1N4148WS

0.3 AMP SURFACE MOUNT SILICON RECTIFIERS

VOLTAGE RANGE
100.0 Volts
CURRENT
0.3 Ampere

FEATURES

- For surface mounted applications
- Glass Passivated Chip Junction
- Fast reverse recovery time
- Ideal for automated placement
- Lead free in comply with EU RoHS 2011/65/EU directives

MECHANICAL DATA

- Case: SOD-323
- Terminals: Solderable per MIL-STD-750, Method 2026

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25°C ambient temperature uniess otherwies specified.
Single phase half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Parameter	Symbols	1N4148WS	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	100	V
Maximum RMS Voltage	V_{RMS}	75	V
Average Rectified Forward Current	$I_{F(AV)}$	300	mA
Non-Repetitive Peak Forward Surge Current at 1s at 1ms at 1us	I_{FSM}	0.5 1 4	A
Total Power Dissipation	P_{tot}	400	mW
Typical Thermal Resistance (1)	$R_{\theta JA}$ $R_{\theta JC}$	340 120	°C/W
Operating and Storage Temperature Range	T_j, T_{stg}	-55 ~ +150	°C

Characteristics at Ta= 25 °C

Parameter	Symbols	1N4148WS	Unit
Reverse Breakdown Voltage at IR=1μA	$V_{(BR)R}$	100	V
Maximum Forward Voltage at 1 m A at 10 m A at 50 m A at 150 m A	V_F	0.715 0.855 1.00 1.25	V
Peak Reverse Current at VR=20V Tj=25°C at VR=75V Tj=25°C at VR=25V Tj=150°C at VR=75V Tj=150°C	I_R	0.025 1 30 50	μA
Typical Junction Capacitance f=1MHz,VR=0V	C_j	2	pF
Maximum Reverse Recovery Time (2)	t_{rr}	15	ns

(2) Measured with $I_F=I_R=10mA, I_{rr}=0.1xI_R, R_L=100\Omega$

RATING AND CHARACTERISTIC CURVES

Fig.1 Power Derating Curve

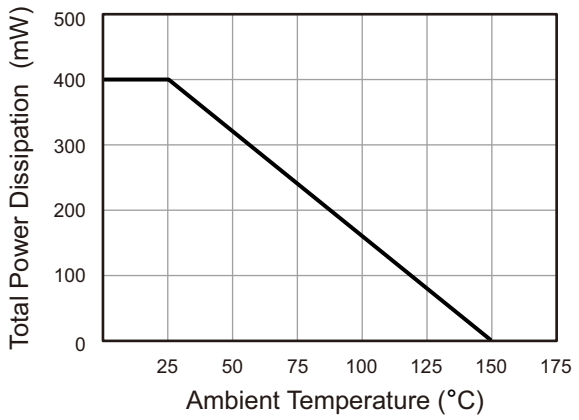


Fig.2 Typical Reverse Characteristics

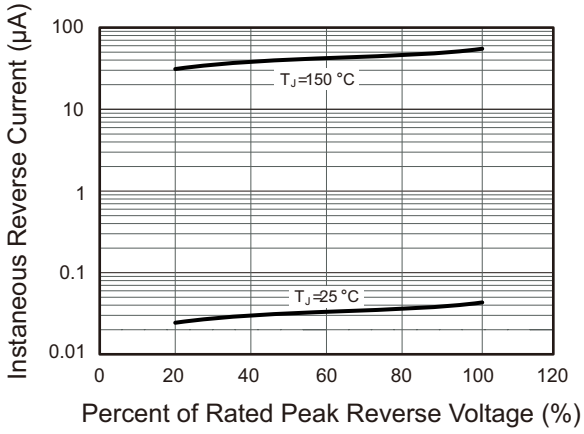


Fig.3 Typical Instaneous Forward Characteristics

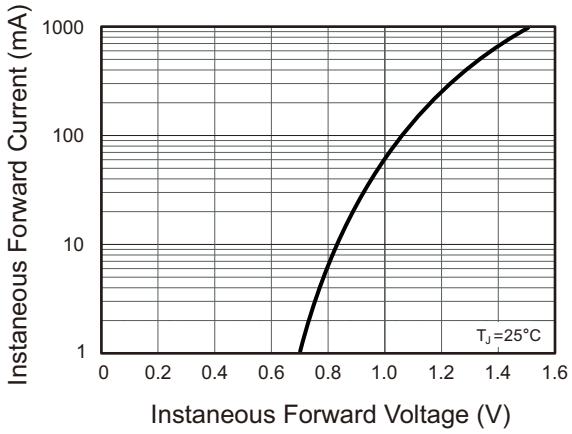
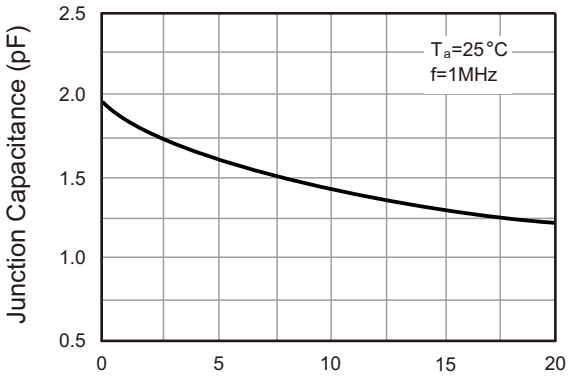


