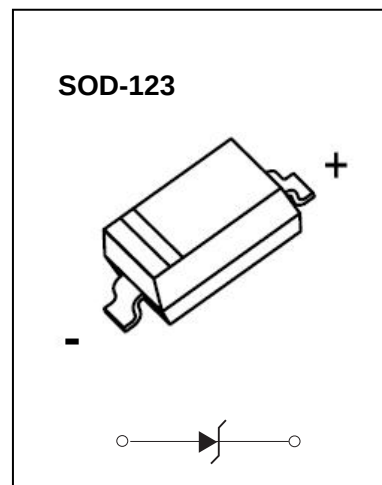


ZENER DIODE

FEATURES:

- Planar Die Construction
- 500mW Power Dissipation on Ceramic PCB
- General Purpose, Medium Current
- Ideally Suited for Automated Assembly Processes
- Available in Lead Free Version



Maximum Ratings($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Characteristic	Symbol	Value	Unit
Forward Voltage (Note 2) @ $I_F = 10\text{mA}$	V_F	0.9	V
Power Dissipation(Note 1)	P_D	500	mW
Thermal Resistance from Junction to Ambient(Note 1)	$R_{\theta JA}$	250	$^{\circ}\text{C/W}$
Operation Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^{\circ}\text{C}$

T_a=25°C unless otherwise specified

Type Number	Marking Code	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse Current		Typical Temperature Coefficient@ ZTC mV/ °C		Test Current ZTC
		V _Z @I _{ZT}			Z _T	Z _T @I _{ZT}	Z _{ZK} @I _{ZK}	Z _K	R	@V _R			
		Nom(V)	Min(V)	Max(V)	mA	Ω		mA	μA	V	Min	Max	mA
BZT52C2V4	WX	2.4	2.2	2.6	5	100	600	1.0	50	1.0	-3.5	0	5
BZT52C2V7	W1	2.7	2.5	2.9	5	100	600	1.0	20	1.0	-3.5	0	5
BZT52C3V0	W2	3.0	2.8	3.2	5	95	600	1.0	10	1.0	-3.5	0	5
BZT52C3V3	W3	3.3	3.1	3.5	5	95	600	1.0	5.0	1.0	-3.5	0	5
BZT52C3V6	W4	3.6	3.4	3.8	5	90	600	1.0	5.0	1.0	-3.5	0	5
BZT52C3V9	W5	3.9	3.7	4.1	5	90	600	1.0	3.0	1.0	-3.5	0	5
BZT52C4V3	W6	4.3	4.0	4.6	5	90	600	1.0	3.0	1.0	-3.5	0	5
BZT52C4V7	W7	4.7	4.4	5.0	5	80	500	1.0	3.0	2.0	-3.5	0	5
BZT52C5V1	W8	5.1	4.8	5.4	5	60	480	1.0	2.0	2.0	-2.7	1.2	5
BZT52C5V6	W9	5.6	5.2	6.0	5	40	400	1.0	1.0	2.0	-2	2.5	5
BZT52C6V2	WA	6.2	5.8	6.6	5	10	150	1.0	3.0	4.0	0.4	3.7	5
BZT52C6V8	WB	6.8	6.4	7.2	5	15	80	1.0	2.0	4.0	1.2	4.5	5
BZT52C7V5	WC	7.5	7.0	7.9	5	15	80	1.0	1.0	5.0	2.5	5.3	5
BZT52C8V2	WD	8.2	7.7	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2	5
BZT52C9V1	WE	9.1	8.5	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0	5
BZT52C10	WF	10	9.4	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0	5
BZT52C11	WG	11	10.4	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0	5
BZT52C12	WH	12	11.4	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0	5
BZT52C13	WI	13	12.4	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0	5
BZT52C15	WJ	15	13.8	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0	5
BZT52C16	WK	16	15.3	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0	5
BZT52C18	WL	18	16.8	19.1	5	45	225	1.0	0.1	12.6	12.4	16.0	5
BZT52C20	WM	20	18.8	21.2	5	55	225	1.0	0.1	14.0	14.4	18.0	5
BZT52C22	WN	22	20.8	23.3	5	55	250	1.0	0.1	15.4	16.4	20.0	5
BZT52C24	WO	24	22.8	25.6	5	70	250	1.0	0.1	16.8	18.4	22.0	5
BZT52C27	WP	27	25.1	28.9	2	80	300	0.5	0.1	18.9	21.4	25.3	2
BZT52C30	WQ	30	28.0	32.0	2	80	300	0.5	0.1	21.0	24.4	29.4	2
BZT52C33	WR	33	31.0	35.0	2	80	325	0.5	0.1	23.1	27.4	33.4	2
BZT52C36	WS	36	34.0	38.0	2	90	350	0.5	0.1	25.2	30.4	37.4	2
BZT52C39	WT	39	37.0	41.0	2	130	350	0.5	0.1	27.3	33.4	41.2	2
BZT52C43	WU	43	40.0	46.0	5	100	700	1.0	0.1	32	10.0	12.0	5
BZT52C47	WV	47	44.0	50.0	5	100	750	1.0	0.1	35	10.0	12.0	5
BZT52C51	WW	51	48.0	54.0	5	100	750	1.0	0.1	38	10.0	12.0	5

