

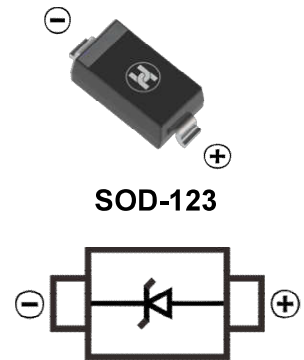
ZENER DIODE

FEATURES

- Medium current
- 500mW power dissipation
- Planar die construction
- Surface mount device

MECHANICAL DATA

- Case: SOD-123
- Case material: Molded plastic. UL flammability
- Classification rating: 94V-0
- Terminals: Tin plated, solderable per MIL-STD-202, Method 208
- Weight: 0.005 grams (approximate)



MARKING (alternative)

Device No.	Marking	Device No.	Marking
BZT52C2V4	WX	BZT52C15	WJ
BZT52C2V7	W1	BZT52C16	WK
BZT52C3V0	W2	BZT52C18	WL
BZT52C3V3	W3	BZT52C20	WM
BZT52C3V6	W4	BZT52C22	WN
BZT52C3V9	W5	BZT52C24	WO
BZT52C4V3	W6	BZT52C27	WP
BZT52C4V7	W7	BZT52C30	WQ
BZT52C5V1	W8	BZT52C33	WR
BZT52C5V6	W9	BZT52C36	WS
BZT52C6V2	WA	BZT52C39	WT
BZT52C6V8	WB	BZT52C43	WU
BZT52C7V5	WC	BZT52C47	WV
BZT52C8V2	WD	BZT52C51	WW
BZT52C9V1	WE		
BZT52C10	WF		
BZT52C11	WG		
BZT52C12	WH		
BZT52C13	WI		

MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Forward voltage @ $I_F = 10\text{mA}$	V_F	0.9	V
Power dissipation	P_D	500	mW
Thermal resistance from junction to ambient	$R_{\theta JA}$	350	$^\circ\text{C/W}$
Junction and storage temperature	T_J, T_{STG}	-65 ~ +150	$^\circ\text{C}$

Note 1. Valid provide the electrodes are kept at ambient temperature.

