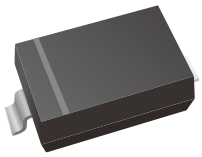
领晨科技
LEADING-TECH

LT1Z2V0W THRU LT1Z75W

Silicon Planar Zener Diodes

Features



- Total power dissipation: Max. 500mW
- Wide zener reverse voltage range 2.0V to 75V
- Small plastic package suitable for surface mounted design
- Tolerance approximately±5%
- Lead free in comply with EU RoHS 2011/65/EU directives

Mechanical Data

- Case: SOD-123
- Terminals: Solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end

Ordering Information

Part Number	Shipping	Reel
LT1Z2V0W THRU LT1Z75W-TR3	3000PCS Tape&Reel	7 inchs
LT1Z2V0W THRU LT1Z75W-TR12	12000PCS Tape&Reel	13 inchs

Absolute Maximum Ratings and Characteristics (Ta = 25 °C)

Parameter	Symbol	Value	Unit
Power Dissipation	P_{tot}	500	mW
Forward Voltage at I_F = 10 mA	V_F	0.9	V
Typical thermal resistance juncting to ambient (Note1)	$R_{\theta JA}$	340	°C/W
Operating and Storage Temperature Range	T_j , T_{stg}	-55 ~ +150	°C

Note:(1) Thermal resistance from junction to ambient at P.C.B. mounted with 2.0" X 2.0" (5 cm X 5 cm) copper areas pads.

Characteristics at (Ta = 25 °C)

Type	Marking	Zener Voltage Range (1)				Dynamic Impedance	Reverse Current	
		V_{ZT} (at I_{ZT})			I_{ZT}	Z_{ZT} (at I_{ZT})	I_R	at V_R
		Min (V)	Nom (V)	Max (V)	(mA)	Max (Ω)	Max (μA)	(V)
LT1Z2V0W	4A	1.8	2.0	2.15	5	100	120	0.5
LT1Z2V2W	4B	2.08	2.2	2.33	5	100	120	0.7
LT1Z2V4W	4C	2.28	2.4	2.56	5	100	120	1
LT1Z2V7W	4D	2.5	2.7	2.9	5	110	120	1
LT1Z3V0W	4E	2.8	3.0	3.2	5	120	50	1
LT1Z3V3W	4F	3.1	3.3	3.5	5	130	20	1
LT1Z3V6W	4H	3.4	3.6	3.8	5	130	10	1
LT1Z3V9W	4J	3.7	3.9	4.1	5	130	5	1
LT1Z4V3W	4K	4.0	4.3	4.6	5	130	5	1
LT1Z4V7W	4M	4.4	4.7	5.0	5	130	2	1
LT1Z5V1W	4N	4.8	5.1	5.4	5	130	2	1.5
LT1Z5V6W	4P	5.2	5.6	6.0	5	80	1	2.5
LT1Z6V2W	4R	5.8	6.2	6.6	5	50	1	3.0
LT1Z6V8W	4X	6.4	6.8	7.2	5	30	0.5	3.5
LT1Z7V5W	4Y	7.0	7.5	7.9	5	30	0.5	4
LT1Z8V2W	4Z	7.7	8.2	8.7	5	30	0.5	5
LT1Z9V1W	5A	8.5	9.1	9.6	5	30	0.5	6
LT1Z10W	5B	9.4	10	10.6	5	30	0.1	7
LT1Z11W	5C	10.4	11	11.6	5	30	0.1	8
LT1Z12W	5D	11.4	12	12.7	5	35	0.1	9
LT1Z13W	5E	12.4	13	14.1	5	35	0.1	10
LT1Z15W	5F	13.8	15	15.6	5	40	0.1	11
LT1Z16W	5H	15.3	16	17.1	5	40	0.1	12
LT1Z18W	5J	16.8	18	19.1	5	45	0.1	13
LT1Z20W	5K	18.8	20	21.2	5	50	0.1	15
LT1Z22W	5M	20.8	22	23.3	5	55	0.1	17
LT1Z24W	5N	22.8	24	25.6	5	60	0.1	19
LT1Z27W	5P	25.1	27	28.9	2	70	0.1	21
LT1Z30W	5R	28	30	32	2	80	0.1	23
LT1Z33W	5X	31	33	35	2	80	0.1	25
LT1Z36W	5Y	34	36	38	2	90	0.1	27
LT1Z39W	5Z	37	39	41	2	100	2	30
LT1Z43W	6A	40	43	46	2	130	2	33
LT1Z47W	6B	44	47	50	2	150	2	36
LT1Z51W	6C	48	51	54	2	180	1	39
LT1Z56W	6D	52	56	60	2	180	1	43
LT1Z62W	6E	58	62	66	2	200	0.2	47
LT1Z68W	6F	64	68	72	2	250	0.2	52
LT1Z75W	6H	70	75	79	2	300	0.2	57

