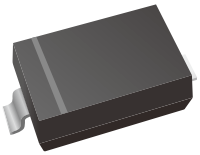
LT52Bxx Series

Zener Diodes

Features



- Low Zener Impedance
- 500mW Power Dissipation on Ceramic PCB
- General Purpose, Medium Current
- Ideally Suited for Automated Assembly Processes
- Available in Lead Free Version
- Lead free in comply with EU RoHS 2011/65/EU directives

Mechanical Data

- Case: SOD-123
- Polarity: Color band denotes cathode end
- Approx. Weight: 10.5mg

Ordering information

Part Number	Shipping	Reel
LT52Bxx-TR3	3000PCS Tape&Reel	7 inchs
LT52Bxx-TR12	12000PCS Tape&Reel	13 inchs

Maximum Ratings (Ta=25℃ unless otherwise Specified)

Characteristic	Symbol	Value	Unit
Forward Voltage (Note 2) @ I_F = 10mA	V_F	0.9	V
Power Dissipation(Note 1)	P_d	500	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	℃/W
Operation Junction and Storage Temperature Range	T_J,T_{stg}	-55 ~ +150	℃

Electrical Characteristics (Ta=25℃ unless otherwise Specified)

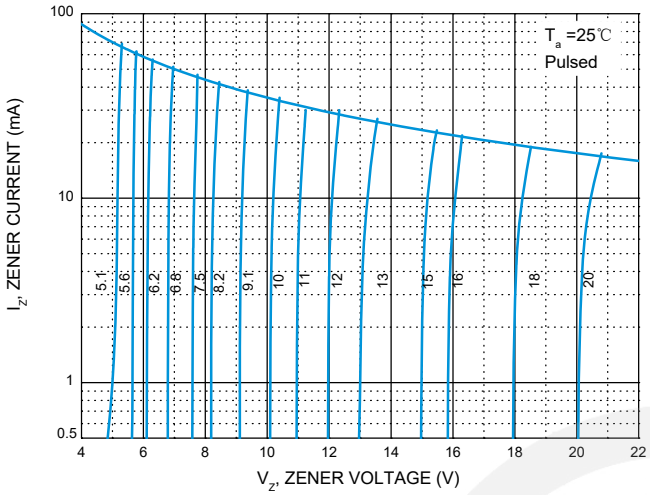
Type Number	Type Code	Zener Voltage Range (Note 2)				Maximum Zener Impedance (Note 3)			Maximum Reverse Current		Typical Temperature Coefficent @I_{ZTC}		Test Current I_{ZTC}
		V_Z@I_{ZT}			I_{ZT}	Z_{ZT}@I_{ZT}	Z_{ZK}@I_{ZK}	I_{ZK}	I_R	V_R	mV/°C		
		Nom(V)	Min(V)	Max(V)	mA	Ω		mA	μA	V	Min	Max	mA
LT52B3V0	2W2	3.0	2.94	3.06	5	95	600	1.0	10	1.0	-3.5	0	5
LT52B3V3	2W3	3.3	3.23	3.37	5	95	600	1.0	5	1.0	-3.5	0	5
LT52B3V6	2W4	3.6	3.53	3.67	5	90	600	1.0	5	1.0	-3.5	0	5
LT52B3V9	2W5	3.9	3.82	3.98	5	90	600	1.0	3	1.0	-3.5	0	5
LT52B4V3	2W6	4.3	4.21	4.39	5	90	600	1.0	3	1.0	-3.5	0	5
LT52B4V7	2W7	4.7	4.61	4.79	5	80	500	1.0	3	2.0	-3.5	0.2	5
LT52B5V1	2W8	5.1	5.00	5.20	5	60	480	1.0	2	2.0	-2.7	1.2	5
LT52B5V6	2W9	5.6	5.49	5.71	5	40	400	1.0	1	2.0	-2.0	2.5	5
LT52B6V2	2WA	6.2	6.08	6.32	5	10	150	1.0	3	4.0	0.4	3.7	5
LT52B6V8	2WB	6.8	6.66	6.94	5	15	80	1.0	2	4.0	1.2	4.5	5
LT52B7V5	2WC	7.5	7.35	7.65	5	15	80	1.0	1	5.0	2.5	5.3	5
LT52B8V2	2WD	8.2	8.04	8.36	5	15	80	1.0	0.7	5.0	3.2	6.2	5
LT52B9V1	2WE	9.1	8.92	9.28	5	15	100	1.0	0.5	6.0	3.8	7.0	5
LT52B10	2WF	10	9.80	10.20	5	20	150	1.0	0.2	7.0	4.5	8.0	5
LT52B11	2WG	11	10.78	11.22	5	20	150	1.0	0.1	8.0	5.4	9.0	5
LT52B12	2WH	12	11.76	12.24	5	25	150	1.0	0.1	8.0	6.0	10.0	5
LT52B13	2WI	13	12.74	13.26	5	30	170	1.0	0.1	8.0	7.0	11.0	5
LT52B15	2WJ	15	14.70	15.30	5	30	200	1.0	0.1	10.5	9.2	13.0	5
LT52B16	2WK	16	15.68	16.32	5	40	200	1.0	0.1	11.2	10.4	14.0	5
LT52B18	2WL	18	17.64	18.36	5	45	225	1.0	0.1	12.6	12.4	16.0	5
LT52B20	2WM	20	19.60	20.40	5	55	225	1.0	0.1	14.0	14.4	18.0	5
LT52B22	2WN	22	21.56	22.44	5	55	250	1.0	0.1	15.4	16.4	20.0	5
LT52B24	2WO	24	23.52	24.48	5	70	250	1.0	0.1	16.8	18.4	22.0	5
LT52B27	2WP	27	26.46	27.54	2	80	300	0.5	0.1	18.9	21.4	25.3	2
LT52B30	2WQ	30	29.40	30.60	2	80	300	0.5	0.1	21.0	24.4	29.4	2
LT52B33	2WR	33	32.34	33.66	2	80	325	0.5	0.1	23.1	27.4	33.4	2
LT52B36	2WS	36	35.28	36.72	2	90	350	0.5	0.1	25.2	30.4	37.4	2
LT52B39	2WT	39	38.22	39.78	2	130	350	0.5	0.1	27.3	33.4	41.2	2
LT52B43	2WU	43	42.14	43.86	2	130	350	0.5	0.1	29.4	36.4	45.2	2