Notes: 1.The value of R_{θJA} is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with T_a=25 °C

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

3. f=1kHz



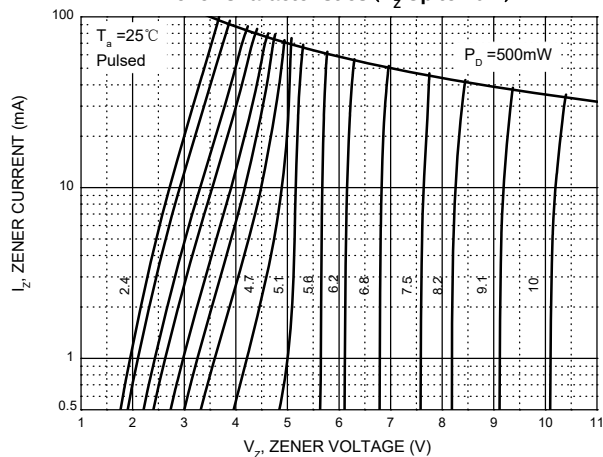
$T_a=25^{\circ}\text{C}$ unless otherwise specified

Type Number	Marking Code	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse		Temperature Coefficient of zener voltage @ I_{ZTC} mV/ $^{\circ}\text{C}$	
		$V_Z@I_{ZT}$			I_{ZT}	$Z_{ZT}@I_{ZT}$	$Z_{ZK}@I_{ZK}$	I_{ZK}	R	@ V_R		
		Nom(V)	Min(V)	Max(V)	mA	Ω		mA	μA	V	Min	Max
BZT52C56	WX	56	53.2	58.8	2	200	400	0.5	0.045	39.2	10.0	12.0
BZT52C62	WY	62	58.9	65.1	2	215	423	0.5	0.045	43.4	10.0	12.0
BZT52C68	WZ	68	64.6	71.4	2	240	447	0.5	0.045	47.6	10.0	12.0
BZT52C75	6H	75	71.25	78.75	2	255	470	0.5	0.045	52.5	10.0	12.0

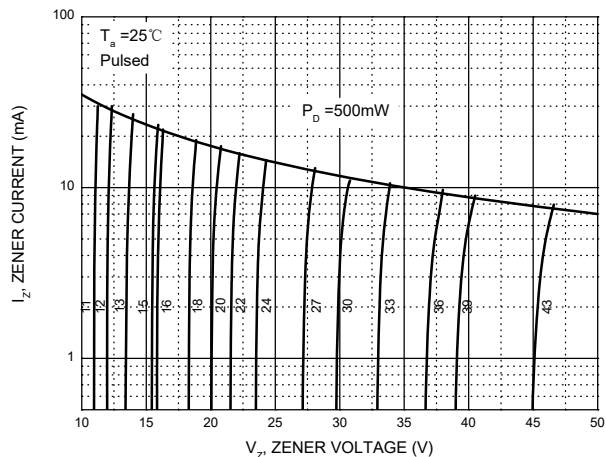
Notes: 1. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with $T_a=25^{\circ}\text{C}$

