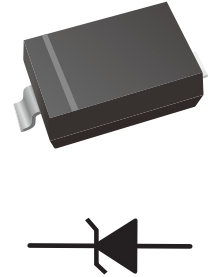


## Zener Diodes

### Features

- Total power dissipation: Max. 500mW
- Wide zener reverse voltage range 2.4V to 39V
- Small plastic package suitable for surface mounted design
- Tolerance approximately  $\pm 5\%$
- 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
LTSZ52xxB-TR3	3000PCS Tape&Reel	7 inches
LTSZ52xxB-TR12	12000PCS Tape&Reel	13 inches

### Maximum Ratings and Thermal Characteristics

( Ta=25 unless otherwise noted )

Parameters	Symbol	Value	Unit
Power Dissipation	Pd	500 (Note1)	mW
Forward Voltage @IF=10mA	Vf	0.9 (Note2)	V
Thermal Resistance, Junction-to-Ambient	R $\theta$ JA	340 (Note3)	$^{\circ}$ C/W
Thermal Resistance, Junction-to-Lead	R $\theta$ JL	150 (Note3)	$^{\circ}$ C/W
Storage temperature range	Ts	-55-+150	$^{\circ}$ C

Note:(1) Device mounted on ceramic PCB: 7.6mm x 9.4mm x 0.87mm with pad areas 25mm<sup>2</sup>.

(2) Short duration test pulse used to minimize self-heating effect.

(3) Thermal Resistance measurement obtained via infrared Scan Method.

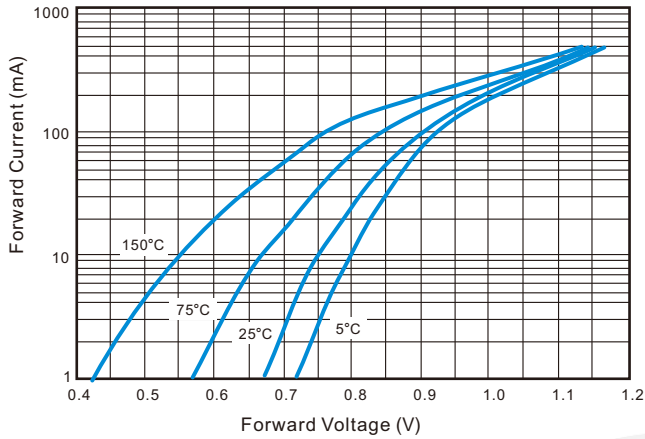


Electrical characteristics ( Ta=25 unless otherwise specified )