Notes: 1. Device mounted on ceramic PCB:7.6mm x 9.4mm x 0.87mm with pad areas 25mm^2
2. Short duration test pulse used to minimize self-heating effect
3. f = 1kHz

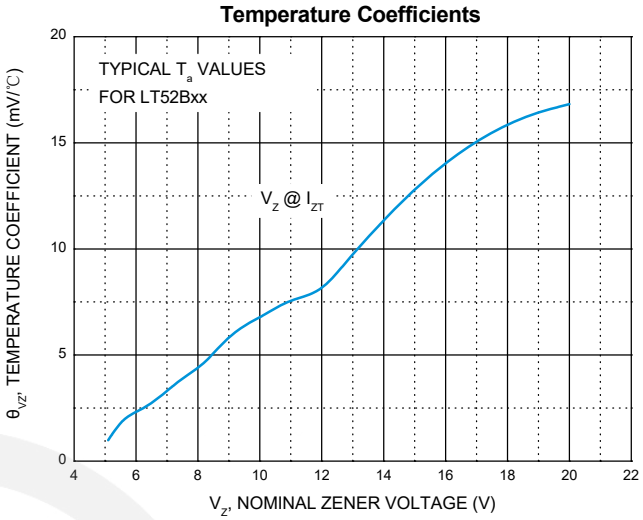
Typical characteristics

Notes: Our company currently provide 5.1 V - 20 V products only

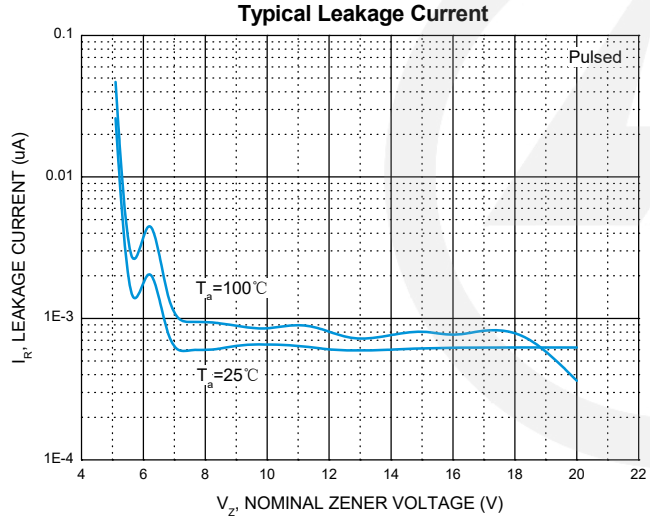
Zener Characteristics (V_Z 5.1V to 20 V)



