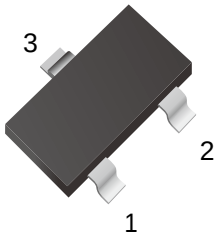
LTZ84Cxx Series

Zener Diodes

Features



- Low Zener Impedance
- Power Dissipation of 300mW
- High Stability and High Reliability
- Lead free in comply with EU RoHS 2011/65/EU directives

Mechanical Data

- Case:SOT-23
- Small Outline Plastic Package
- Package Polarity: Color band denotes cathode end
- Epoxy UL: 94V-0
- Mounting Position: Any
- Approx. Weight: 8.1mg

Ordering Information

Part Number	Shipping	Reel
LTZ84Cxx-TR3	3000PCS Tape&Reel	7 inchs
LTZ84Cxx-TR12	12000PCS Tape&Reel	13 inchs

Maximum Ratings (at 25°C)

Characteristic	Symbol	Value	Unit
Power Dissipation(Note 1)	P_d	300	mW
Forward Voltage (Note 2) @ I_F = 10mA	V_F	0.9	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	417	℃/W
Operation Junction and Storage Temperature Range	T_J,T_{stg}	-55~+150	℃

Notes: 1. Valid provided that device terminals are kept at ambient temperature.
2. Tested with pulses, period=5ms,pulse width =300μs.
3. f = 1kH_Z.

Electrical characteristics (T_A=25℃)

Type Number	Code	ZenerVoltage Range (Note 2)				Maximum Zener Impedance (Note 3)			Maximum Reverse Current		Temperature Coefficent of Zener voltage @ I_{ZT}=5mA mV/°C	
		V_Z@I_{ZT}			I_{ZT}	Z_{ZT}@I_{ZT}	Z_{ZK}@I_{ZK}	I_{ZK}	I_R	V_R		
		Nom(V)	Min(V)	Max(V)	(mA)	(Ω)		(mA)	(μA)	(V)	Min	Max
LTZ84C2V4	Z11	2.4	2.20	2.60	5	100	600	1.0	50	1.0	-3.5	0
LTZ84C2V7	Z12	2.7	2.5	2.9	5	100	600	1.0	20	1.0	-3.5	0
LTZ84C3V0	Z13	3.0	2.8	3.2	5	95	600	1.0	10	1.0	-3.5	0
LTZ84C3V3	Z14	3.3	3.1	3.5	5	95	600	1.0	5	1.0	-3.5	0
LTZ84C3V6	Z15	3.6	3.4	3.8	5	90	600	1.0	5	1.0	-3.5	0
LTZ84C3V9	Z16	3.9	3.7	4.1	5	90	600	1.0	3	1.0	-3.5	0
LTZ84C4V3	Z17	4.3	4.0	4.6	5	90	600	1.0	3	1.0	-3.5	0
LTZ84C4V7	Z1	4.7	4.4	5.0	5	80	500	1.0	3	2.0	-3.5	0.2
LTZ84C5V1	Z2	5.1	4.8	5.4	5	60	480	1.0	2	2.0	-2.7	1.2
LTZ84C5V6	Z3	5.6	5.2	6.0	5	40	400	1.0	1	2.0	-2.0	2.5
LTZ84C6V2	Z4	6.2	5.8	6.6	5	10	150	1.0	3	4.0	0.4	3.7
LTZ84C6V8	Z5	6.8	6.4	7.2	5	15	80	1.0	2	4.0	1.2	4.5
LTZ84C7V5	Z6	7.5	7.0	7.9	5	15	80	1.0	1	5.0	2.5	5.3
LTZ84C8V2	Z7	8.2	7.7	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2
LTZ84C9V1	Z8	9.1	8.5	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0
LTZ84C10	Z9	10	9.4	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0
LTZ84C11	Y1	11	10.4	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0
LTZ84C12	Y2	12	11.4	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0
LTZ84C13	Y3/WK	13	12.4	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0
LTZ84C15	Y4	15	13.8	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0
LTZ84C16	Y5	16	15.3	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0
LTZ84C18	Y6	18	16.8	19.1	5	45	225	1.0	0.1	12.6	12.4	16.0
LTZ84C20	Y7	20	18.8	21.2	5	55	225	1.0	0.1	14.0	14.4	18.0
LTZ84C22	Y8	22	20.8	23.3	5	55	250	1.0	0.1	15.4	16.4	20.0
LTZ84C24	Y9	24	22.8	25.6	5	70	250	1.0	0.1	16.8	18.4	22.0
LTZ84C27	Y10	27	25.1	28.9	2	80	300	0.5	0.1	18.9	21.4	25.3
LTZ84C30	Y11	30	28.0	32.0	2	80	300	0.5	0.1	21.0	24.4	29.4
LTZ84C33	Y12	33	31.0	35.0	2	80	325	0.5	0.1	23.1	27.4	33.4
LTZ84C36	Y13	36	34.0	38.0	2	90	350	0.5	0.1	25.2	30.4	37.4
LTZ84C39	Y14	39	37.0	41.0	2	130	350	0.5	0.1	27.3	33.4	41.2
LTZ84C43	Y15	43	40.0	46.0	2	100	700	1	0.1	32	10	12

