$
Reverse recovery time	$t_{rr}$			4	ns	$I_F=I_R=10\text{mA}$ $I_{rr}=0.1 \times I_R, R_L=100\Omega$

Typical Characteristics

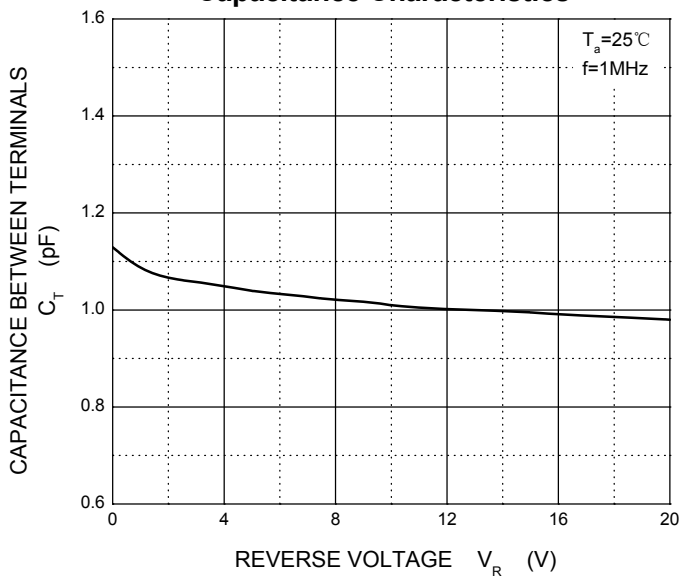
Forward Characteristics



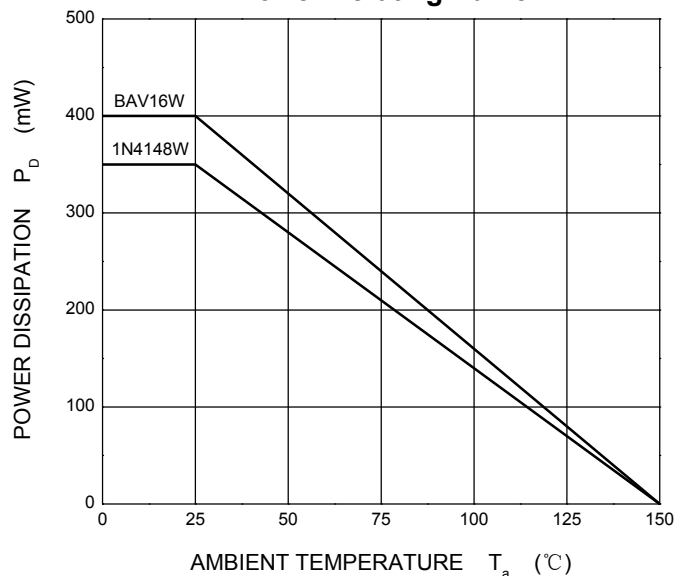
Reverse Characteristics



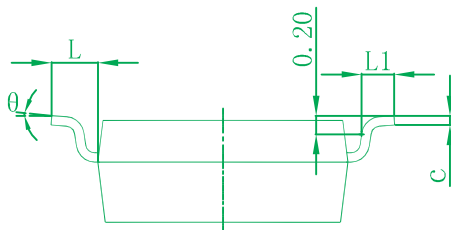
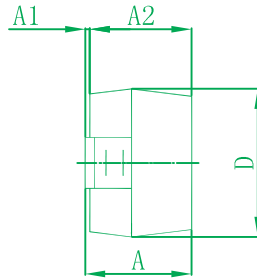
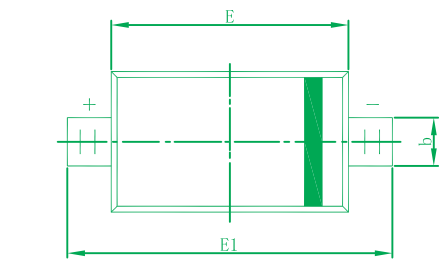
Capacitance Characteristics



Power Derating Curve

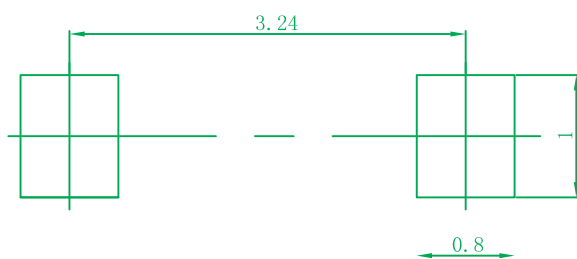


## SOD-123 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.250	0.035	0.049
A1	0.000	0.100	0.000	0.004
A2	0.900	1.150	0.035	0.045
b	0.450	0.650	0.018	0.026
c	0.080	0.150	0.003	0.006
D	1.500	1.700	0.059	0.067
E	2.600	2.800	0.102	0.110
E1	3.550	3.850	0.140	0.152
L	0.500 REF		0.020 REF	
L1	0.250	0.450	0.010	0.018
θ	0°	8°	0°	8°

## SOD-123 Suggested Pad Layout

**Note:**

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

## Ordering information

Device	Package	Shipping
1N4148W	SOD-123	3000/Tape&Reel(7inches)