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

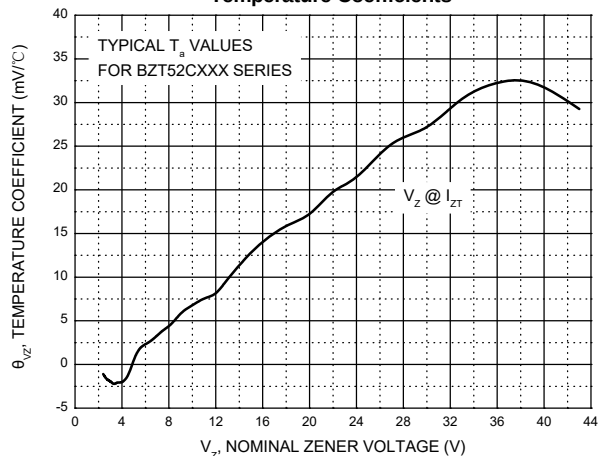
3. $f=1\text{kHz}$

Zener Characteristics (V_z Up to 10 V)

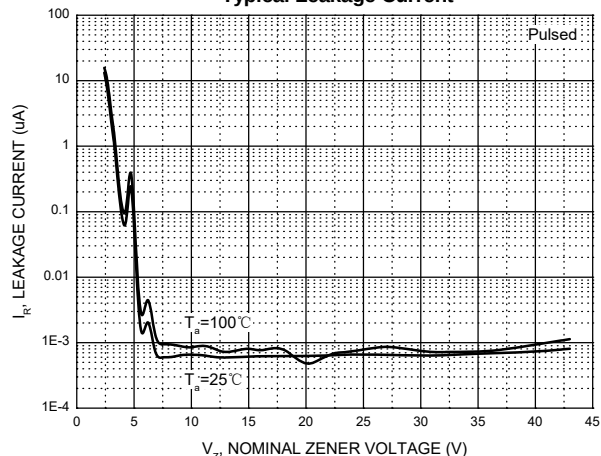
Zener Characteristics (11 V to 43 V)



