

1N4148WS

HIGH SPEED SWITCHING RECTIFIERS



VOLTAGE:	75	Volts	POWER:	200	mW
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SOD-323	Marking and Polarity
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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	μA
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

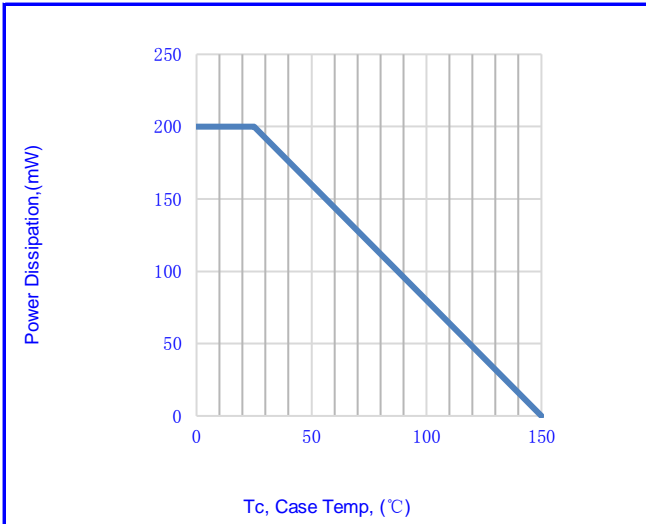


Fig.1-POWER DISSIPATION VS. AMBIENT TEMP.