(1) V_{ZT} is tested with pulses (20 ms)

Characteristics Curve

Fig.1 Maximum Continuous Power Derating

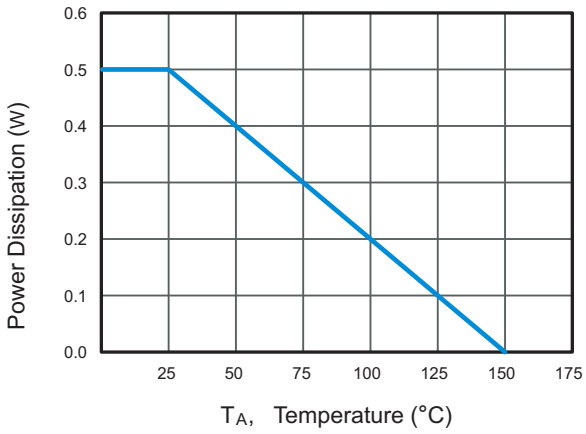


Fig.2 Typical Transsient Thermal Impedance

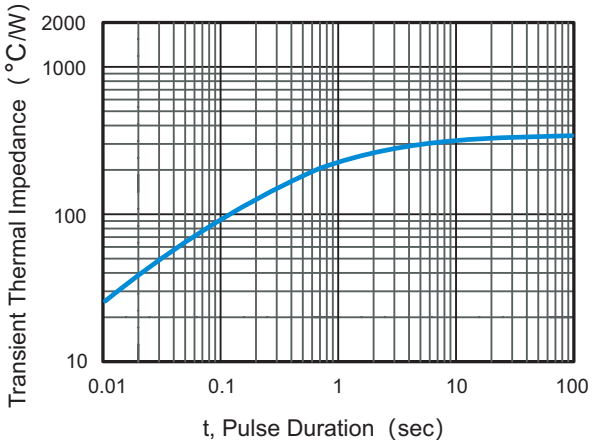


Fig.3 Zener voltage vs zener current

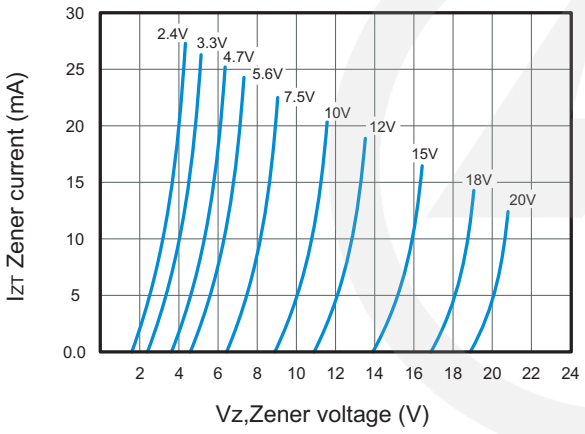


Fig.4 Zener voltage vs zener current

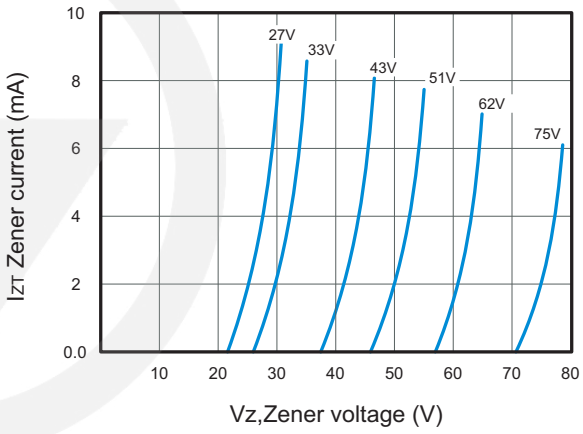
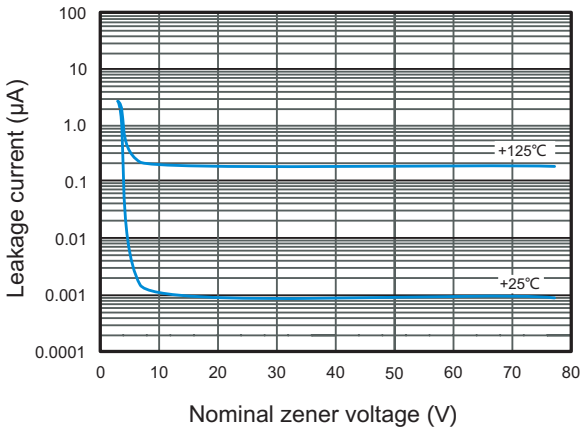
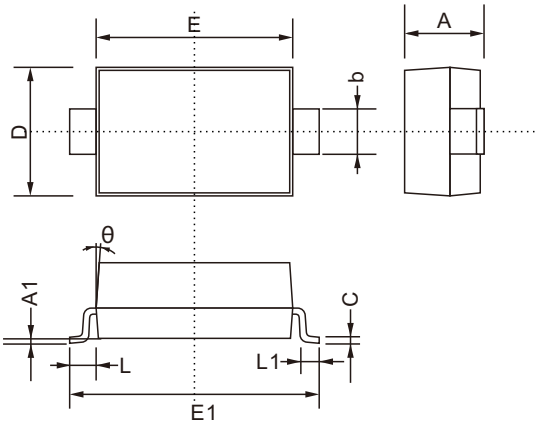


Fig.5 Typical leakage current



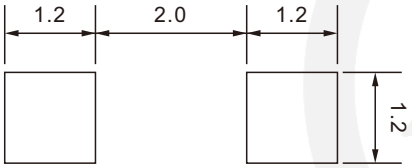
SOD-123 Package Outline



Unit : mm

SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.300