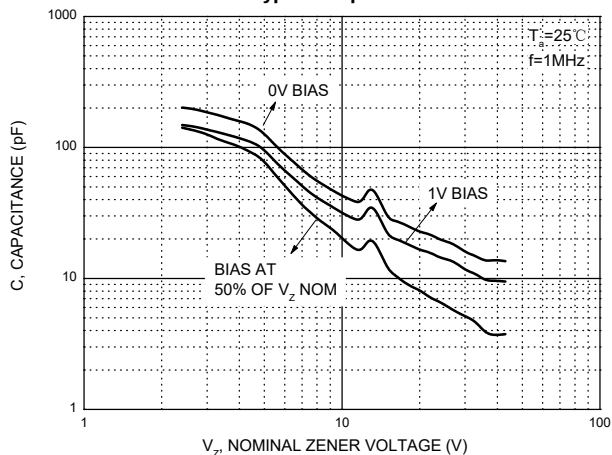
Temperature Coefficients



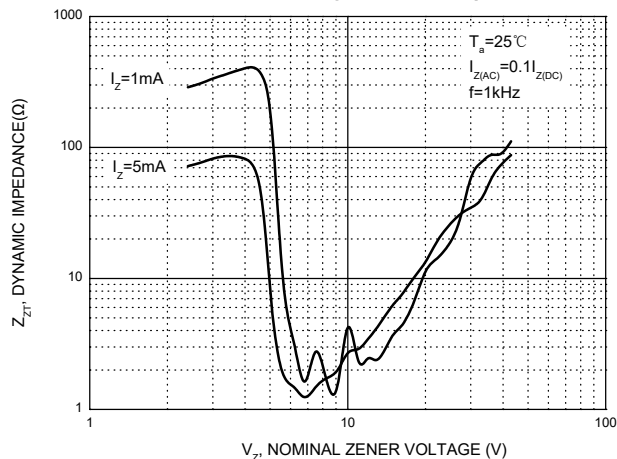
Typical Leakage Current



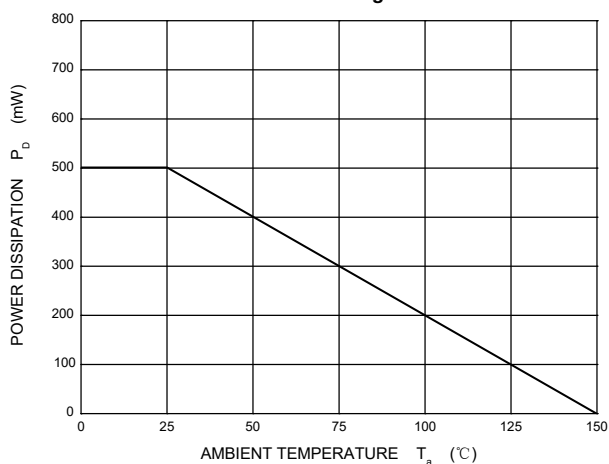
Typical Capacitance

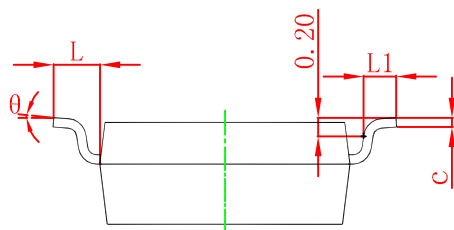
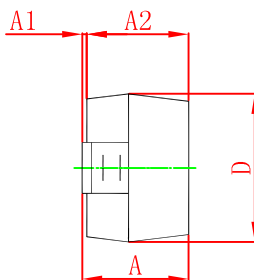
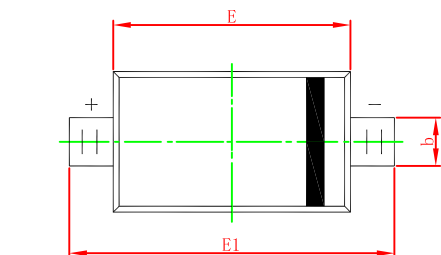


Effect of Zener Voltage on Zener Impedance

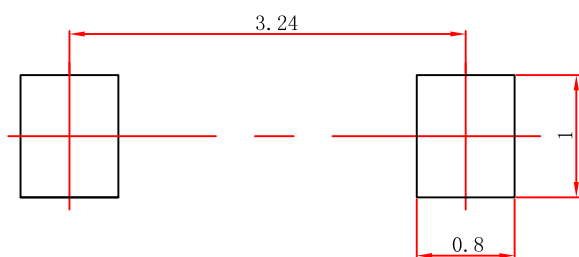


Power Derating Curve



**SOD-123 Package Outline Dimensions**

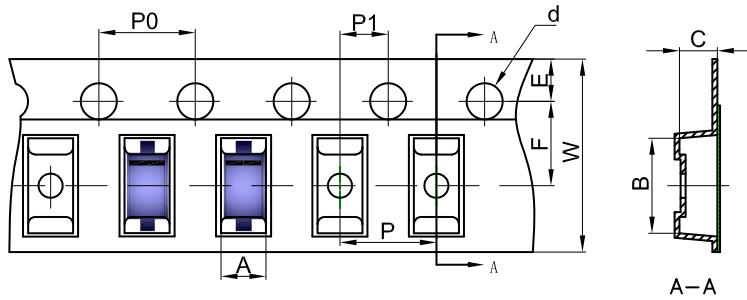
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.450	0.650	0.018	0.026
c	0.080	0.150	0.003	0.006
D	1.500	1.700	0.059	0.067
E	2.600	2.800	0.102	0.110
E1	3.550	3.850	0.140	0.152
L	0.500 REF		0.020 REF	
L1	0.250	0.450	0.010	0.018
θ	0°	8°	0°	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 purposes only.