ZENER DIODE
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Part Number	V _Z @I _{ZT} (Volt)			I _{ZT} (mA)	Z _{ZT} @ I _{ZT} (Ω) Max	I _{ZK} (mA)	Z _{ZK} @ I _{ZK} (Ω) Max	I _R @ V _R (μA) Max	V _R (V)
	Min	Nom	Max						
BZT52C2V4	2.28	2.40	2.52	5	100	1	564	45	1.0
BZT52C2V7	2.57	2.70	2.84	5	100	1	564	18	1.0
BZT52C3V0	2.85	3.00	3.15	5	100	1	564	9	1.0
BZT52C3V3	3.14	3.30	3.47	5	95	1	564	4.5	1.0
BZT52C3V6	3.42	3.60	3.78	5	90	1	564	4.5	1.0
BZT52C3V9	3.71	3.90	4.10	5	90	1	564	2.7	1.0
BZT52C4V3	4.09	4.30	4.52	5	90	1	564	2.7	1.0
BZT52C4V7	4.47	4.70	4.94	5	80	1	470	2.7	2.0
BZT52C5V1	4.85	5.10	5.36	5	60	1	451	1.8	2.0
BZT52C5V6	5.32	5.60	5.88	5	40	1	376	0.9	2.0
BZT52C6V2	5.89	6.20	6.51	5	10	1	141	2.7	4.0
BZT52C6V8	6.46	6.80	7.14	5	15	1	75	1.8	4.0
BZT52C7V5	7.11	7.50	7.86	5	15	1	75	0.9	5.0
BZT52C8V2	7.79	8.20	8.61	5	15	1	75	0.63	5.0
BZT52C9V1	8.65	9.10	9.56	5	15	1	94	0.45	6.0
BZT52C10	9.50	10.00	10.5	5	20	1	141	0.18	7.0
BZT52C11	10.45	11.00	11.55	5	20	1	141	0.09	8.0
BZT52C12	11.40	12.00	12.60	5	25	1	141	0.09	8.0
BZT52C13	12.35	13.00	13.65	5	30	1	160	0.09	8.0
BZT52C15	14.25	15.00	15.75	5	30	1	188	0.045	10.5
BZT52C16	15.20	16.00	16.80	5	40	1	188	0.045	11.2
BZT52C18	17.10	18.00	18.90	5	45	1	212	0.045	12.6
BZT52C20	19.00	20.00	21.00	5	55	1	212	0.045	14.0
BZT52C22	20.90	22.00	23.10	5	55	1	235	0.045	15.4
BZT52C24	22.80	24.00	25.20	5	70	1	235	0.045	16.8
BZT52C27	25.65	27.00	28.35	2	80	0.5	282	0.045	18.9
BZT52C30	28.50	30.00	31.50	2	80	0.5	282	0.045	21.0
BZT52C33	31.35	33.00	34.65	2	80	0.5	306	0.045	23.0
BZT52C36	34.20	36.00	37.80	2	90	0.5	329	0.045	25.2
BZT52C39	37.05	39.00	40.95	2	130	0.5	329	0.045	27.3
BZT52C43	40.85	43.00	45.15	2	150	0.5	353	0.045	30.1
BZT52C47	44.65	47.00	49.35	2	170	0.5	353	0.045	33.0
BZT52C51	48.45	51.00	53.55	2	180	0.5	376	0.045	35.7
BZT52C56	53.20	56.00	58.80	2	200	0.5	400	0.045	39.2
BZT52C62	58.90	62.00	65.10	2	215	0.5	423	0.045	43.4
BZT52C68	64.60	68.00	71.40	2	240	0.5	447	0.045	47.6
BZT52C75	71.25	75.00	78.75	2	255	0.5	470	0.045	52.5

Notes : 1. The Zener voltage (V_Z) is tested under pulse condition of 10ms.

2. The device numbers listed have a standard tolerance on the normal Zener voltage of $\pm 5\%$.

3. The Zener impedance is derived from the 60-cycle AC voltage, which results when an AC current having an RMS value equal to 10% of the DC Zener current(I_{ZT} or I_{ZK}) is superimposed to I_{ZT} or I_{ZK}.

