

1N4148WS

HIGH SPEED SWITCHING RECTIFIERS



**VOLTAGE:** 75 Volts

**POWER:** 200 mW

SOD-323

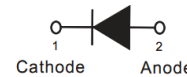
Marking and Polarity

**FEATURES**

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

**MECHANICAL DATA**

- **Package:** SOD-323
- **Epoxy UL:** 94V-0
- **Mounting position:** Any
- **Weight:** App. 0.0041 grams (0.0001 ounce)



Remark:

- ①. T4=Module 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)	$P_D$	200	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"(2.54 x 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	$I_F = 5mA$	$V_F$	-	0.62	0.72	V
	$I_F = 10mA$		-	-	1.0	
	$I_F = 100mA$		-	-	1.0	
Reverse current	$V_R=20V$	$I_R$	-	-	25	nA
	$V_R=75V$		-	-	5	$\mu A$
Capacitance	$V_R = 0V, f = 1MHz$	$C_T$	-	-	4	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

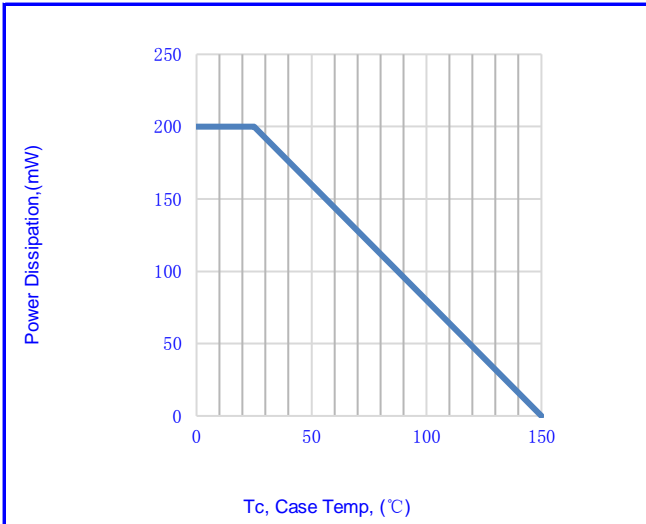


Fig.1-POWER DISSIPATION VS. AMBIENT TEMP.