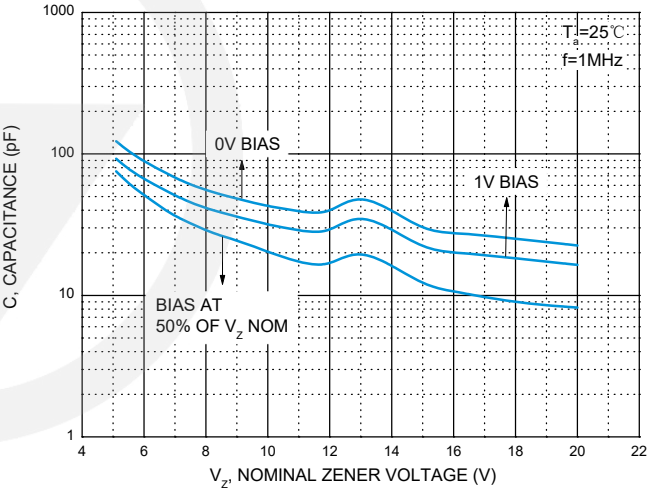
Temperature Coefficients



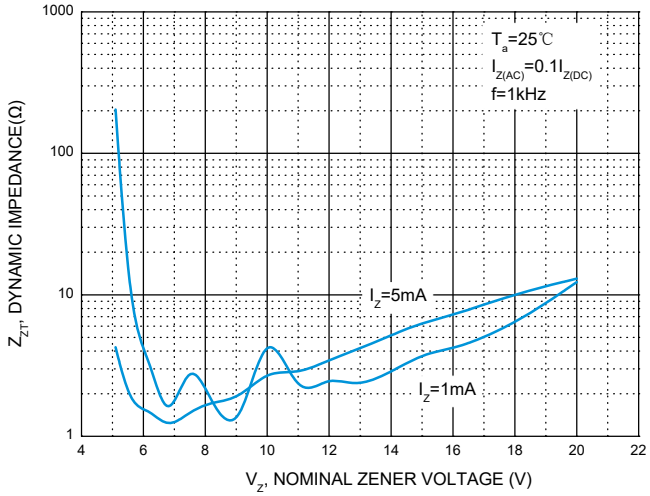
Typical Leakage Current



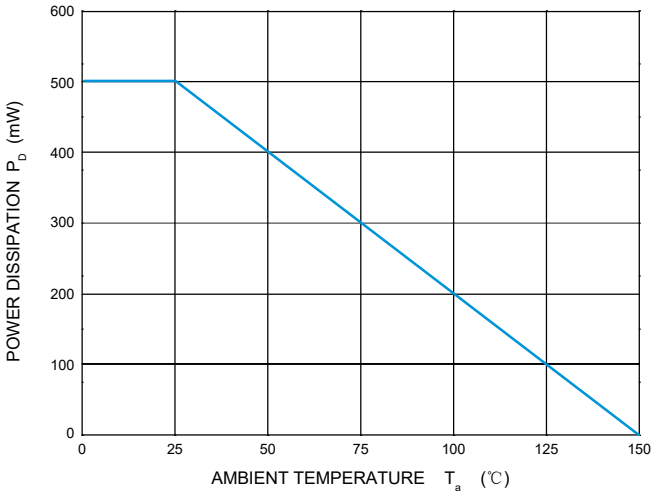
Typical Capacitance



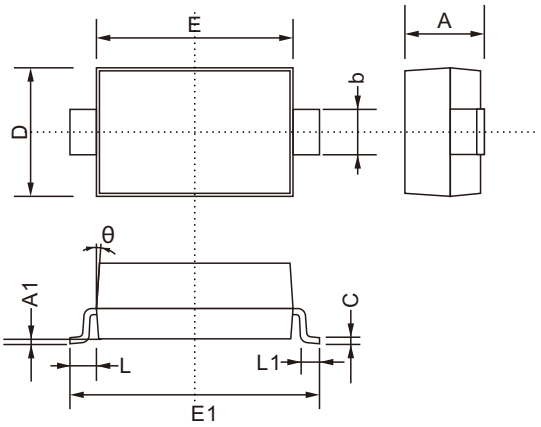
Effect of Zener Voltage on Zener Impedance



Power Derating Curve



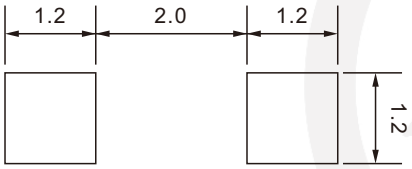
SOD-123 Package Outline



Unit : mm

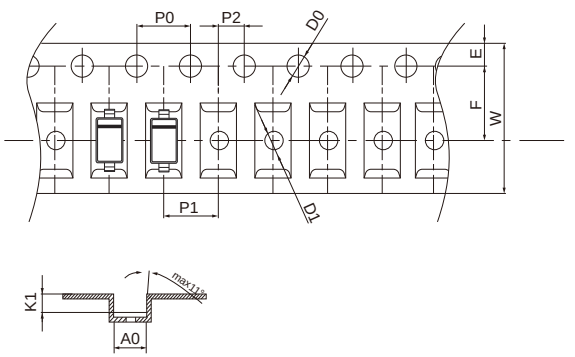
SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.300
A1	0.000	0.200
b	0.450	0.750
C	0.080	0.230
D	1.500	1.800
E	2.500	2.800
E1	3.550	3.900
L1	0.250	0.450
L	0.5REF	
θ	8°	

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.

Carrier Tape Dimensions

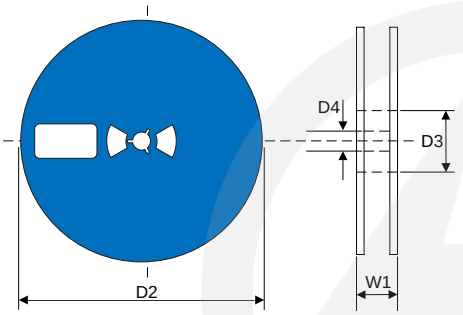


Symbol	Spec	Symbol	Spec
A0	1.75±0.10	P2	2.00±0.05
B0	3.94±0.10	D0	1.55±0.05
B1	2.59±0.10	D1	1.00±0.10
K0	1.47±0.10	T	0.20±0.05
K1	1.30±0.05	E	1.75±0.10
P0	4.00±0.10	F	3.50±0.05
P1	4.00±0.10	W	8.00 $^{+0.30}_{-0.10}$