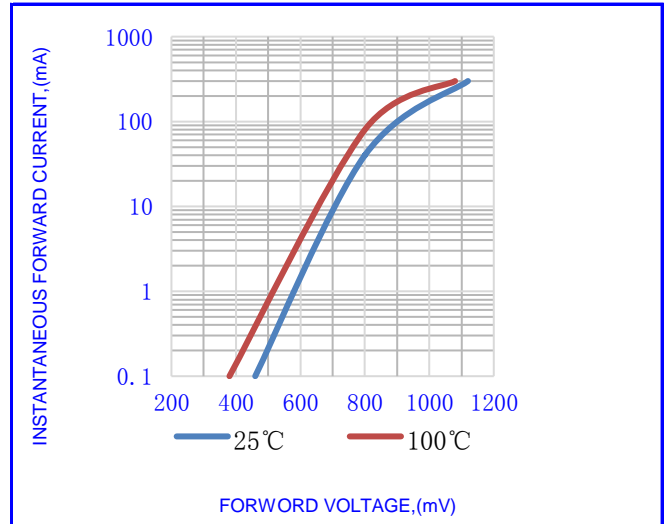


Fig.2- Forward characteristics

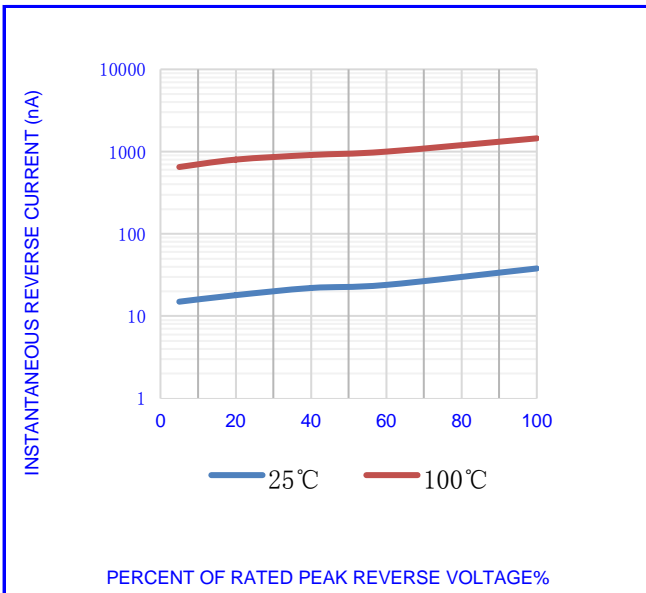


Fig.3- TYPICAL REVERSE CHARACTERISTICS

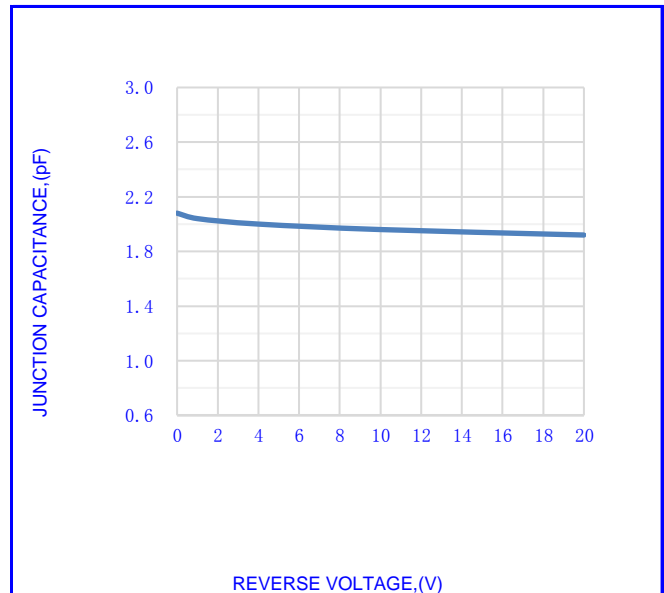


Fig.4- TYPICAL JUNCTION CAPACITANCE

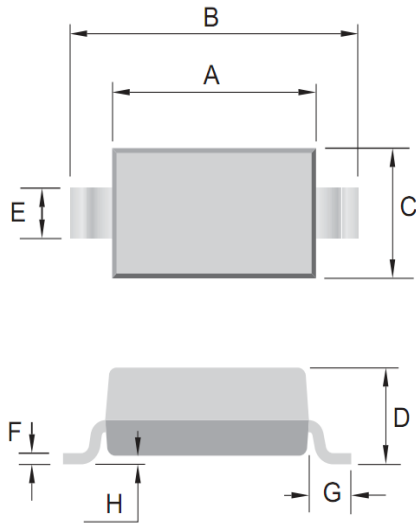
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OUTLINE DRAWINGS

SOD-323

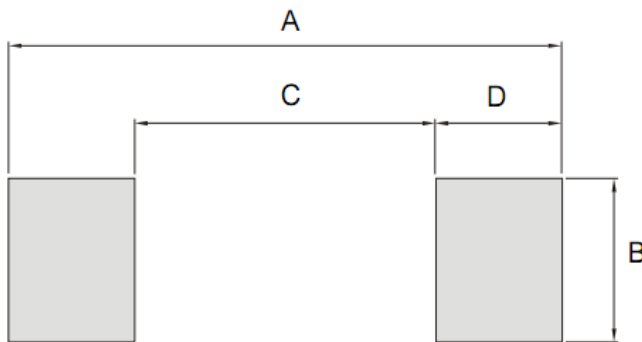


OUTLINE DIMENSIONS

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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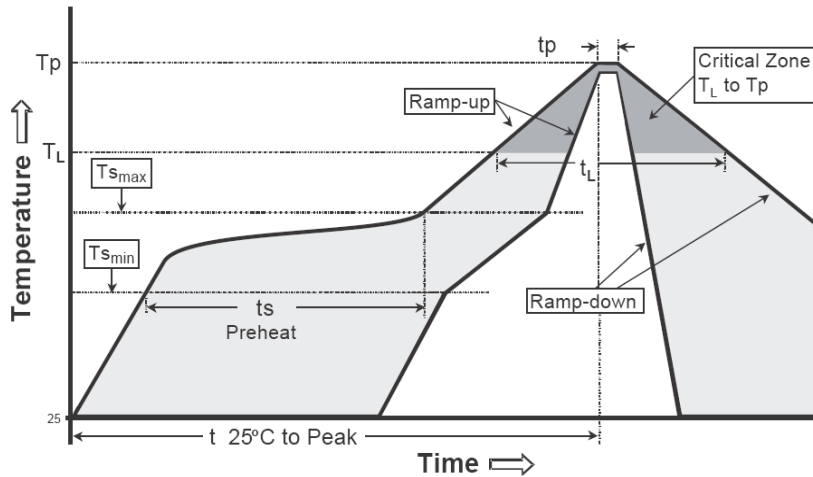
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Recommended wave soldering condition

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 (Tsmax to Tp)	3°C/second max.	3°C/second max.
Preheat -Temperature Min(TS min) -Temperature Max(TS max) -Time(ts min to ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (TL) - Time (tL)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(TP)	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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