MERRYELC

SOD-123

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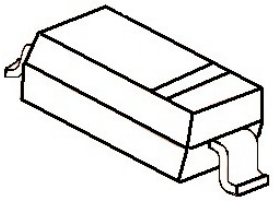
500mW SOD-123 Fast Switching Diode



MARKING:

Features

- 4.0nS; Fast Switching Device (TRR <4.0 nS)
- 500mW; Power Dissipation of 500mW
- High Stability and High Reliability
- Low reverse leakage

Mechanical Data

- SOD-123 Small Outline Plastic Package
- Polarity: Color band denotes cathode end
- Epoxy UL: 94V-0
- Mounting Position: Any

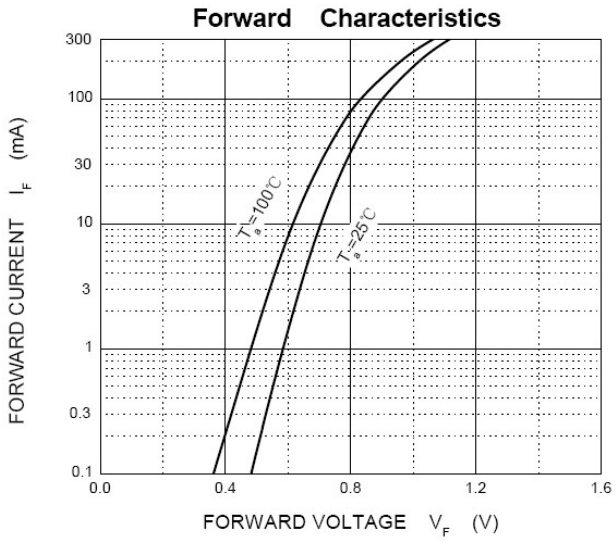
Maximum Ratings & Thermal Characteristics (Ratings at 25℃ ambient temperature unless otherwise specified.)

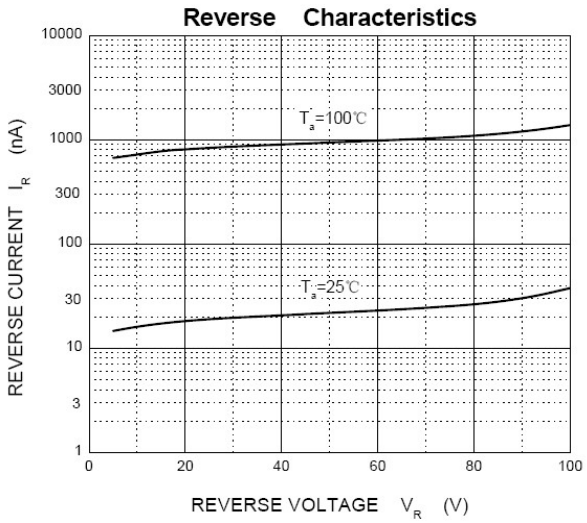
Parameters	Symbol	Value	Unit
Peak Reverse Voltage	V_{RM}	100	V
Power Dissipation	Pd	500	mW
Operating junction temperature	Tj	150	℃
Storage temperature range	T_{STG}	-65-+150	℃
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	250	℃/W
	$R_{\theta JC}$	200	℃/W
Average Rectified Current	I_O	150	mA
Non-repetitive Peak Forward Current	I_{FM}	300	mA
Peak Forward Surge Current @tp=1us; TA=25℃	I_{FSM}	2.0	A

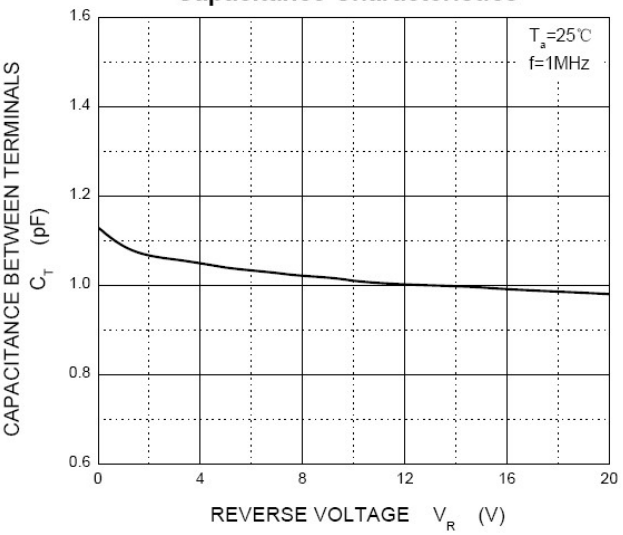
Valid provided that electrodes are kept at ambient temperature.

