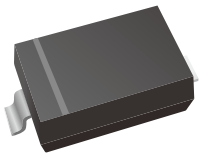
LT1Z2V0BW THRU LT1Z75BW

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±2%

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
LT1Z2V0BW THRU LT1Z75BW-TR3	3000PCS Tape&Reel	7 inchs
LT1Z2V0BW THRU LT1Z75BW-TR12	12000PCS Tape&Reel	13 inchs

Absolute Maximum Ratings and Characteristics at 25 ℃

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 (1)	$R_{\theta JA}$	340	°C/W
Operating and Storage Temperature Range	T_j, T_{stg}	-55 ~ +150	°C

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

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Electrical Characteristics Ta =25℃

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)
LT1Z2V0BW	A4	1.96	2	2.04	5	100	120	0.5
LT1Z2V2BW	B4	2.16	2.2	2.24	5	100	120	0.7
LT1Z2V4BW	C4	2.35	2.4	2.45	5	100	120	1
LT1Z2V7BW	D4	2.65	2.7	2.75	5	110	120	1
LT1Z3V0BW	E4	2.94	3	3.06	5	120	50	1
LT1Z3V3BW	F4	3.23	3.3	3.37	5	130	20	1
LT1Z3V6BW	H4	3.53	3.6	3.67	5	130	10	1
LT1Z3V9BW	J4	3.82	3.9	3.98	5	130	5	1
LT1Z4V3BW	K4	4.21	4.3	4.39	5	130	5	1
LT1Z4V7BW	M4	4.61	4.7	4.79	5	130	2	1
LT1Z5V1BW	N4	5	5.1	5.20	5	130	2	1.5
LT1Z5V6BW	P4	5.49	5.6	5.71	5	80	1	2.5
LT1Z6V2BW	R4	6.08	6.2	6.32	5	50	1	3
LT1Z6V8BW	X4	6.66	6.8	6.94	5	30	0.5	3.5
LT1Z7V5BW	Y4	7.35	7.5	7.65	5	30	0.5	4
LT1Z8V2BW	Z4	8.04	8.2	8.36	5	30	0.5	5
LT1Z9V1BW	A5	8.92	9.1	9.28	5	30	0.5	6
LT1Z10BW	B5	9.8	10	10.2	5	30	0.1	7
LT1Z11BW	C5	10.78	11	11.22	5	30	0.1	8
LT1Z12BW	D5	11.76	12	12.24	5	35	0.1	9
LT1Z13BW	E5	12.74	13	13.26	5	35	0.1	10
LT1Z15BW	F5	14.7	15	15.3	5	40	0.1	11
LT1Z16BW	H5	15.68	16	16.32	5	40	0.1	12
LT1Z18BW	J5	17.64	18	18.36	5	45	0.1	13
LT1Z20BW	K5	19.6	20	20.4	5	50	0.1	15
LT1Z22BW	M5	21.56	22	22.44	5	55	0.1	17
LT1Z24BW	N5	23.52	24	24.48	5	60	0.1	19
LT1Z27BW	P5	26.46	27	27.54	5	70	0.1	21
LT1Z30BW	R5	29.4	30	30.6	5	80	0.1	23
LT1Z33BW	X5	32.34	33	33.66	5	80	0.1	25
LT1Z36BW	Y5	35.28	36	36.72	5	90	0.1	27
LT1Z39BW	Z5	38.22	39	39.78	2.5	100	2	30
LT1Z43BW	A6	42.14	43	43.86	2.5	130	2	33
LT1Z47BW	B6	46.06	47	47.94	2.5	150	2	36
LT1Z51BW	C6	49.98	51	52.02	2.5	180	1	39
LT1Z56BW	D6	54.88	56	57.12	2.5	180	1	43
LT1Z62BW	E6	60.76	62	63.24	2.5	200	0.2	47
LT1Z68BW	F6	66.64	68	69.36	2.5	250	0.2	52
LT1Z75BW	H6	73.5	75	76.5	2.5	300	0.2	57