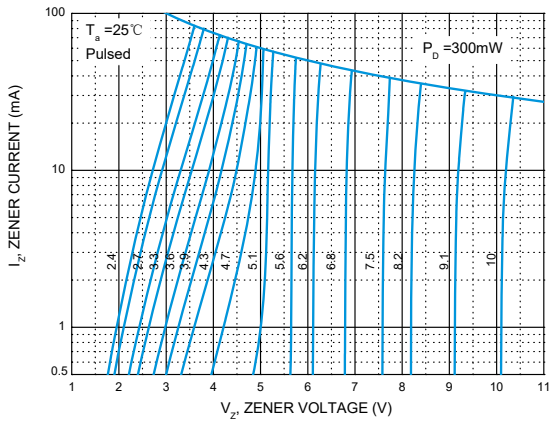
Notes: 1. Valid provided that device terminals are kept at ambient temperature.

2. Tested with pulses, period=5ms,pulse width =300μs.

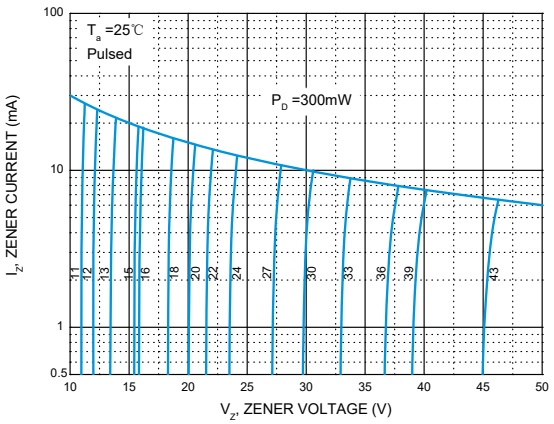
3. f = 1kH_Z.

Characteristics Curves

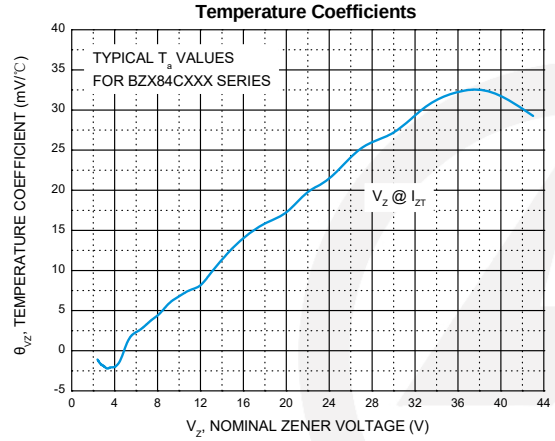
Zener Characteristics (V_Z Up to 10 V)



