

1N4148W

HIGH SPEED SWITCHING RECTIFIERS



VOLTAGE: 75 Volts

POWER: 350 mW

SOD-123

Marking and Polarity

FEATURES

- Fast Switching Device (TRR <4.0 nS)
- High Stability and High Reliability
- Low reverse leakage

MECHANICAL DATA

- **Package:** SOD-123
- **Epoxy UL:** 94V-0
- **Mounting position:** Any
- **Weight:** App. 0.01 grams (0.0004 ounce)



Remark:

- ①. T4=Modle code
- ②. White band denotes cathode

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

Parameter	Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage	V_{RM}	100	V
Repetitive Peak Reverse Voltage	V_{RRM}	75	V
Average Rectified Output Current	I_O	150	mA
Forward Continuous Current	I_{FM}	300	mA
Non-Repetitive Peak Forward Surge Current (@t=1.0us)	I_{FSM}	2.0	A
Power Dissipation (Note 1)	P_D	350	mW
Operating Temperature Range	T_J	150	°C
Storage temperature range	T_{STG}	-55~+150	°C

Notes: 1.P. C. B mounted with 0.1**0.1*(2.54x 2.54 mm) copper Pad Areas

Electrical Characteritic (Rating at 25°C ambient temperature unle otherwie pecified).

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Breakdown Voltage	$I_R=100\mu A$	V_{BR}	100	-	-	V
	$I_R=5\mu A$		75	-	-	V
Forward Voltage	$I_F = 1mA$	V_F	-	-	0.72	V
	$I_F = 10mA$		-	-	0.86	
	$I_F = 50mA$		-	-	1	
	$I_F = 150mA$		-	-	1.3	
Reverse current	$V_R=75V$ (25°C)	I_R	-	-	1	μA
	$V_R=20V$ (25°C)		-	-	25	nA
	$V_R=75V$ (150°C)		-	-	50	μA
Capacitance	$V_R=0V, f=1MHz$	C_T	-	-	2	pF
Reverse Recovery Time	$I_F = I_R = 10mA,$ $IRR = 1mA, RL = 100\Omega$	t_{rr}	-	-	4	ns

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RATING AND CHARACTERISTIC CURVES

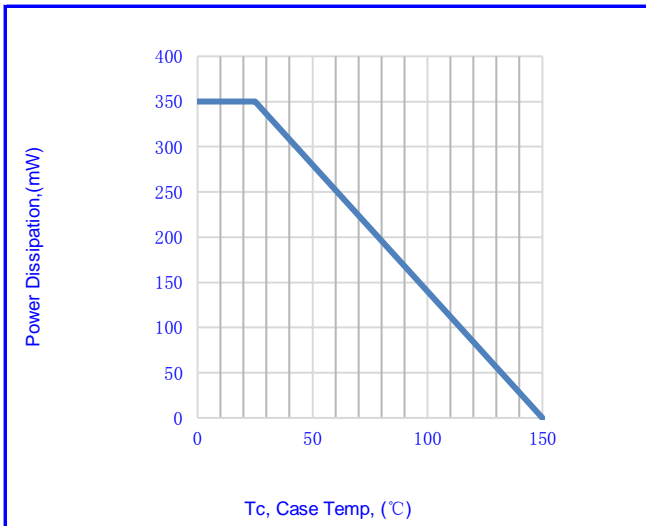


Fig.1-POWER DISSIPATION VS. AMBIENT TEMP.