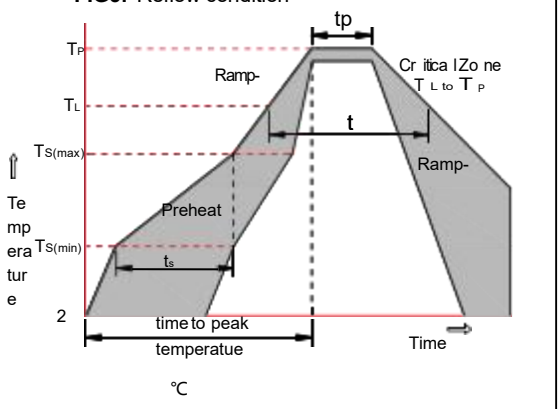
Fig.4 Typical Junction Capacitance



Soldering parameters

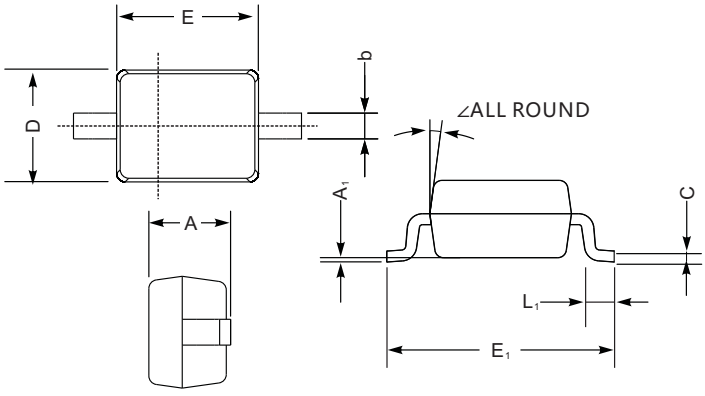
Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃ of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃

FIG5: Reflow condition



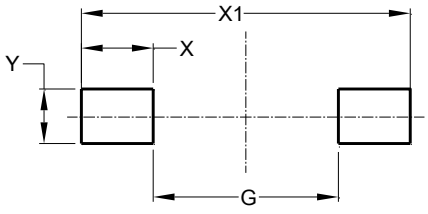
Package Dimensions & Suggested Pad Layout

SOD323



SOD-323 mechanical data

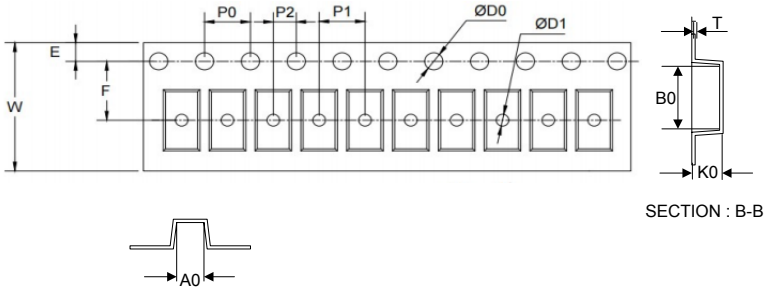
UNIT		A	C	D	E	E_1	b	L_1	A_1	∠
mm	max	1.1	0.15	1.4	1.8	2.75	0.4	0.45	0.2	9°
	min	0.8	0.08	1.2	1.4	2.55	0.25	0.2	—	
mil	max	43	5.9	55	70	108	16	16	8	
	min	32	3.1	47	63	100	9.8	7.9	—	



Dimensions	Value (in mm)
G	1.40
X	1.20
X1	3.80
Y	1.00

Tape & rell specification

Tape

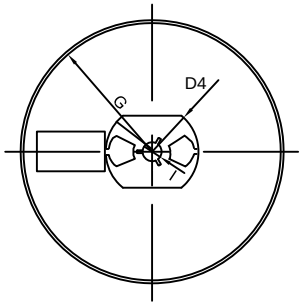


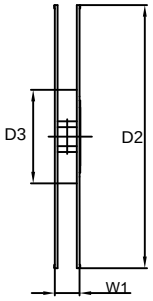
SECTION : B-B

SECTION : A-A

Symbol	Dimension (mm)
P0	4.00±0.20
P1	4.00±0.20
P2	2.00±0.20
D0	1.55±0.20
D1	1.00±0.20
E	1.55±0.25
F	3.60±0.20
W	8.00±0.20
A0	2.00±0.20
B0	3.25±0.20
K0	1.35±0.20
T	0.23±0.10

7” Reel





D2	177.0±5.0
D3	55Min.
D4	R24.6±2.0
G	R82.0±2.0
I	13.0±2.0
W1	10.20±3.0

Quantity: 3000PCS