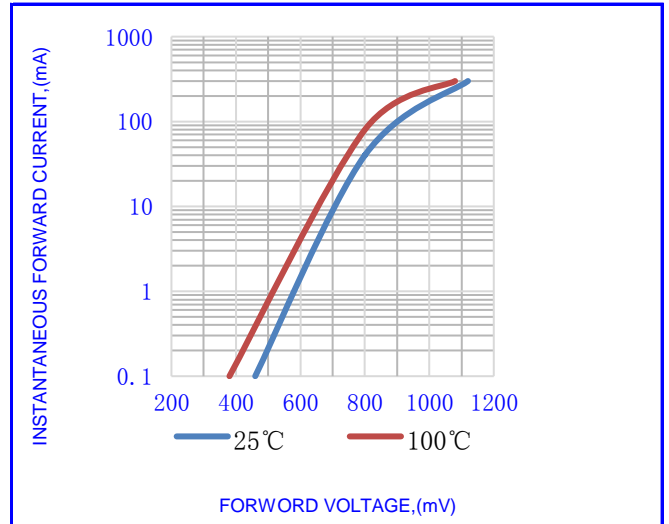


Fig.2- Forward characteristics

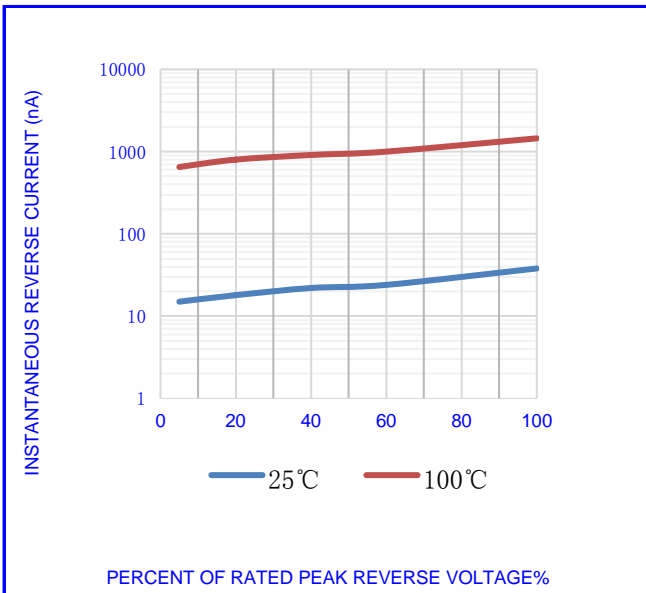


Fig.3- TYPICAL REVERSE CHARACTERISTICS

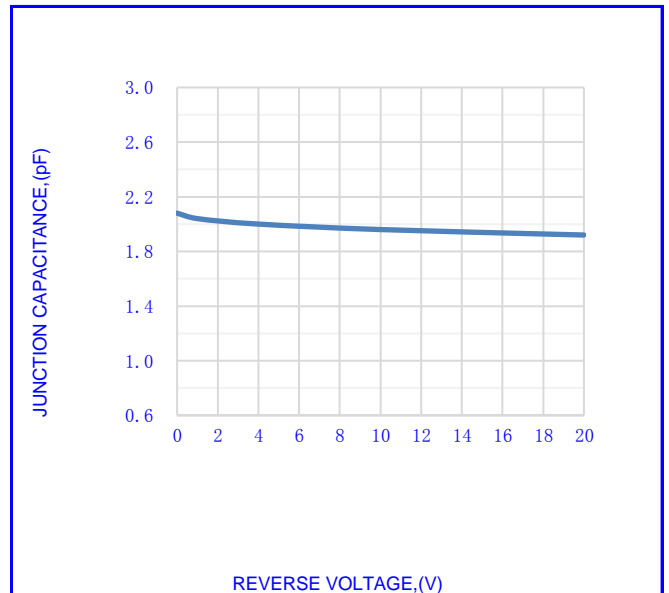


Fig.4- TYPICAL JUNCTION CAPACITANCE

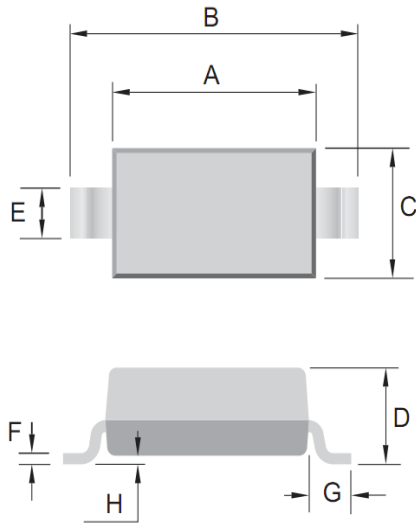
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**OUTLINE DRAWINGS**

**SOD-323**

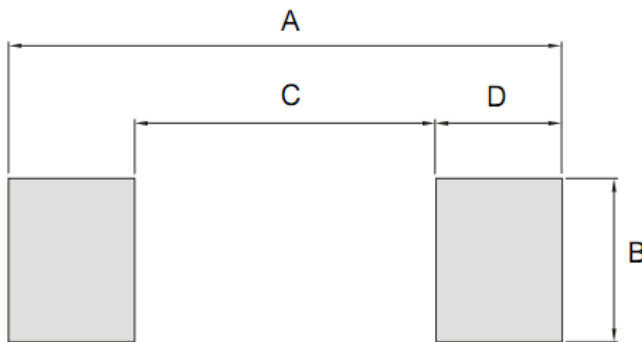


**OUTLINE DIMENSIONS**

Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.600	-	1.800	0.063	-	0.071
B	2.400	-	2.700	0.094	-	0.106
C	1.200	-	1.400	0.047	-	0.055
D	-	-	1.000	-	-	0.039
E	0.250	-	0.350	0.010	-	0.014
F	0.080	-	0.150	0.003	-	0.006
G	-	0.475	-	-	0.019	-
H	-	-	0.120	-	-	0.005

**RECOMMENDED LAYOUT DRAWINGS**

**SOD-323**



**RECOMMENDED MOUNTING PAD DIMENSIONS**

Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	--	2.900	--	--	0.114	--
B	--	0.500	--	--	0.020	--
C	--	1.440	--	--	0.057	--
D	--	0.730	--	--	0.029	--

**PACKING INFORMATION**

**SOD-323**

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	185x185x90	21000	400x400x300	252000

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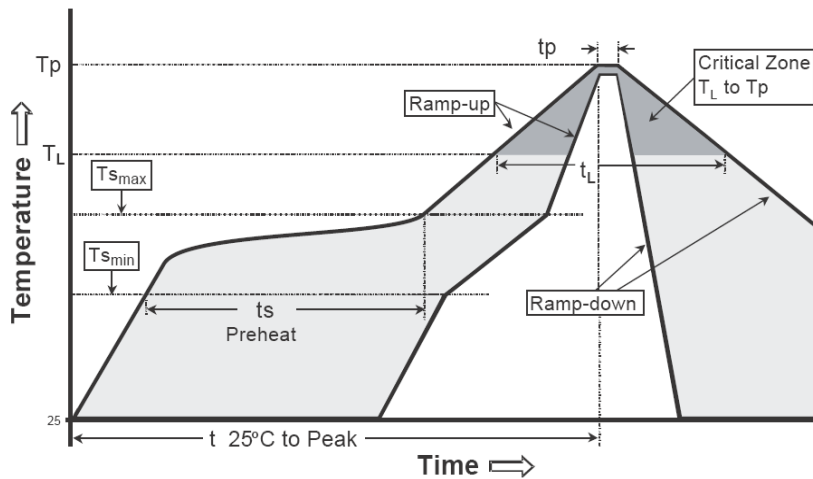
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**Recommended wave soldering condition**

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 <sub>smax</sub> to T <sub>p</sub> )	3°C/second max.	3°C/second max.
Preheat -Temperature Min(T <sub>S min</sub> ) -Temperature Max(T <sub>S max</sub> ) -Time(t <sub>s min</sub> to t <sub>s max</sub> )	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (T <sub>L</sub> ) - Time (t <sub>L</sub> )	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(T <sub>P</sub> )	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(t <sub>p</sub> )	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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