

FEATURES

- | Fast Switching Device (TRR <4.0 nS)

- | Power Dissipation of 500mW

- | High Stability and High Reliability

- | Low reverse leakage



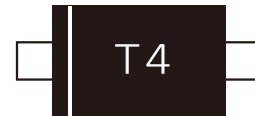
SOD-123

MECHANICAL DATA

- | Encapsulation: SOD-123 Small Outline Plastic Package

- | Polarity: Color band denotes cathode end

- | Mounting Position: Any



Marking



Schematic Symbol

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS (T_A=25°C)

Parameter	Symbol	Value	Unit
Peak Reverse Voltage	V _{RM}	100	V
Power Dissipation	Pd	500	mW
Thermal Resistance from Junction to Ambient	R _{θJA}	250	°C/W
Average Rectified Current	I _o	150	mA
Non-repetitive Peak Forward Current	I _{FM}	300	mA
Peak Forward Surge Current @tp=1us; T _A =25°C	I _{FSM}	2.0	A
Operating junction temperature range	T _J	150	°C
Storage temperature range	T _{STG}	-65 to 150	°C

ELECTRICAL CHARACTERISTICS(T_A=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Breakdown Voltage	B _V	I _R =100μA	100			V
Reverse Leakage Current	I _R	V _R =20V			25	nA
		V _R =20V T _j =150°C			50	μA
		V _R =75V			5	μA
Forward Voltage	V _F	I _F =10mA			1.00	V
		I _F =100mA			1.25	V
Capacitance	C _J	V _R =0V, f=1MHz			4	pF
Reverse Recovery Time	t _{rr}	I _F =I _R =10mA, R _L =100Ω, I _{RR} =0.1×I _R			4	nS

CHARACTERISTIC CURVES

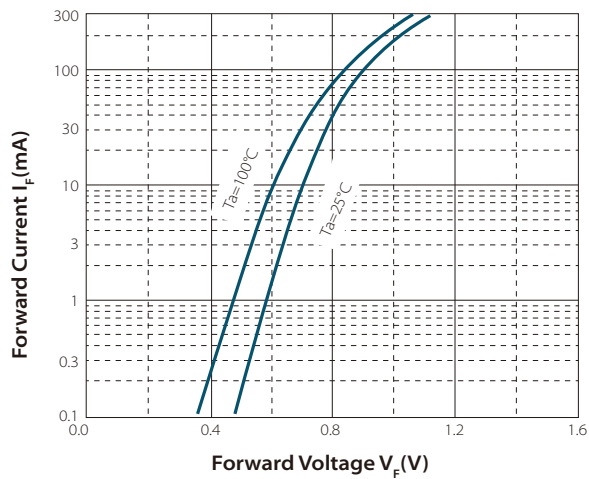
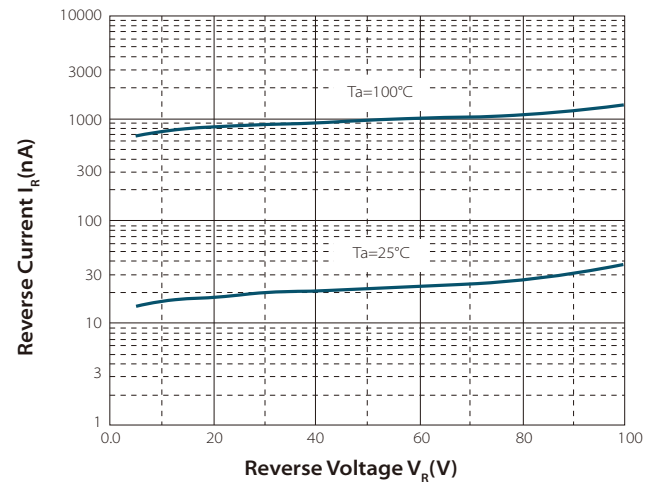
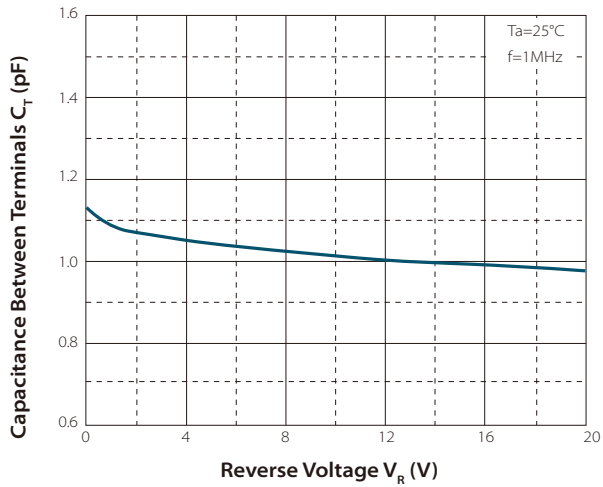
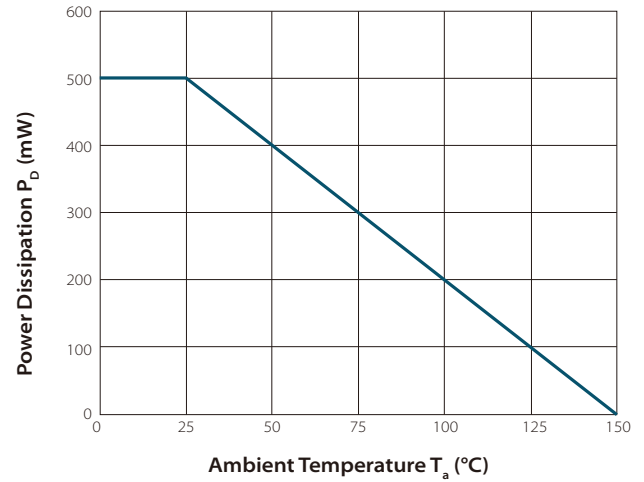
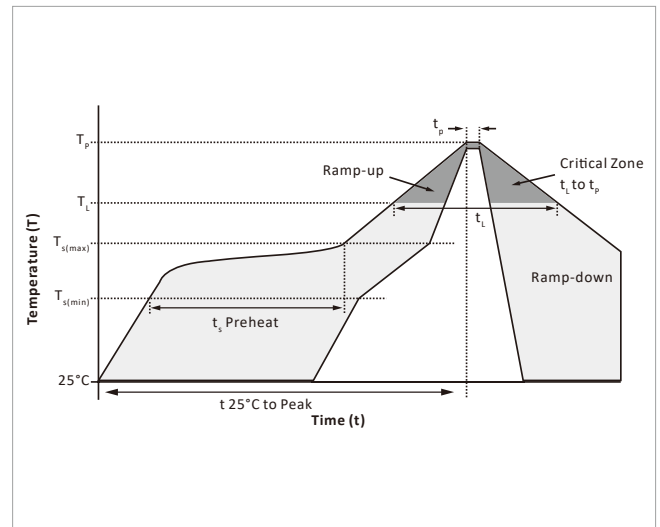
Fig.1 Forward Characteristics