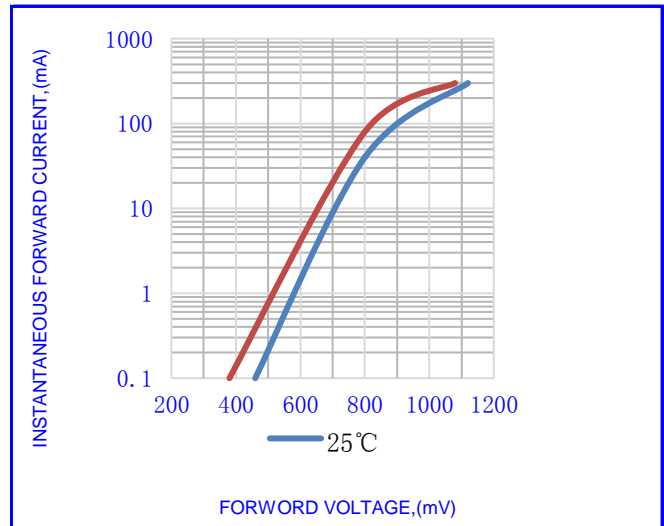


Fig.2- Forward characteristics

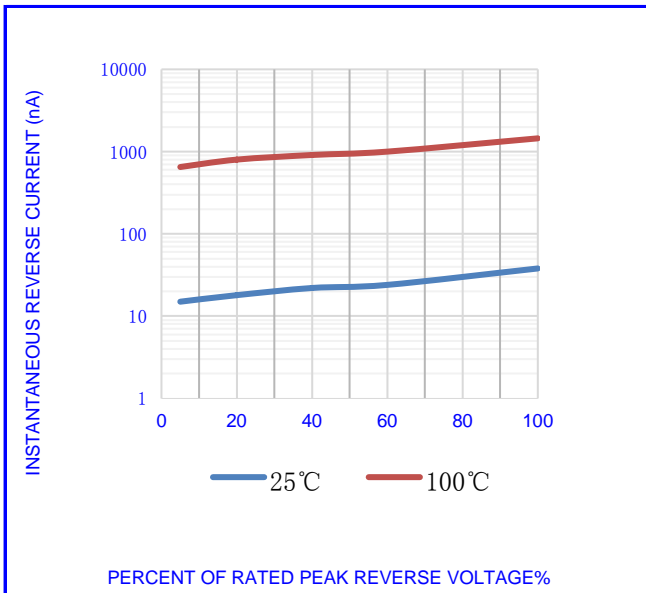


Fig.3- TYPICAL REVERSE CHARACTERISTICS

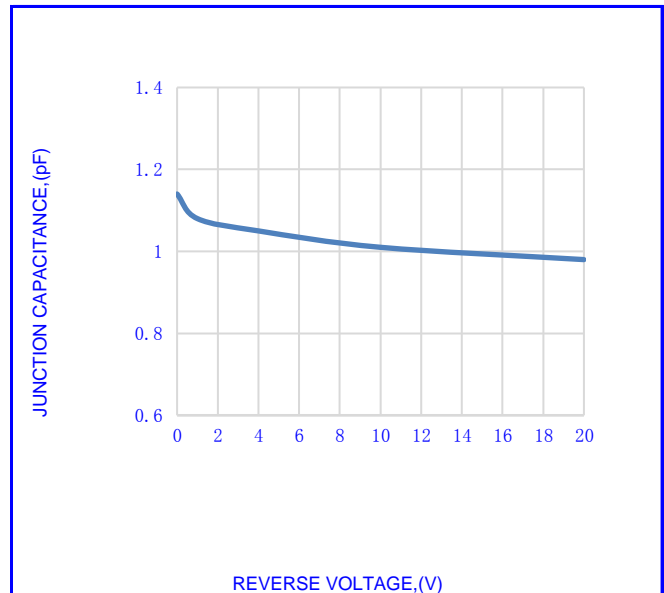


Fig.4- TYPICAL JUNCTION CAPACITANCE

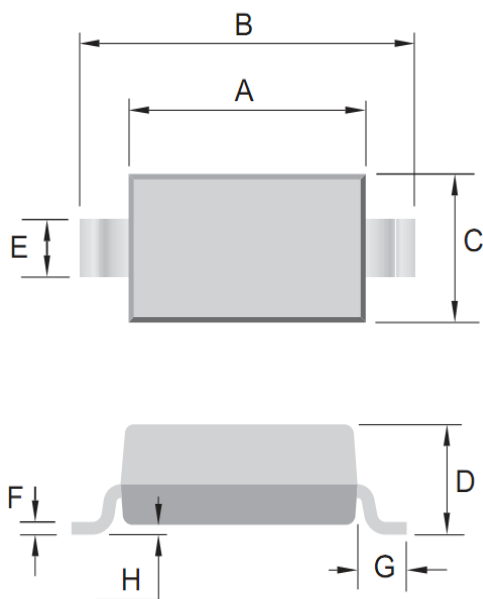
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OUTLINE DRAWINGS