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

Typical Characteristics

Fig.1 Maximum Continuous Power Derating

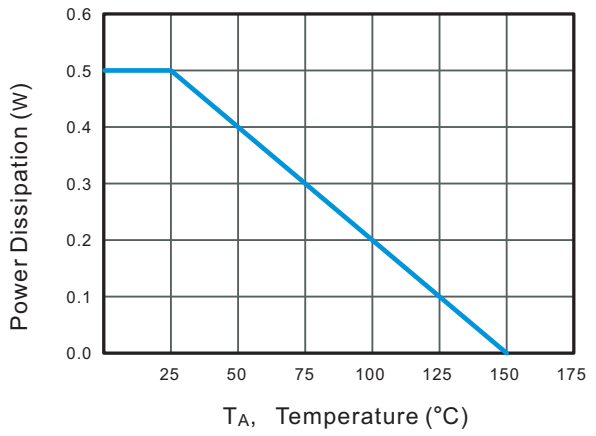


Fig.2 Typical Transient Thermal Impedance

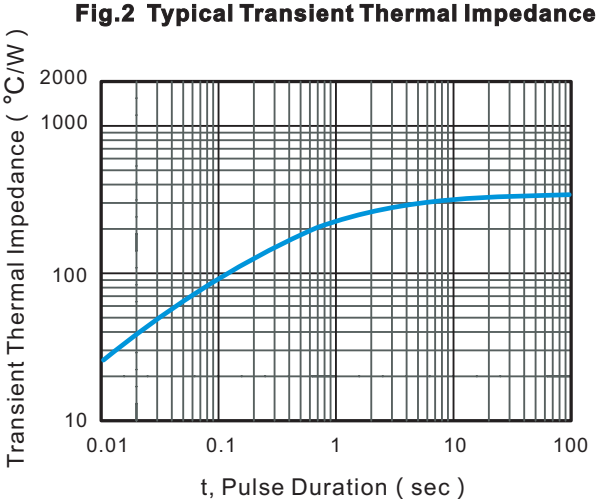


Fig.3 Zener voltage vs zener current

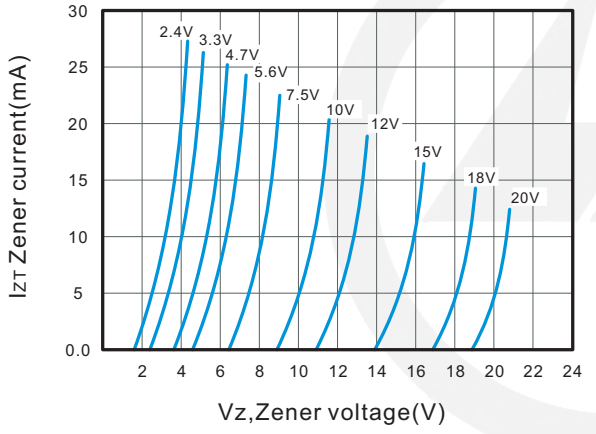


Fig.4 Zener voltage vs zener current

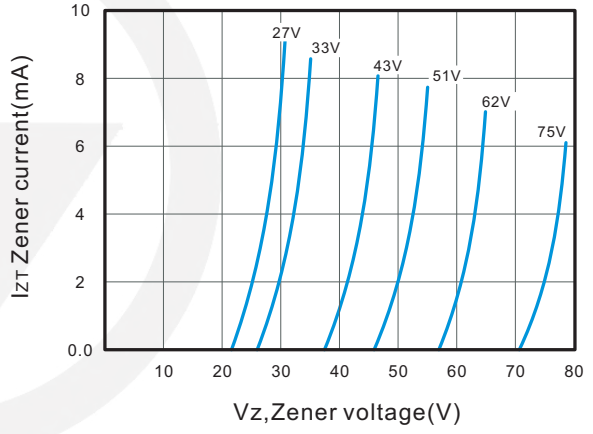
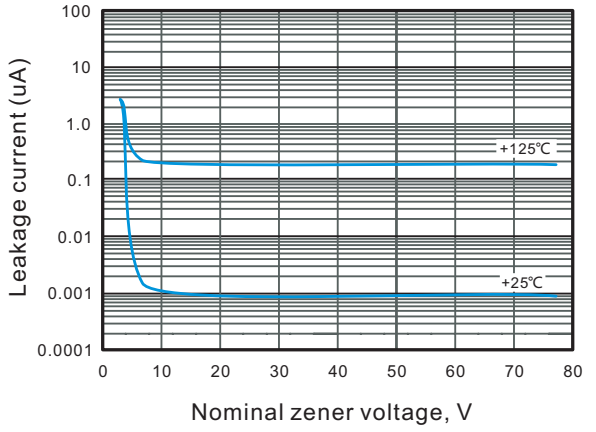
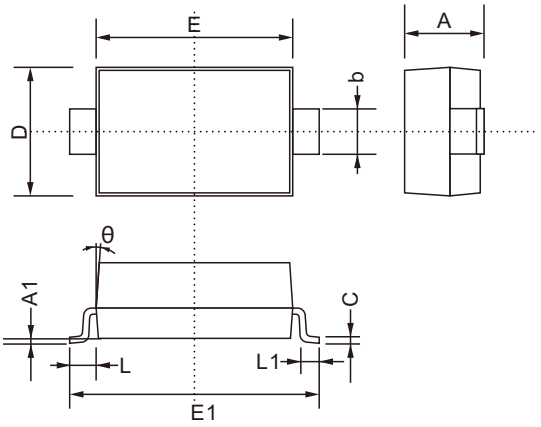


Fig.5 Typical leakage current



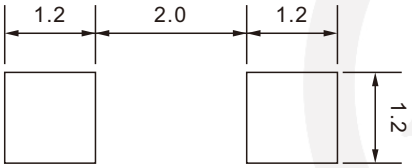