ZENER DIODE

TYPICAL CHARACTERISTICS

Fig. 1 Typical Forward Characteristics

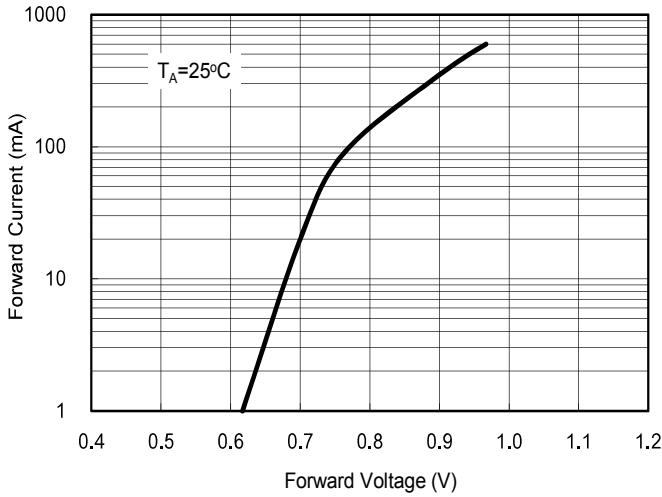


Fig. 2 Zener Breakdown Characteristics

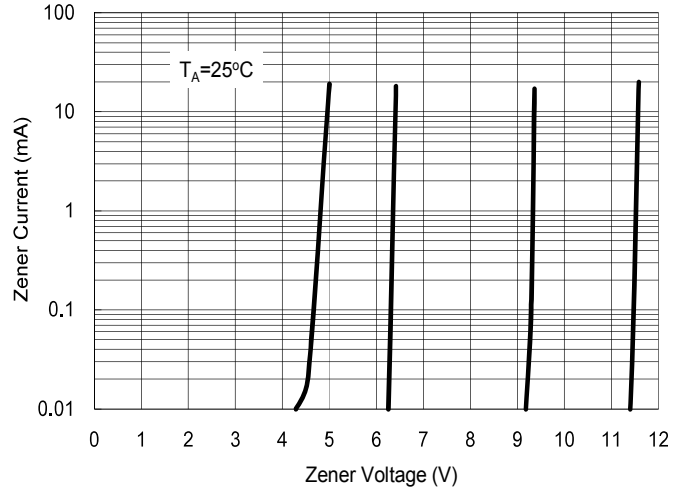


Fig. 3 Zener Breakdown Characteristics

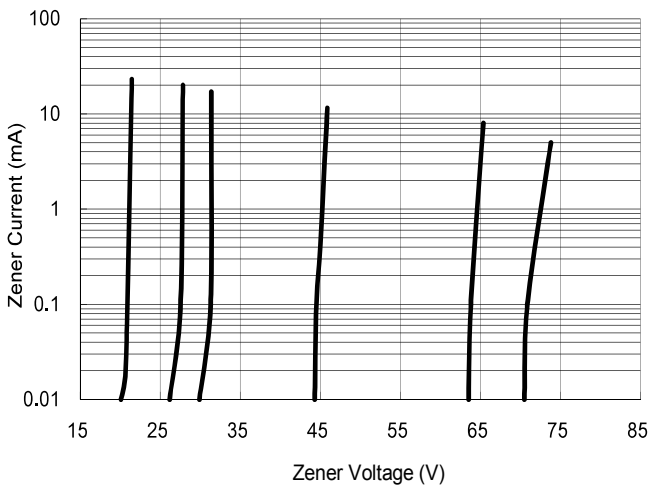


Fig. 4 Power Dissipation Curve

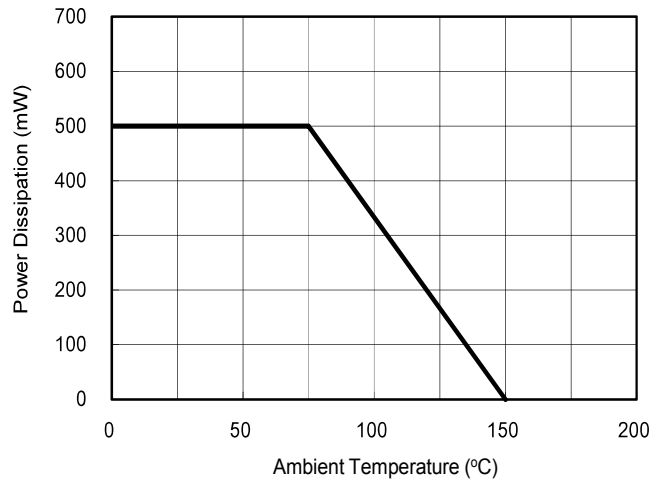