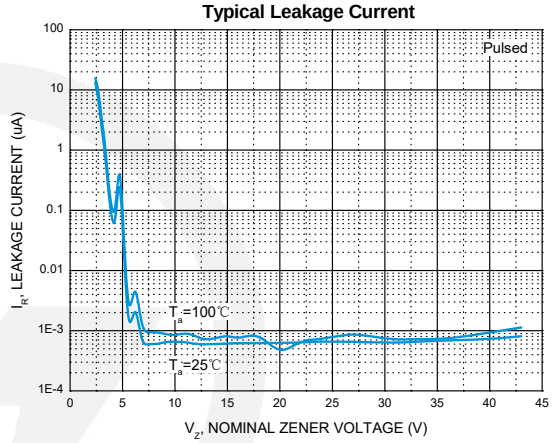
Zener Characteristics (11 V to 43 V)



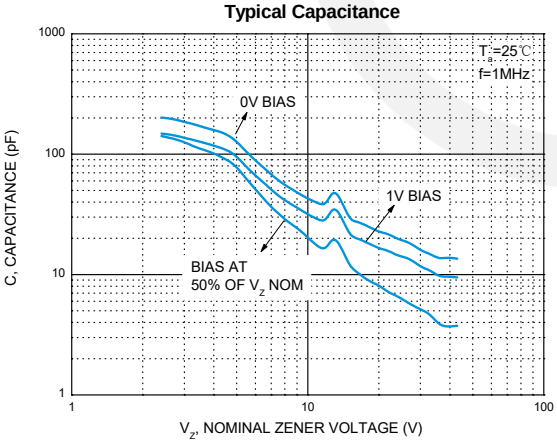
Temperature Coefficients



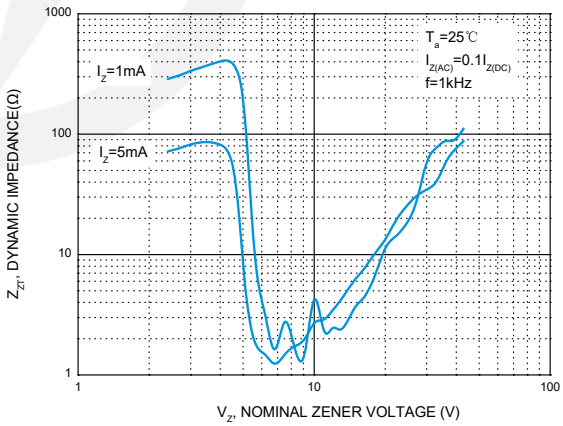
Typical Leakage Current



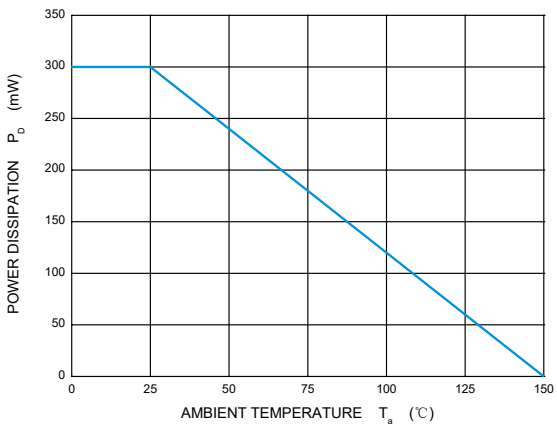
Typical Capacitance



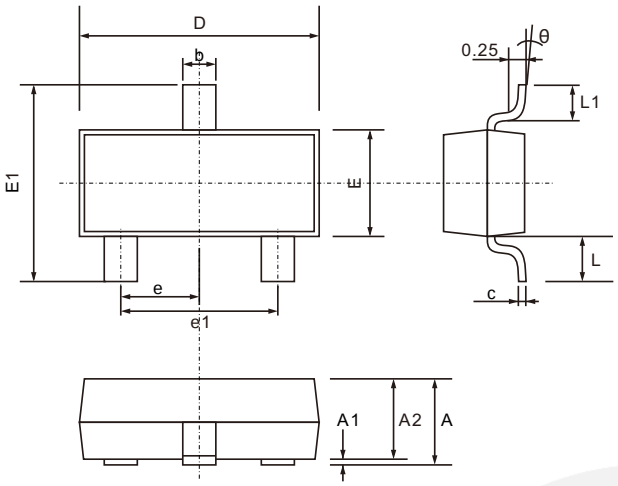
Effect of Zener Voltage on Zener Impedance