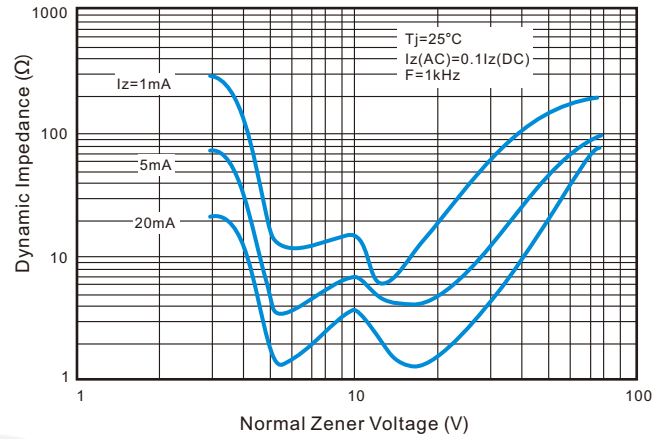
Type Number	Marking	Vz1(@Izt)				Zzt@Izt	Zzk		IR	
		Nom	Min	Max	Izt	Max	Max	Izk	Max	VR
		(V)	(V)	(V)	mA	Ω	Ω	mA	uA	V
LTSZ5221B	C1	2.4	2.28	2.52	20	30	1200	0.25	100	1
LTSZ5222B	C2	2.5	2.38	2.63	20	30	1250	0.25	100	1
LTSZ5223B	C3	2.7	2.57	2.84	20	30	1300	0.25	75	1
LTSZ5225B	C5	3.0	2.85	3.15	20	30	1600	0.25	50	1
LTSZ5226B	G1	3.3	3.14	3.47	20	28	1600	0.25	25	1
LTSZ5227B	G2	3.6	3.42	3.78	20	24	1700	0.25	15	1
LTSZ5228B	G3	3.9	3.71	4.1	20	23	1900	0.25	10	1
LTSZ5229B	G4	4.3	4.09	4.52	20	22	2000	0.25	5	1
LTSZ5230B	G5	4.7	4.47	4.94	20	19	1900	0.25	5	2
LTSZ5231B	E1	5.1	4.85	5.36	20	17	1600	0.25	5	2
LTSZ5232B	E2	5.6	5.32	5.88	20	11	1600	0.25	5	3
LTSZ5233B	E3	6.0	5.7	6.3	20	7	1600	0.25	5	3.5
LTSZ5234B	E4	6.2	5.89	6.51	20	7	1000	0.25	5	4
LTSZ5235B	E5	6.8	6.46	7.14	20	5	750	0.25	3	5
LTSZ5236B	F1	7.5	7.13	7.88	20	6	500	0.25	3	6
LTSZ5237B	F2	8.2	7.79	8.61	20	8	500	0.25	3	6.5
LTSZ5238B	F3	8.7	8.27	9.14	20	8	600	0.25	3	6.5
LTSZ5239B	F4	9.1	8.65	9.56	20	10	600	0.25	3	7
LTSZ5240B	F5	10.0	9.5	10.5	20	17	600	0.25	3	8
LTSZ5241B	H1	11.0	10.45	11.55	20	22	600	0.25	2	8.4
LTSZ5242B	H2	12.0	11.4	12.6	20	30	600	0.25	1	9.1
LTSZ5243B	H3	13.0	12.35	13.65	9.5	13	600	0.25	0.5	9.9
LTSZ5245B	H5	15.0	14.25	15.75	8.5	16	600	0.25	0.1	11
LTSZ5246B	J1	16.0	15.2	16.8	7.8	17	600	0.25	0.1	12
LTSZ5248B	J3	18.0	17.1	18.9	7	21	600	0.25	0.1	14
LTSZ5250B	J5	20.0	19	21	6.2	25	600	0.25	0.1	15
LTSZ5251B	K1	22.0	20.9	23.1	5.6	29	600	0.25	0.1	17
LTSZ5252B	K2	24.0	22.8	25.2	5.2	33	600	0.25	0.1	18
LTSZ5254B	K4	27.0	25.65	28.35	5	41	600	0.25	0.1	21
LTSZ5255B	K5	28.0	26.6	29.4	4.5	44	600	0.25	0.1	21
LTSZ5256B	M1	30.0	28.5	31.5	4.2	49	600	0.25	0.1	23
LTSZ5257B	M2	33.0	31.35	34.65	3.8	58	700	0.25	0.1	25
LTSZ5258B	M3	36.0	34.2	37.8	3.4	70	700	0.25	0.1	27
LTSZ5259B	M4	39.0	37.05	40.95	3.2	80	800	0.25	0.1	30