A1	0.000	0.200
b	0.450	0.750
C	0.080	0.230
D	1.500	1.800
E	2.500	2.800
E1	3.550	3.900
L1	0.250	0.450
L	0.5REF	
θ	8°	

SOD-123 Suggested Pad Layout



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

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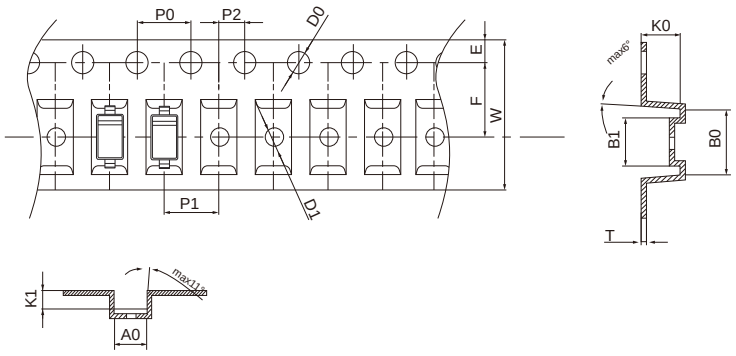
Carrier Tape Dimensions

Unit：mm

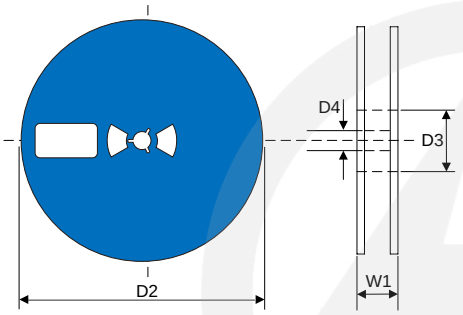


Symbol	Spec	Symbol	Spec
A0	1.75±0.10	P2	2.00±0.05
B0	3.94±0.10	D0	1.55±0.05
B1	2.59±0.10	D1	1.00±0.10
K0	1.47±0.10	T	0.20±0.05
K1	1.30±0.05	E	1.75±0.10
P0	4.00±0.10	F	3.50±0.05
P1	4.00±0.10	W	8.00 $^{+0.30}_{-0.10}$