Power Derating Curve



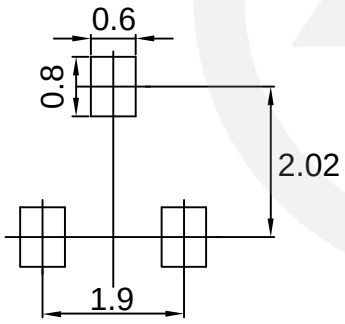
SOT-23 Package Outline



Unit: mm

SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.200
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.200
D	2.700	3.100
E	1.200	1.400
E1	2.200	2.600
e	0.950 TYP.	
e1	1.750	2.050
L	0.550 TYP.	
L1	0.300	0.500
θ	0°	8°

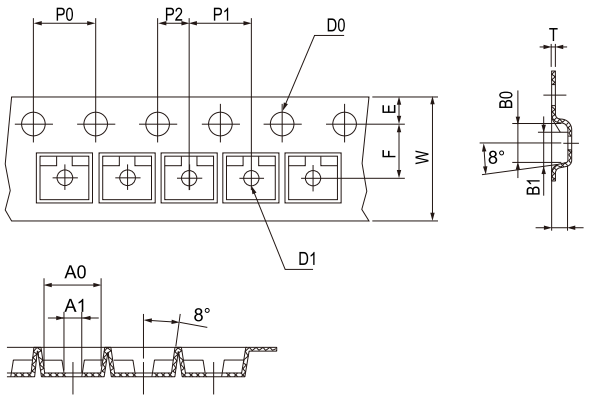
SOT-23 Suggested Pad Layout



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

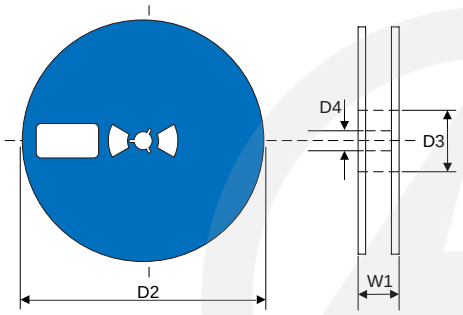


Symbol	Spec	Symbol	Spec
A0	3.15±0.10	P0	4.00±0.05
A1	1.09±0.10	P1	4.00±0.02
B0	2.77±0.10	W	8.00±0.10
B1	2.15±0.10	E	1.75±0.10
K0	1.22±0.10	F	3.50±0.05
D0	1.50±0.10	T	2.00±0.10
D1	1.00±0.10		