## Characteristics Curves

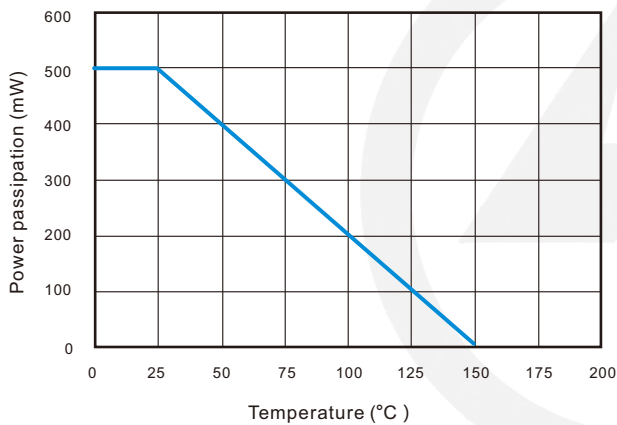
**FIG.1 TYPICAL FORWARD VOLTAGE**



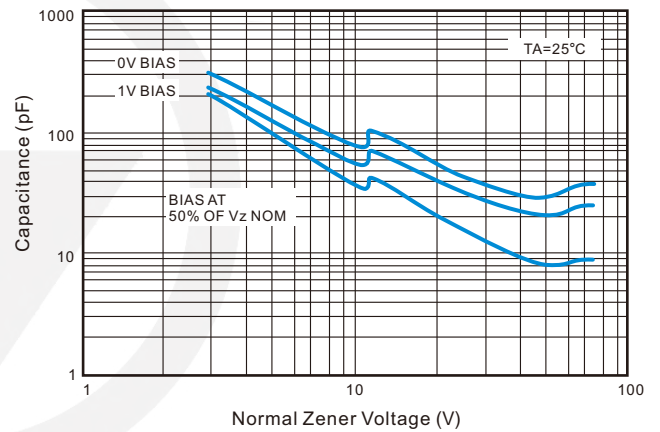
**Fig.2 EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE**



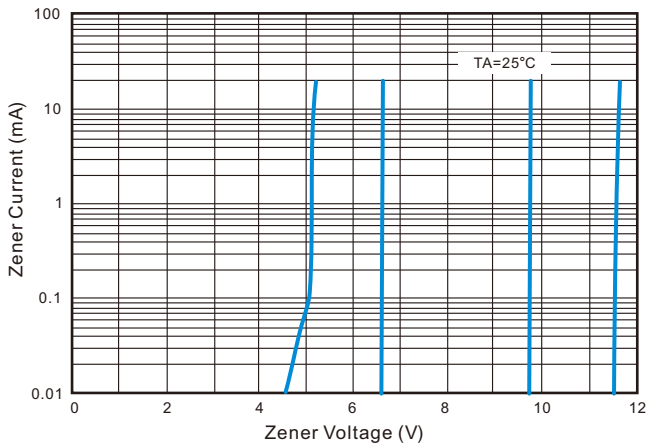
**FIG.3 POWER DISSIPATION VS. AMBIENT TEMP.**