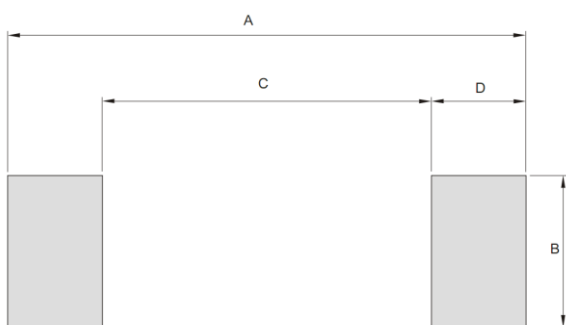
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OUTLINE DIMENSIONS						
Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.500	-	2.800	0.098	-	0.110
B	3.600	-	3.900	0.142	-	0.154
C	1.400	-	1.800	0.055	-	0.071
D	0.950	-	1.350	0.037	-	0.053
E	0.500	-	0.700	0.020	-	0.028
F	-	-	0.200	-	-	0.008
G	0.400	-	-	0.016	-	-
H	-	-	0.120	-	-	0.005

RECOMMENDED LAYOUT DRAWINGS

SOD-123



RECOMMENDED MOUNTING PAD DIMENSIONS						
Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	--	4.250	--	--	0.167	--
B	--	1.220	--	--	0.048	--
C	--	2.700	--	--	0.106	--
D	--	0.780	--	--	0.031	--

PACKING INFORMATION

SOD-123

Package Method	Reel Size (mm)	Quantity (pcs/reel)	Inner Box Size LxWxH(mm)	Quantity (pcs/Inner Box)	Carton Size LxWxH(mm)	Quantity (pcs/carton)
Tape Reel	Φ180	3000	210x210x203	45000	455x455x240	180000

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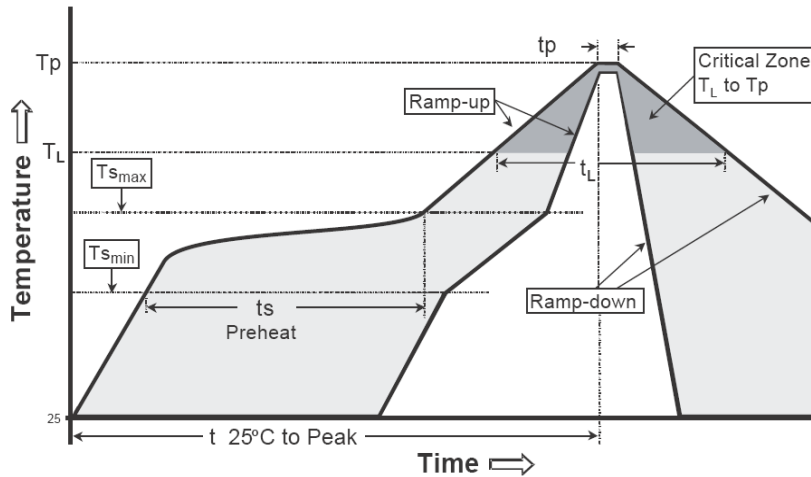
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Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (T _{Smax} to T _p)	3°C/second max.	3°C/second max.
Preheat -Temperature Min(T _{S min}) -Temperature Max(T _{S max}) -Time(t _{s min} to t _{s max})	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (T _L) - Time (t _L)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(T _p)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

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