Reel Dimensions

Unit：mm

7” Reel

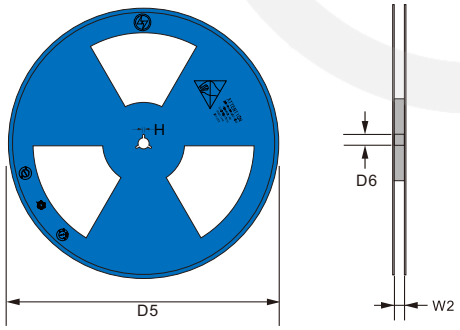


D2	Φ178.0±2.0
D3	Φ50
D4	13.0±0.5
W1	12±0.5
Quantity: 3000PCS	

Reel Dimensions

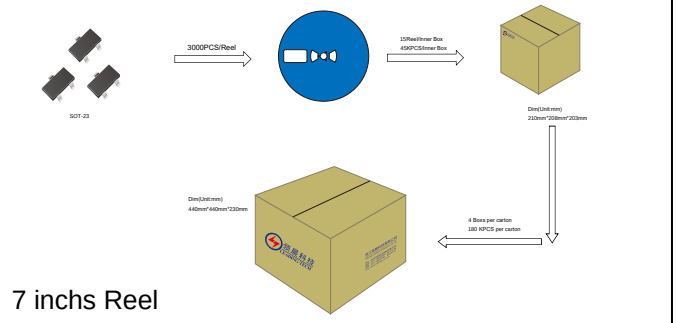
Unit：mm

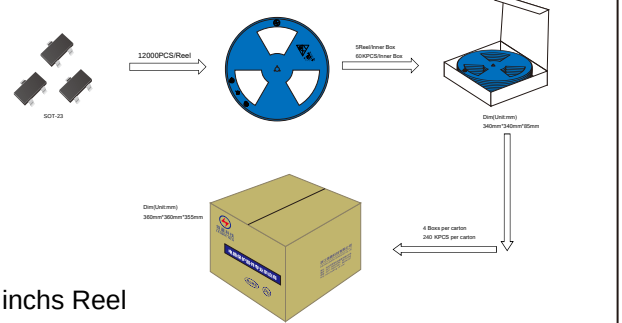
13” Reel



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

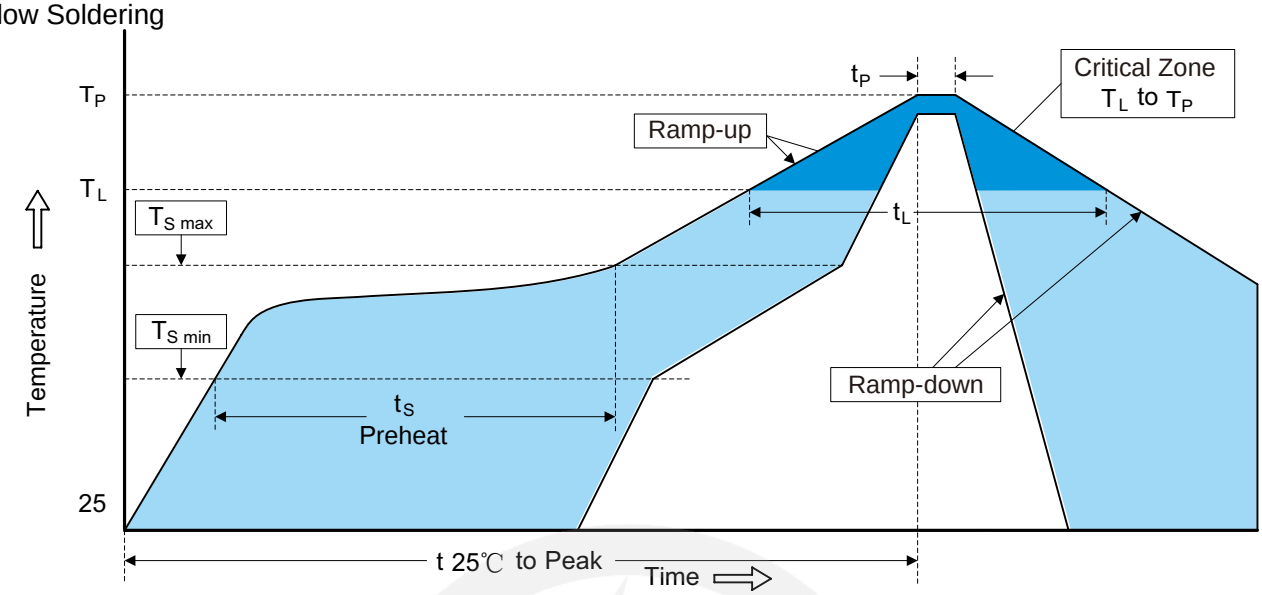
Packaging





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	2024.03.18	2024.03.18	3.0	New file	/	Ding	
02	2025.06.17	2025.06.17	3.1	Update packaging information	/	Ding	
03	2026.03.04	2026.03.04	3.2	Package outline E1(max)=2.6mm	/	Ding	