1N4148WL

Switching Diodes

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-123FL
- Polarity: Color band denotes cathode end
- Approx. Weight: 0.015g

Ordering Information

Part Number	Marking	Shipping	Reel
1N4148WL-TR3	W1	3000PCS Tape&Reel	7 inchs
1N4148WL-TR12	W1	12000PCS Tape&Reel	13 inchs

Absolute Maximum Ratings at 25°C

Parameter	Symbol	1N4148WL	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	100	V
Maximum RMS voltage	V_{RMS}	75	V
Continuous Forward Current	I_F	300	mA
Non-reptitive Peak Forward Surge Current at 1ms	I_{FSM}	4	A
Total Power Dissipation	P_{tot}	400	mW
Typical Thermal Resistance (Note1)	$R_{\theta JA}$	450	°C/W
Operating and Storage Temperature Range	T_j, T_{stg}	-55 ~ +150	°C

Note: (1) PCB mounted with 2.0" X 2.0" (5cm X 5cm) copper pad areas.

Characteristics at T_a= 25°C

Parameter		Symbol	1N4148WL	Unit
Reverse BreakdownVoltage at I_R=1μA		$V_{(BR)R}$	75	V
Maximum Forward Voltage	at 1mA at 10mA at 50mA at 150mA at 300mA	V_F	0.715 0.855 1.00 1.25 1.5	V
Peak Reverse Current	at V_R=20V T_j=25°C at V_R=75V T_j=25°C at V_R=25V T_j=150°C at V_R=75V T_j=150°C	I_R	0.025 1 30 50	μA
Typical Junction Capacitance	f=1MHz,V_R=4V	C_j	5	pF
Maximum Reverse Recovery Time		t_{rr} Typical	8	ns