Fig. 5 Typical Capacitance

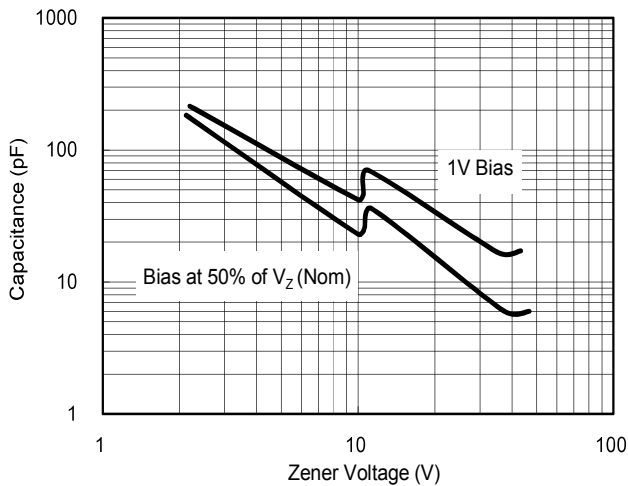
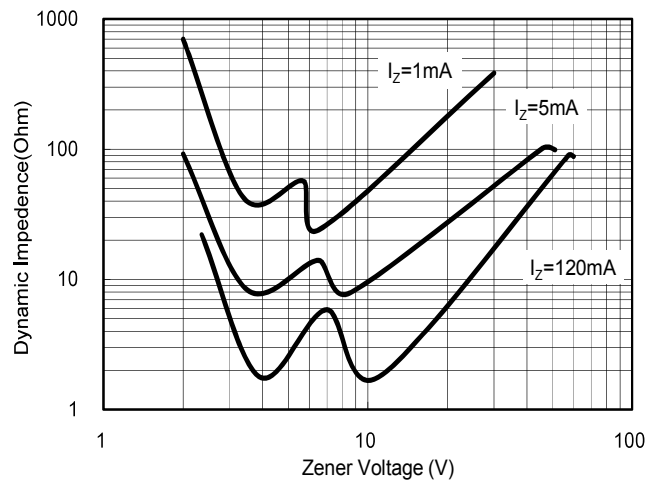
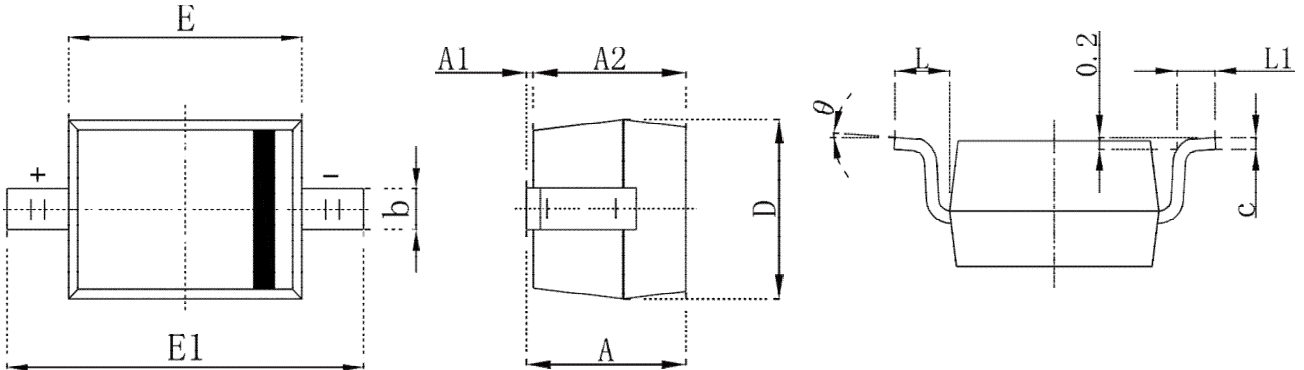


Fig. 6 Effect of Zener Voltage on Impedance



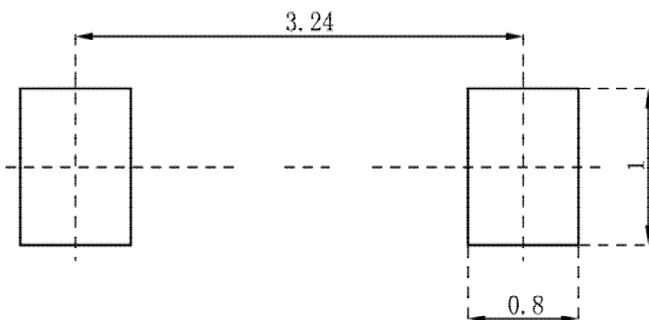
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SOD-123 Package Outline Dimensions