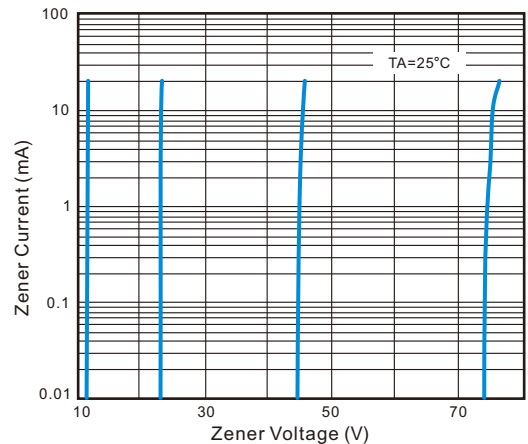
**FIG.4 TYPICAL CAPACITANCE**



**FIG.5 ZENER BREAKDOWN CHARACTERISTICS**

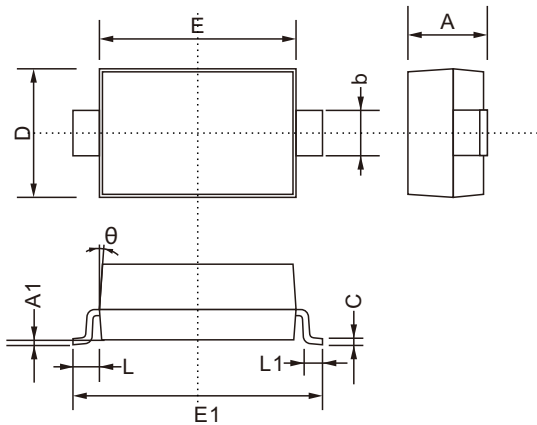


**FIG.6 ZENER BREAKDOWN CHARACTERISTICS**



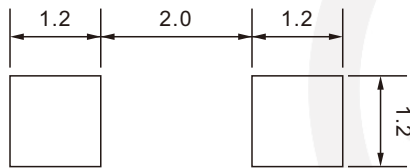
## SOD-123 Package Outline

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	
$\theta$	8°	

## SOD-123 Suggested Pad Layout

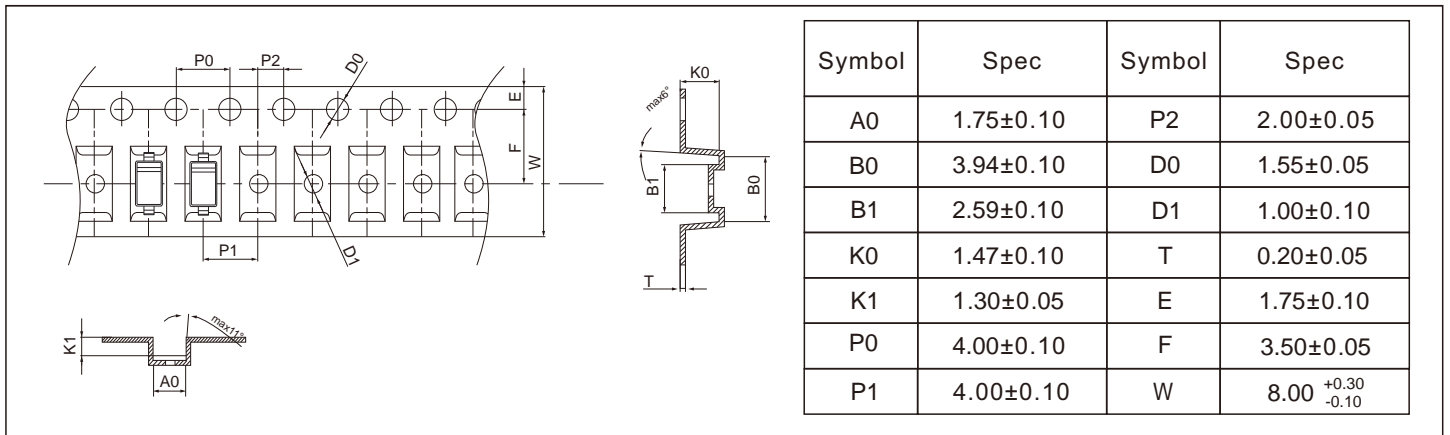


**Note:**

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$
3. The pad layout is for reference purpose only.