Characteristics Curve

Fig.1 Power Derating Curve

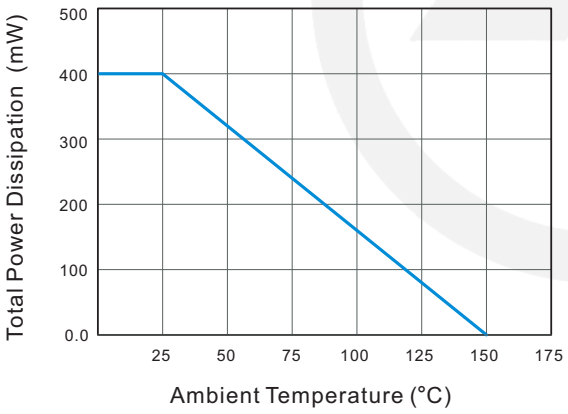


Fig.2 Typical Reverse Characteristics

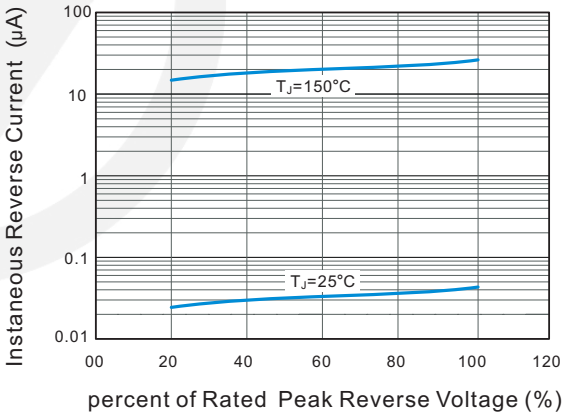


Fig.3 Typical Instaneous Forward Characteristics

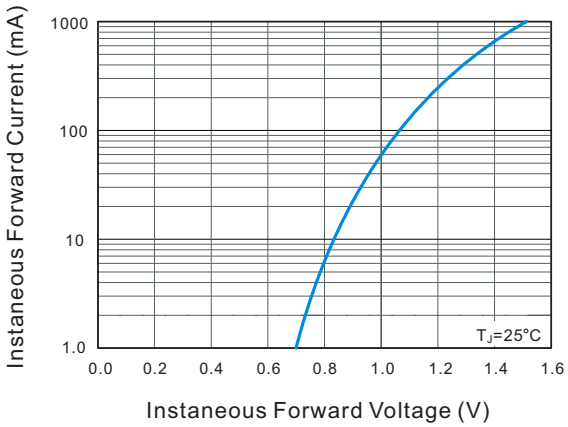
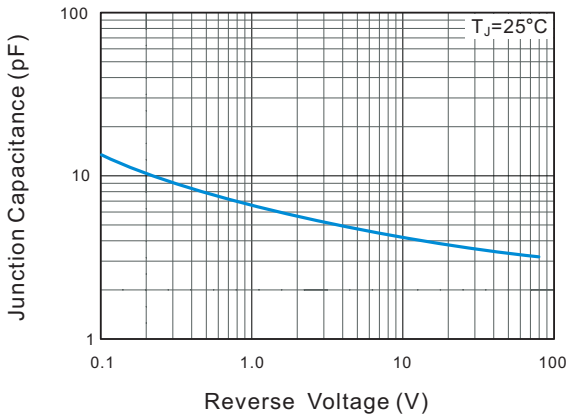
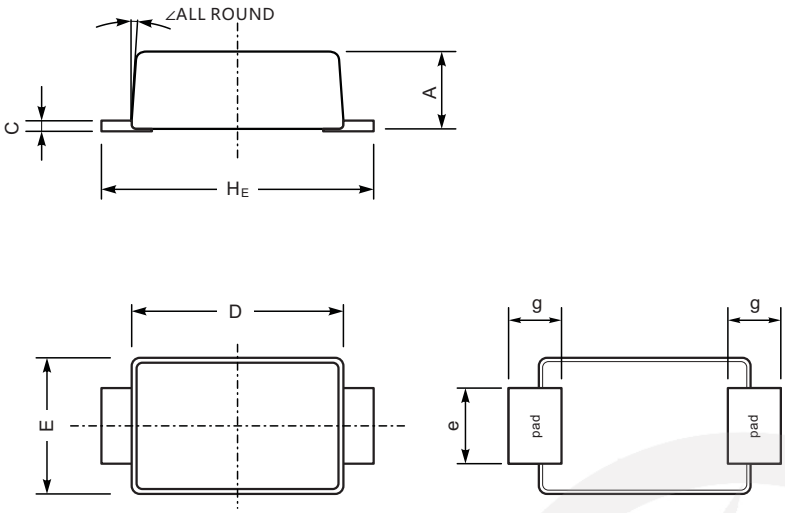


Fig.4 Typical Junction Capacitance



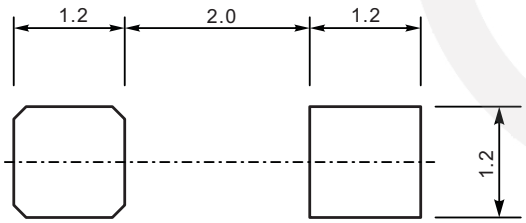
SOD-123FL Package Outline

Unit: mm



SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.9	1.35
C	0.12	0.20
D	2.6	2.9
E	1.75	1.95
e	0.8	1.1
g	0.7	0.9
H_E	3.5	3.8
∠	7°	

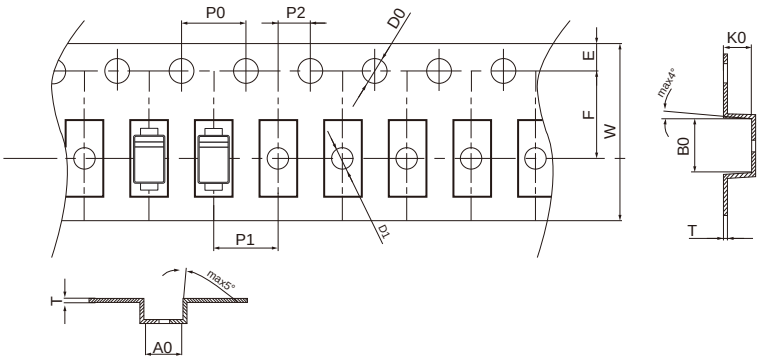
SOD-123FL Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm
3.The pad layout is for reference purpose only.

Carrier Tape Dimensions

Unit：mm

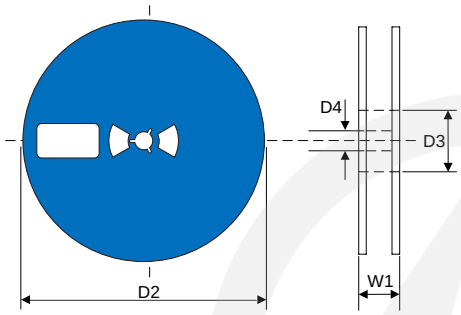


Symbol	Spec	Symbol	Spec
A0	2.05±0.10	T	0.20±0.05
B0	3.90±0.10	E	1.75±0.10
K0	1.28±0.05	F	3.50±0.10
P0	4.00±0.10	D0	1.55±0.05
P1	4.00±0.10	D1	1.00±0.10
P2	2.00±0.05	W	$8.00^{+0.30}_{-0.10}$