SOD-123 Embossed Carrier Tape

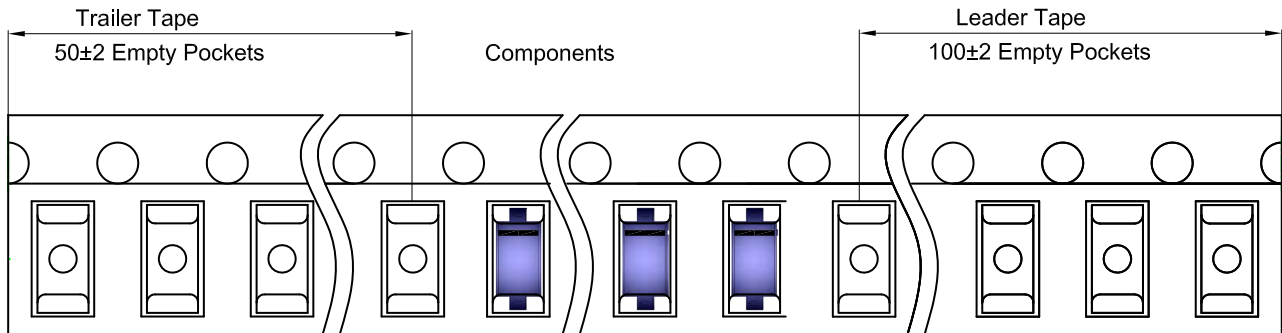


Packaging Description:

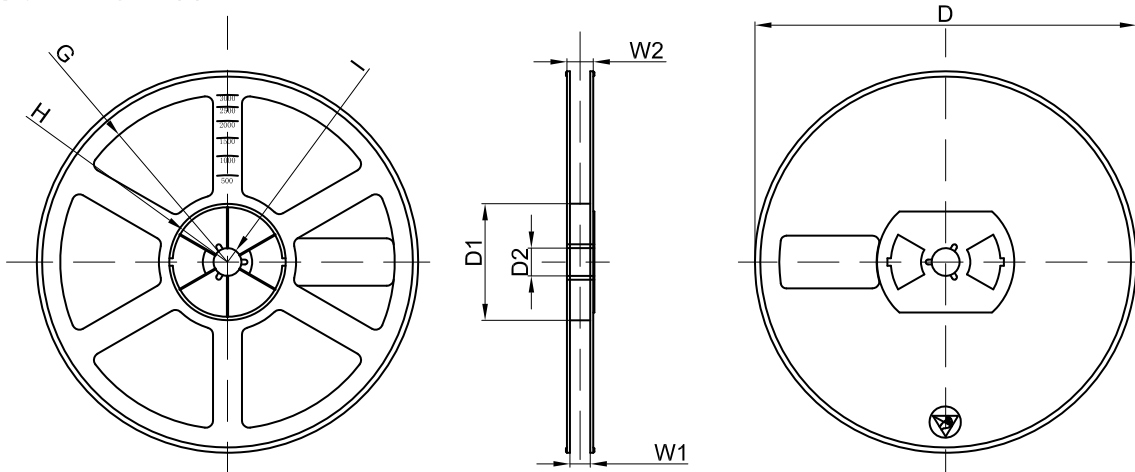
SOD-123 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOD-123	1.85	3.95	1.57	Ø1.55	1.75	3.50	4.00	4.00	2.00	8.00

SOD-123 Tape Leader and Trailer



SOD-123 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	