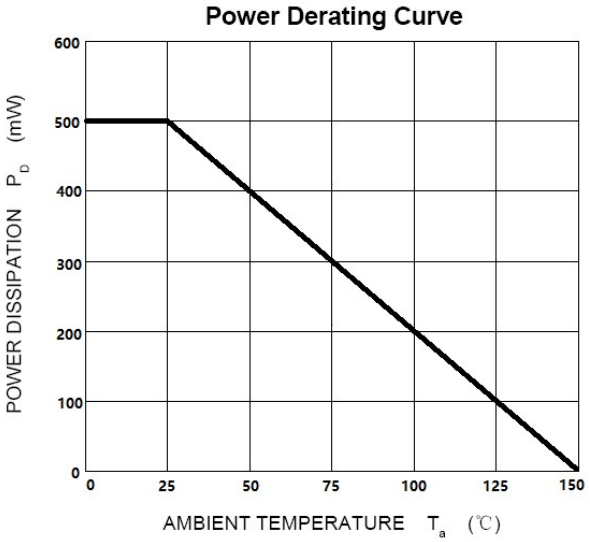
Electrical Characteristics (Ratings at 25℃ ambient temperature unless otherwise specified).

Symbols	Parameter	Test Condition	Limits		Unit
			Min	Max	
B_V	Breakdown Voltage	IR=100uA	100		V
I_R	Reverse Leakage Current	VR=20V	---	25	nA
		VR=20V Tj=150℃	---	50	uA
		VR=75	---	5	uA
V_F	Forward Voltage	IF=10mA	---	1.00	V
		IF=100mA	---	1.25	
T_{RR}	Reverse Recovery Time	IF = IR = 10mA,	---	4	nS
		Irr=0.1XIR			
		RL=100Ω			
C	Capacitance	VR=0V, f=1MHZ	---	4	pF


Forward Characteristics
FORWARD CURRENT I_F (mA)
300
100
30
10
3
1
0.3
0.1
0.0
0.4
0.8
1.2
1.6
T_a=100℃
T_a=25℃
FORWARD VOLTAGE V_F (V)

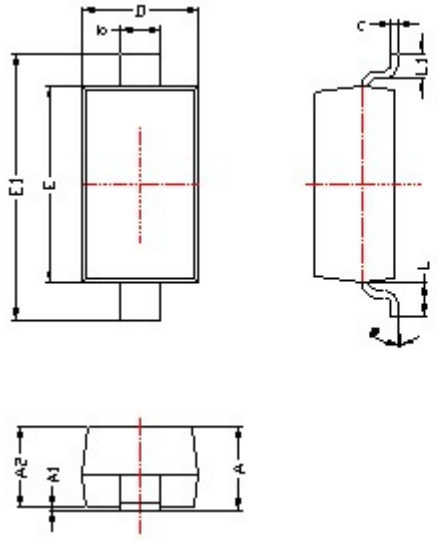

Reverse Characteristics
REVERSE CURRENT I_R (nA)
10000
3000
1000
300
100
30
10
3
1
0
20
40
60
80
100
T_a=100℃
T_a=25℃
REVERSE VOLTAGE V_R (V)


Capacitance Characteristics
CAPACITANCE BETWEEN TERMINALS C_T (pF)
1.6
1.4
1.2
1.0
0.8
0.6
0
4
8
12
16
20
T_a=25℃
f=1MHz
REVERSE VOLTAGE V_R (V)


Power Derating Curve
POWER DISSIPATION P_D (mW)
600
500
400
300
200
100
0
0
25
50
75
100
125
150
AMBIENT TEMPERATURE T_a (℃)

SOD-123 PACKAGE OUTLINE

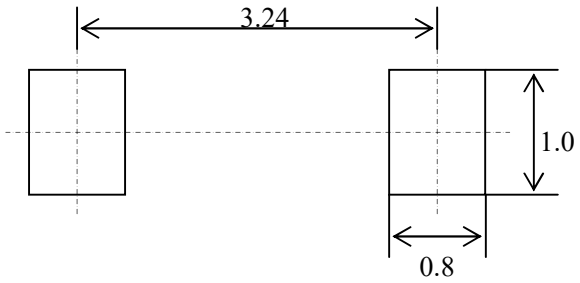
Plastic surface mounted package



SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.450	0.650
c	0.080	0.150
D	1.500	1.700
E	2.600	2.800
E1	3.550	3.850
L	0.500REF	
L1	0.250	0.450
θ	0°	8°

Precautions: PCB Design

Recommended land dimensions for SOD-123 diode. Electrode patterns for PCBs



Center distance: 3.24

Pin width: 0.55

welding plate width: 1.00

Pin length: 0.50

welding plate length: 0.80

Technicial requirement:

1, dimension: 2.70 X 1.60

2: unmark tolerance: ±0.05

3, Unit: mm