Reel Dimensions

Unit：mm

7” Reel

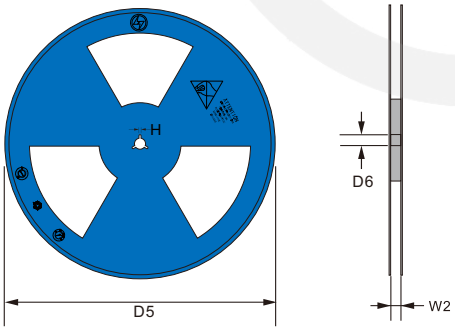


D2	Φ178.0±2.0
D3	Φ50
D4	13.0±0.5
W1	12±0.5
Quantity: 3000PCS	

Reel Dimensions

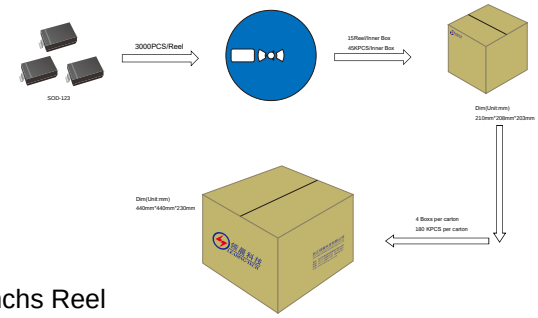
Unit：mm

13” Reel

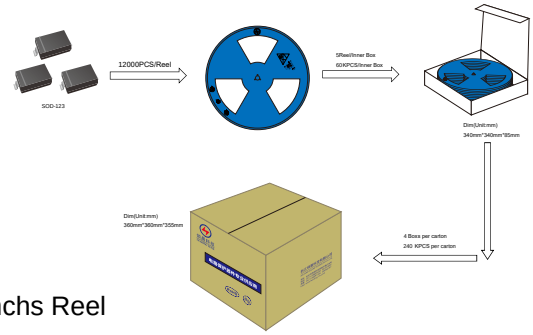


D5	Φ330.0±2.0
D6	Φ13.5±0.5
H	2.5±1.0
W2	12±2.0
Quantity: 12000PCS	

Packaging



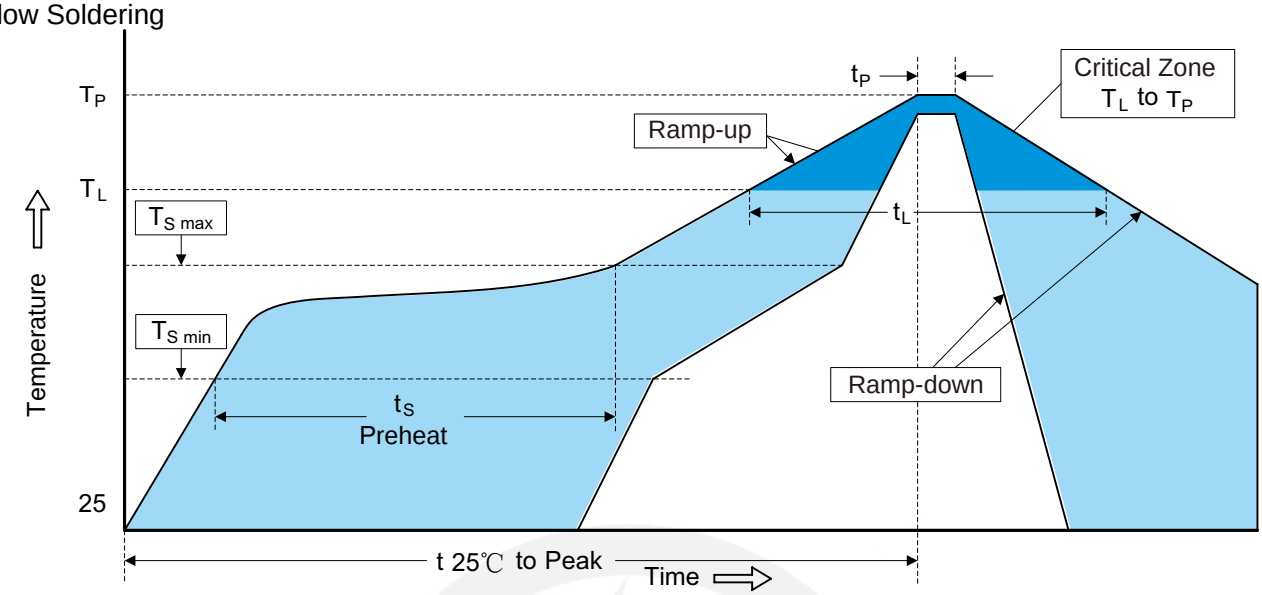
7 inchs Reel



13 inchs Reel

Recommended Soldering Conditons

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	2024.11.28	2024.11.28	3.0	New File	/	Ding	