Reel Dimensions

Unit：mm

7” Reel

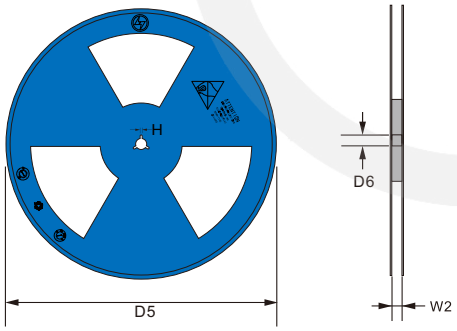


D2	Φ178.0±2.0
D3	Φ50.0
D4	13.0±0.5
W1	12±0.5
Quantity: 3000PCS	

Reel Dimensions

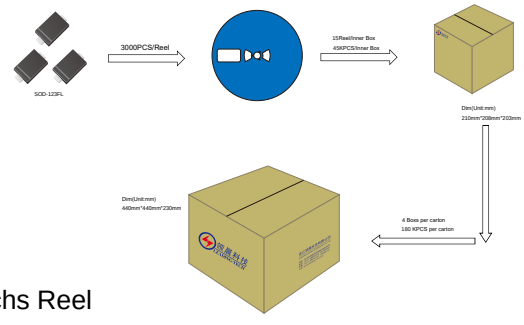
Unit：mm

13” Reel

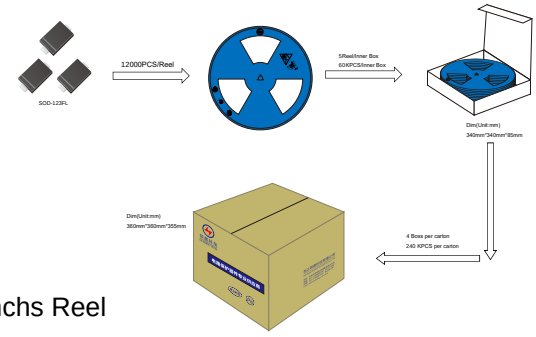


D5	Φ330.0±2.0
D6	Φ13.5±0.5
H	2.5±1.0
W2	12±2.0
Quantity: 12000PCS	

Packaging



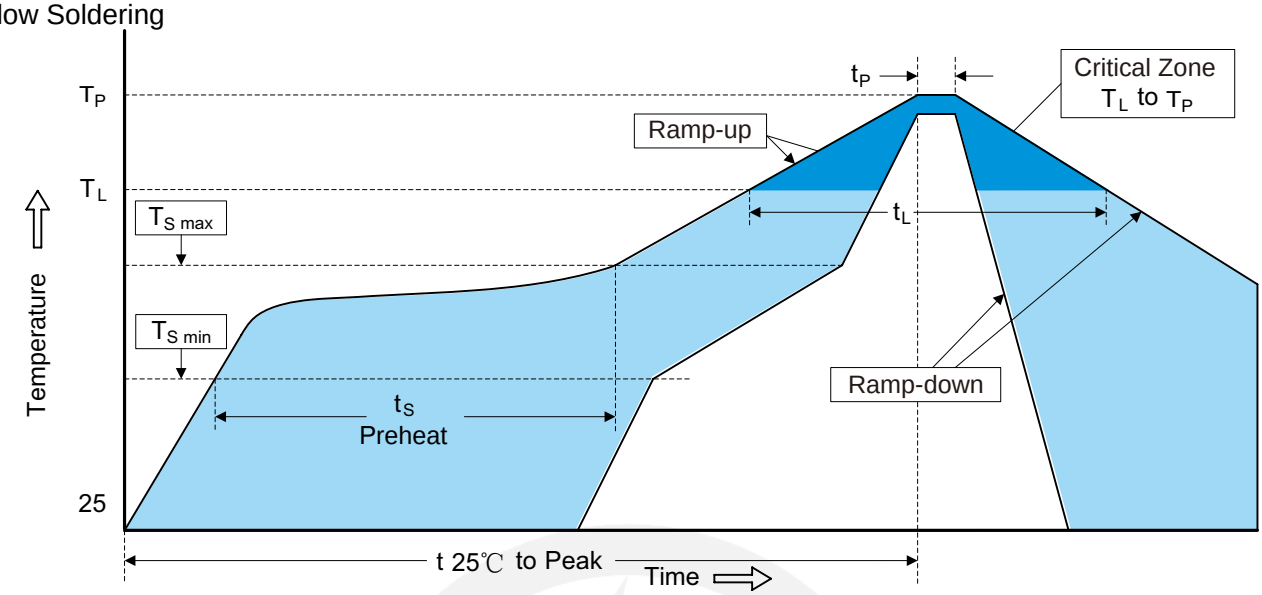
7 inchs Reel



13 inchs Reel

Recommended Soldering Conditions

Reflow Soldering



Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3℃/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (t_S)	 150℃ 200℃ 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	 3℃/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	 217℃ 60-150 seconds
Peak Temperature (T_P)	260℃
Time within 5℃ of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6℃/second max.
Time 25℃ to Peak Temperature	8 minutes max.

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Version Update Information

Series NO.	Enactment/Revision Date	Effective Date	Version	Revision Content	Revision Reason	Revision Person	Note
01	2024.04.19	2024.04.19	3.0	New file	/	Ding	