Fig.2 Reverse Characteristics


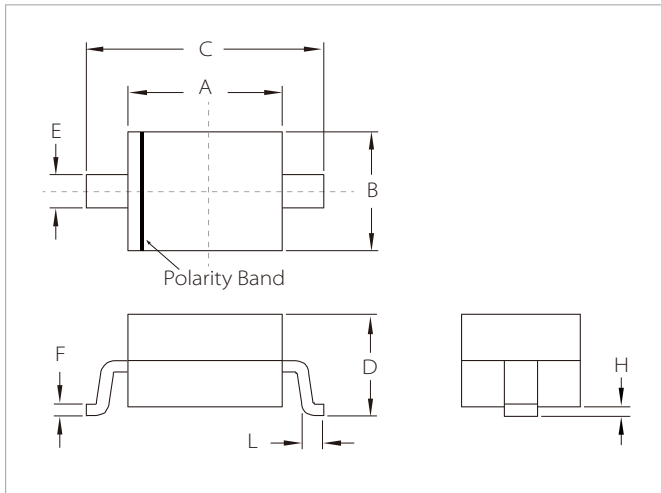
Fig.3 Capacitance Characteristics

Fig.4 Power Derating Curve


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(\min)}$)	150 $^\circ\text{C}$
	Temperature Max ($T_{s(\max)}$)	200 $^\circ\text{C}$
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3 $^\circ\text{C}/\text{second}$ max
$T_{s(\max)}$ to T_L - Ramp-up Rate		3 $^\circ\text{C}/\text{second}$ max
Reflow	Temperature (T_L) (Liquidus)	217 $^\circ\text{C}$
	Time (min to max) (t_r)	60 – 150 seconds
Peak Temperature (T_p)		260 $^\circ\text{C}$
Time within 5 $^\circ\text{C}$ of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6 $^\circ\text{C}/\text{second}$ max
Time 25 $^\circ\text{C}$ to peak Temperature (T_p)		8 minutes max.
Do not exceed		260 $^\circ\text{C}$

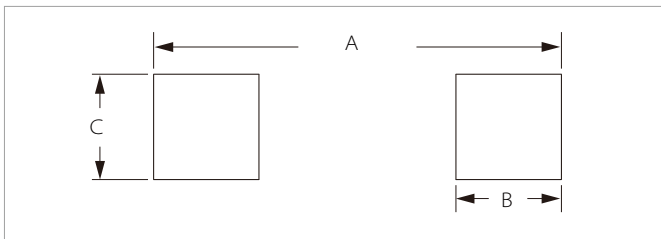


SOD-123 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.60	2.80	0.102	0.110
B	1.50	1.70	0.059	0.067
C	3.55	3.85	0.140	0.152
D	1.05	1.25	0.041	0.049
E	0.45	0.65	0.018	0.026
F	0.08	0.15	0.003	0.006
H	0.00	0.10	0.000	0.004
L	0.25	0.45	0.010	0.018

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	3.19	3.29	0.126	0.130
B	0.75	0.85	0.030	0.033
C	0.95	1.05	0.037	0.041

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
1N4148W	SOD-123	3000PCS	7"

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