SOD-123 Package Outline



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

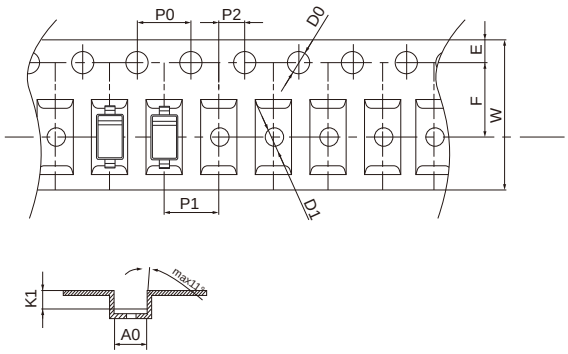


Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm
3.The pad layout is for reference purpose only.

LT1Z2V0BW THRU LT1Z75BW

Carrier Tape Dimensions

Unit：mm

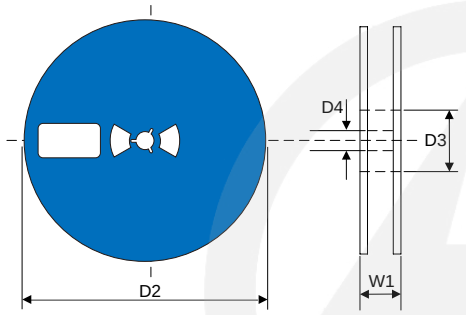


Symbol	Spec	Symbol	Spec
A0	1.75±0.10	P2	2.00±0.05
B0	3.94±0.10	D0	1.55±0.05
B1	2.59±0.10	D1	1.00±0.10
K0	1.47±0.10	T	0.20±0.05
K1	1.30±0.05	E	1.75±0.10
P0	4.00±0.10	F	3.50±0.05
P1	4.00±0.10	W	8.00 $^{+0.30}_{-0.10}$