Reel Dimensions

Unit：mm

7” Reel

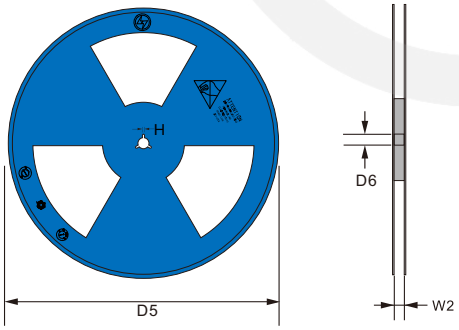


D2	Φ178.0±2.0
D3	Φ50
D4	13.0±0.5
W1	12±0.5
Quantity: 3000PCS	

Reel Dimensions

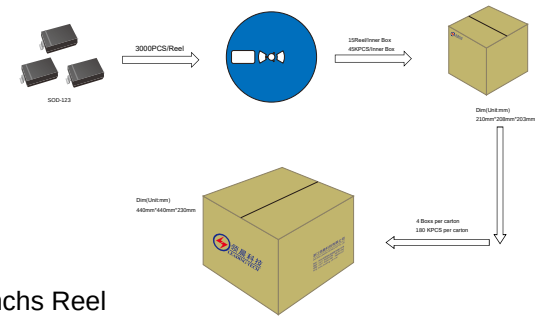
Unit：mm

13” Reel

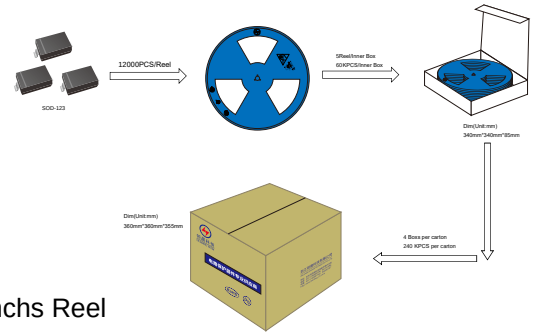


D5	Φ330.0±2.0
D6	Φ13.5±0.5
H	2.5±1.0
W2	12±2.0
Quantity: 12000PCS	

Packaging



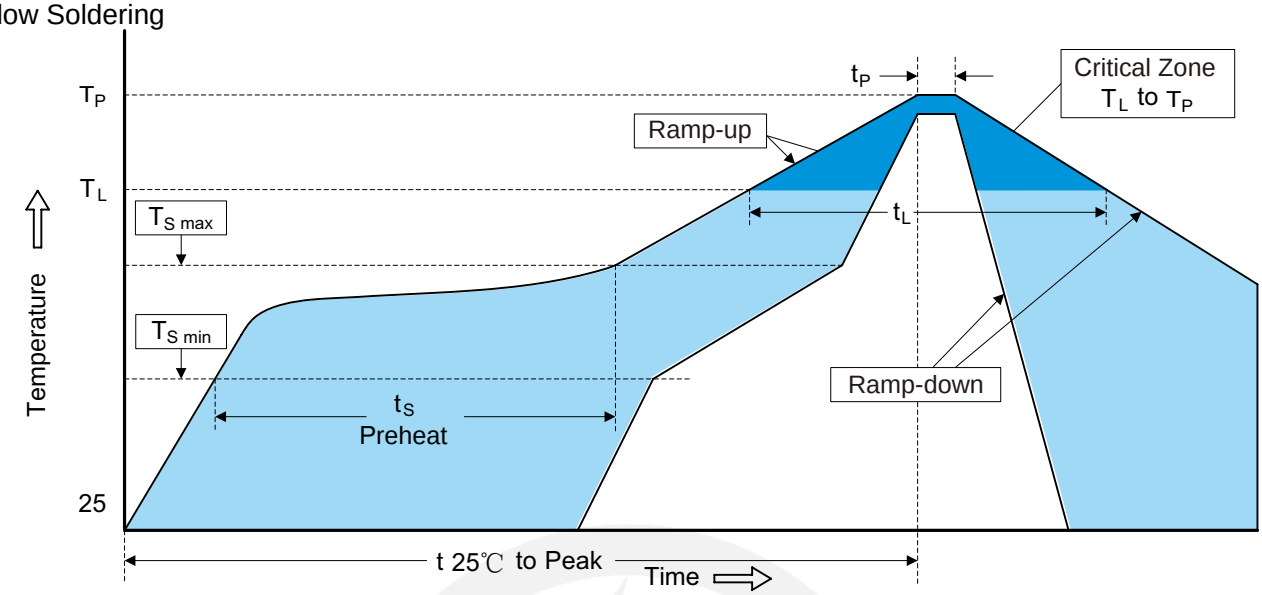
7 inchs Reel



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	2024.3.17	2024.3.17	3.0	New File	/	Ding	
02	2025.06.12	2025.06.12	3.1	Update packaging information	/	Ding	