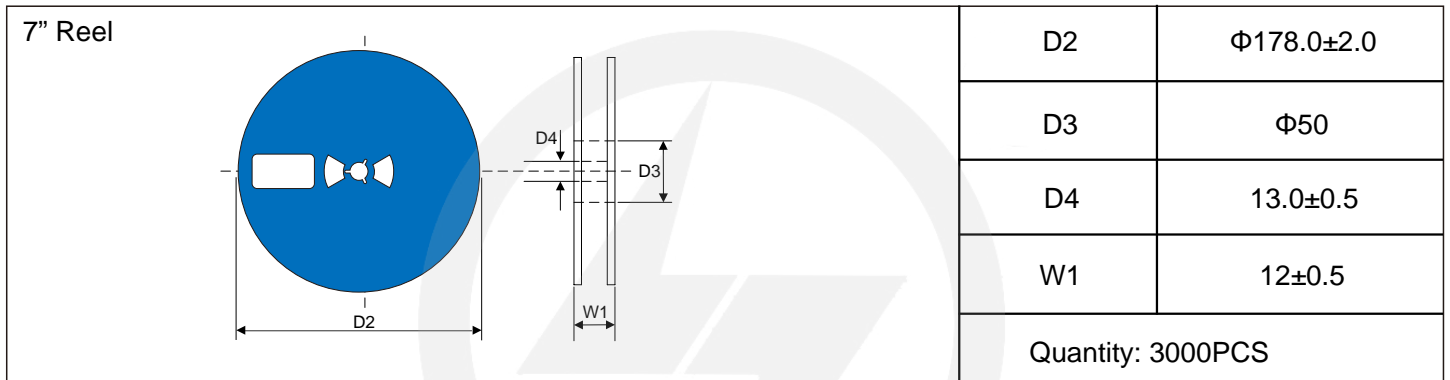
## Carrier Tape Dimensions

Unit : mm



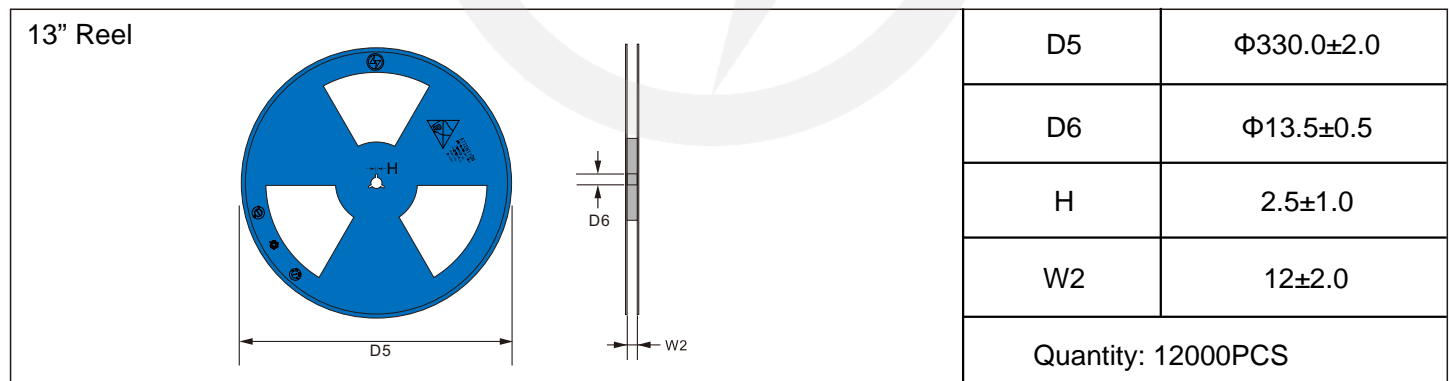
## Reel Dimensions

Unit : mm

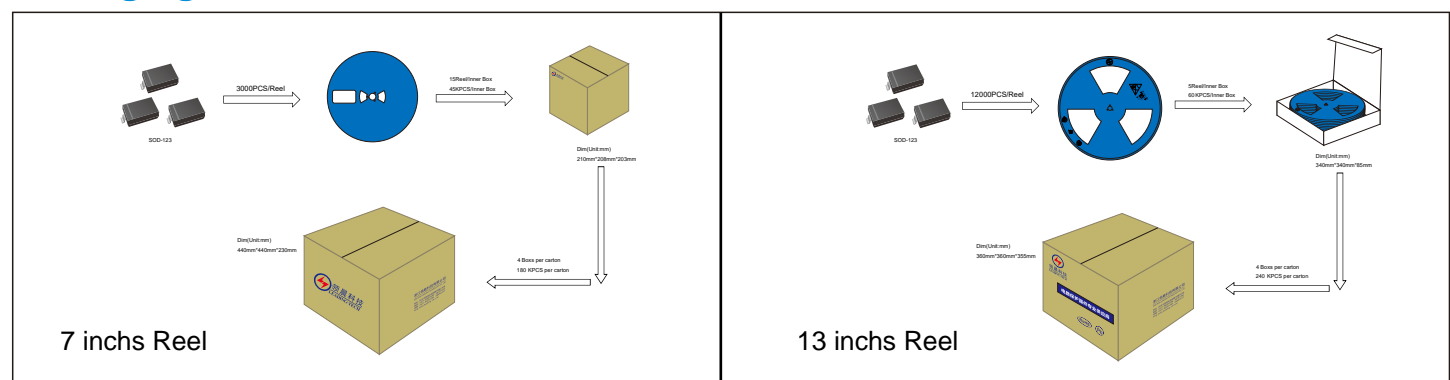


## Reel Dimensions

Unit : mm

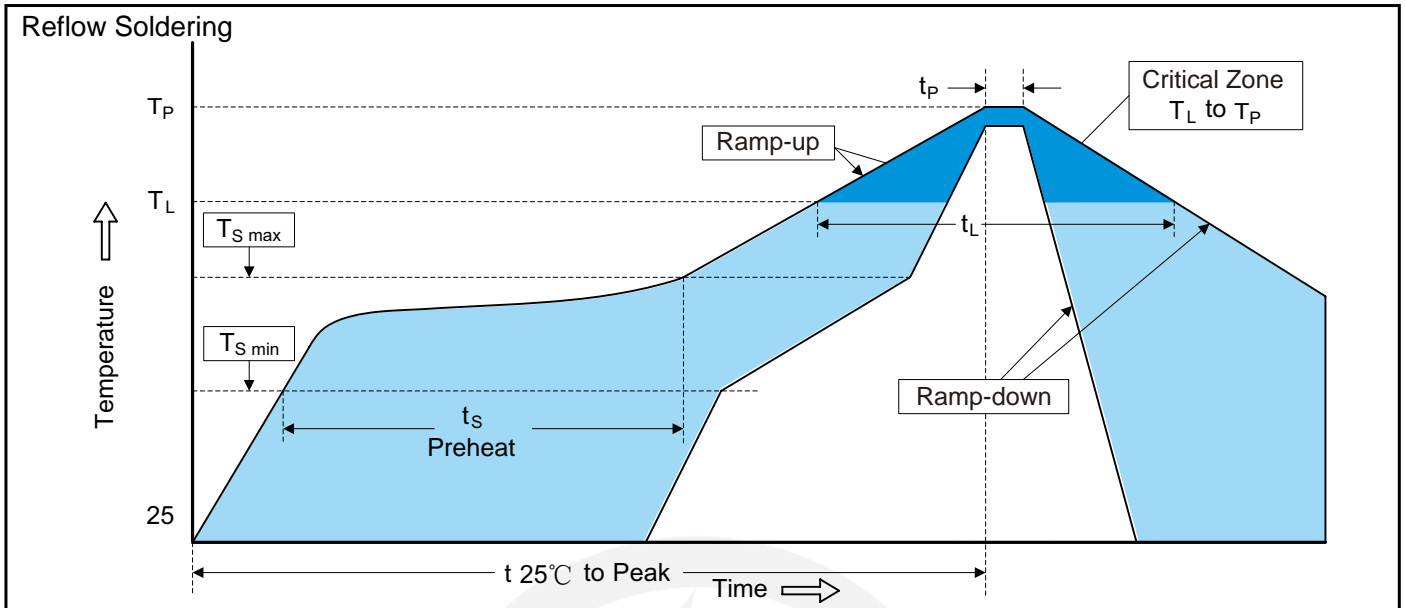


## Packaging





Recommended Soldering Conditions



Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T <sub>L</sub> to T <sub>P</sub> )	3°C/second max.
Preheat	
-Temperature Min (T <sub>S min</sub> )	150°C
-Temperature Max (T <sub>S max</sub> )	200°C
-Time (min to max) (t <sub>s</sub> )	60-180 seconds
T <sub>S max</sub> to T <sub>L</sub>	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
-Temperature (T <sub>L</sub> )	217°C
-Time (t <sub>L</sub> )	60-150 seconds
Peak Temperature (T <sub>P</sub> )	260°C
Time within 5°C of actual Peak Temperature (t <sub>p</sub> )	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C 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	2025.06.18	2025.06.18	3.1	Update packaging information	/	Ding	