Reel Dimensions

Unit：mm

7” Reel

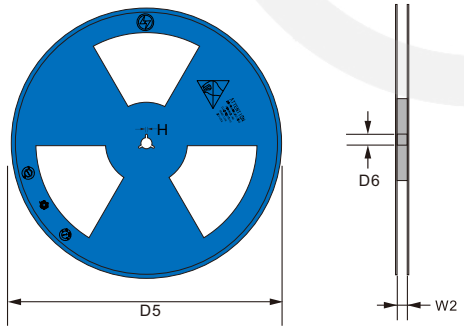


D2	Φ178.0±2.0
D3	Φ50
D4	13.0±0.5
W1	12±0.5
Quantity: 3000PCS	

Reel Dimensions

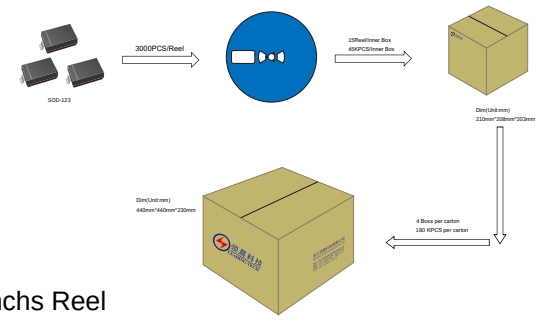
Unit：mm

13” Reel

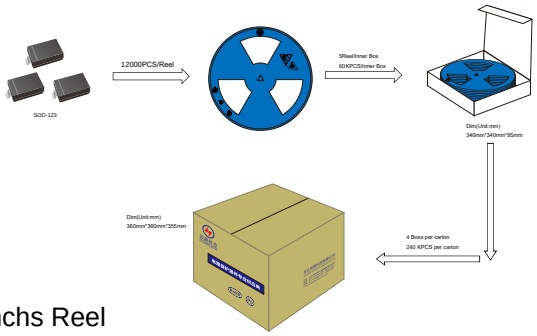


D5	Φ330.0±2.0
D6	Φ13.5±0.5
H	2.5±1.0
W2	12±2.0
Quantity: 12000PCS	

Packaging



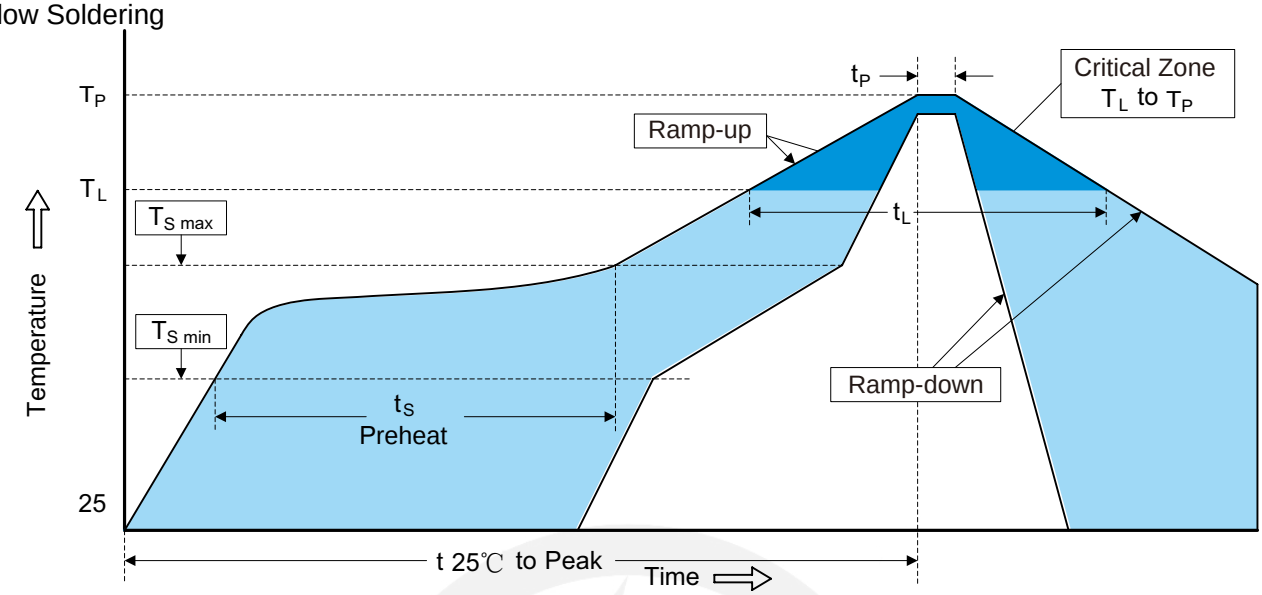
7 inchs Reel



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	2024.12.14	2024.12.14	3.0	New File	/	Ding	