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	0.500REF		0.020 REF	
L1	0.250	0.450	0.010	0.018
θ	0°	8°	0°	8°

SOD-123 Suggested Pad Layout



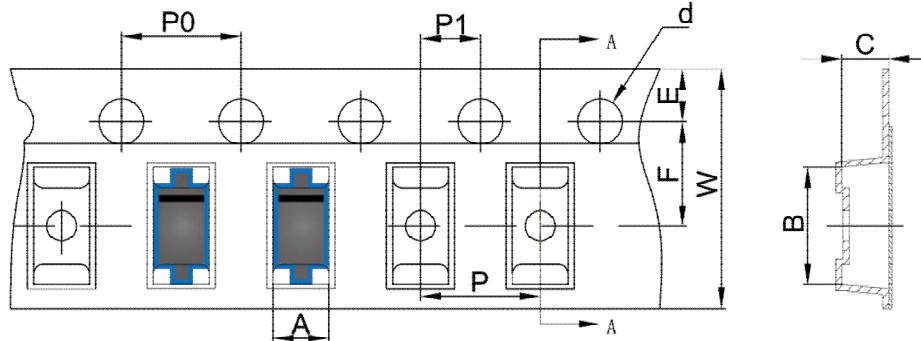
Note:

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

ZENER DIODE

SOD-123 Tape and Reel

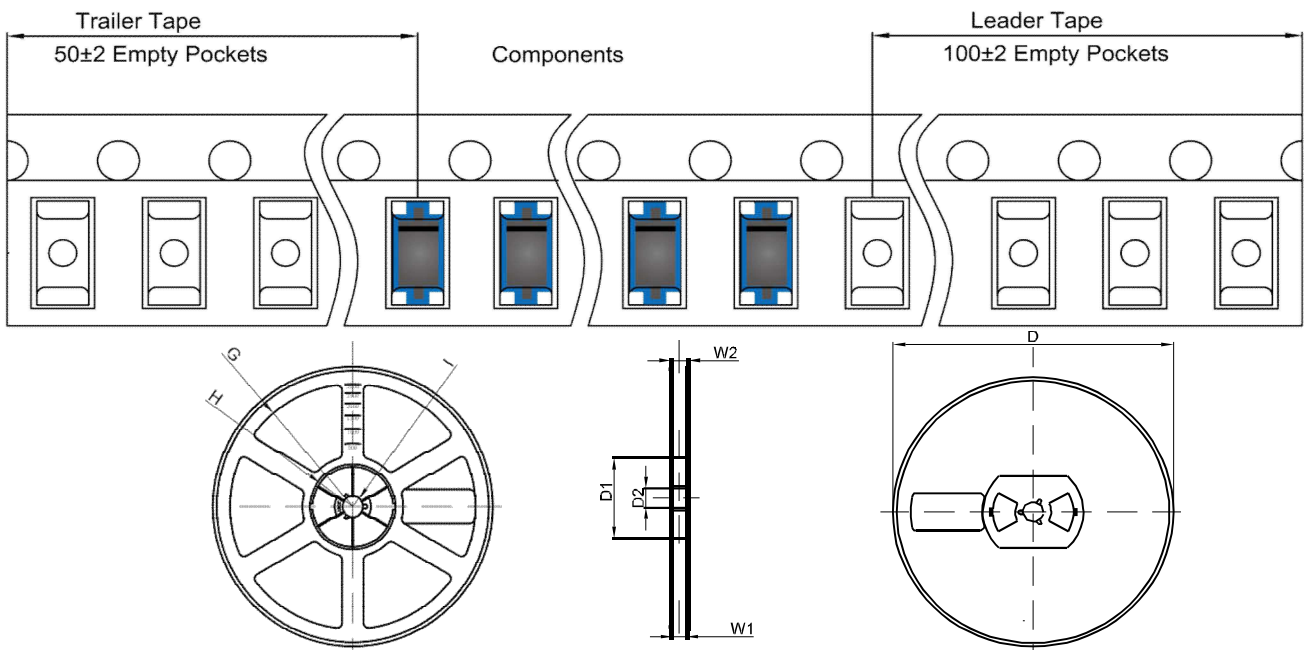
SOD-123 Embossed Carrier Tape



SOD-123 Tape Leader and Trailer

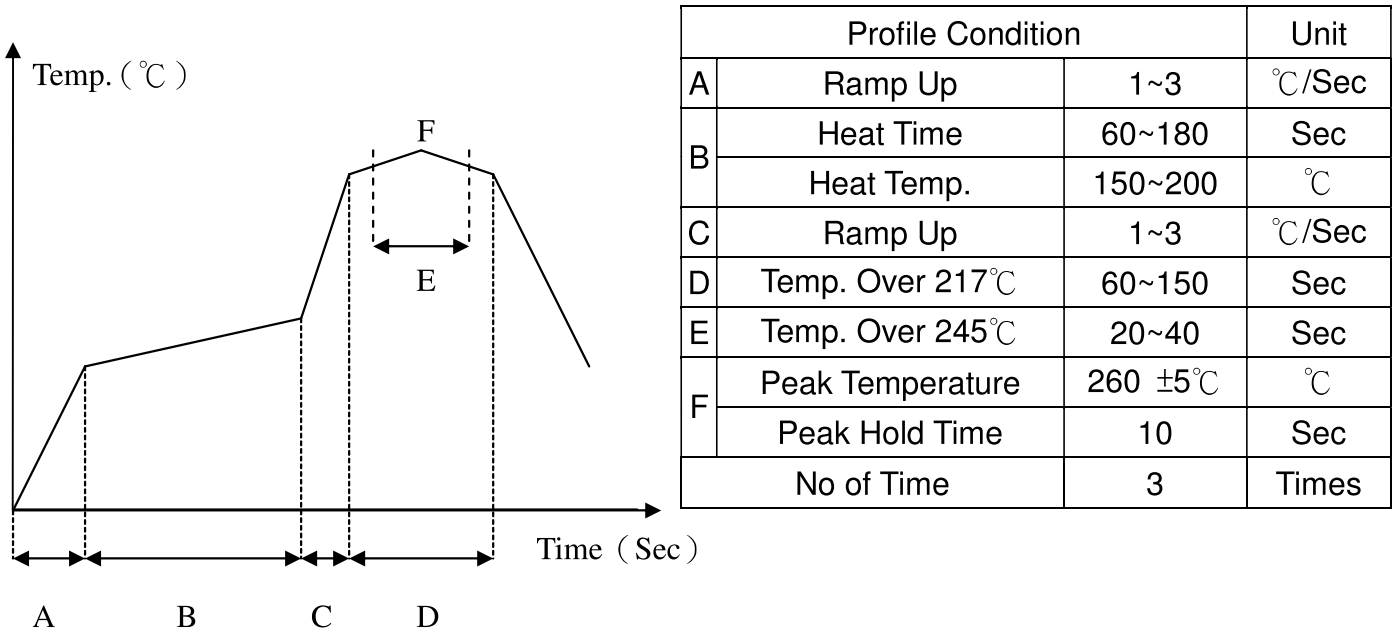
DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOD-123	1.85	3.95	1.57	Ø1.55	1.75	3.50	4.00	4.00	2.00	8.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

SOD-123 Reel



DIMENSIONS ARE IN MILLIMETER								
REEL OPTION	D	D1	D2	G	H	I	W1	W2
7" DIA	Ø178	54.40	13.00	R78	R25.60	R6.50	9.50	12.30
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1

1.Re-Flow Heat-resisting Temperature Condition



2.Dip Soldering

Flow soldering with bath

Flow soldering condition : 260 +5/-5°C 10±0.5 Sec.

Times: 3 times

3.Hand Soldering

With soldering iron : 380°C 3±0.5 Sec

Times: 2 times