

## SOD123 Plastic-Encapsulate Diodes

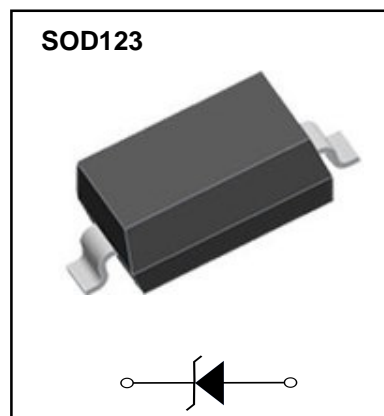
### Zener Diodes

#### Features

- $P_d$  500mW
- $V_z$  2.4V- 43V

#### Applications

- Stabilizing Voltage



#### Limiting Values (Absolute Maximum Rating)

Item	Symbol	Unit	Conditions	Max
Power dissipation	$P_d$	mW	$T_A=25^\circ\text{C}$	500
Zener current	$I_z$	mA		$P_v / V_z$
Maximum junction temperature	$T_j$	$^\circ\text{C}$		-65 to +150
Storage temperature range	$T_{stg}$	$^\circ\text{C}$		-65 to +150

#### Electrical Characteristics ( $T_A=25^\circ\text{C}$ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Max
Thermal resistance	$R_{\theta JA}$	$^\circ\text{C}/\text{W}$	Between junction and ambient	340
Forward voltage	$V_F$	V	$I_F = 10\text{mA}$	0.9

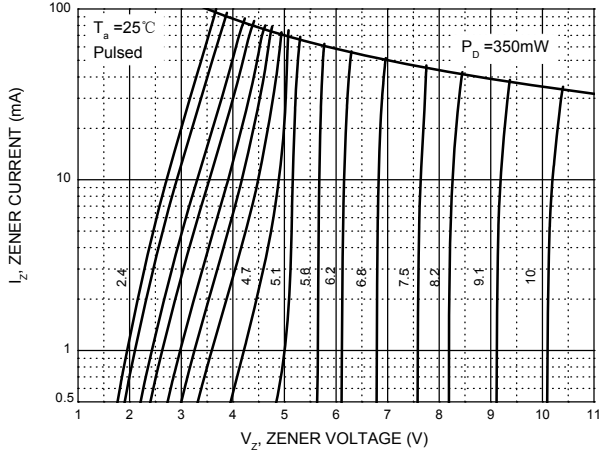
## Electrical Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Type	Marking Code	Zener Voltage Range <sup>1)</sup>			Dynamic Impedance				Reverse Leakage Current	
		$V_{znom}$	$V_{ZT}$	at $I_{ZT}$	$Z_{ZT}$	at $I_{ZT}$	$Z_{ZK}$	at $I_{ZK}$	$I_R$	at $V_R$
		V	V	mA	Max. ( $\Omega$ )	mA	Max. ( $\Omega$ )	mA	Max. ( $\mu\text{A}$ )	V
BZT52C2V4	WX	2.4	2.2...2.6	5	100	5	600	1	50	1
BZT52C2V7	W1	2.7	2.5...2.9	5	100	5	600	1	20	1
BZT52C3V0	W2	3.0	2.8...3.2	5	95	5	600	1	10	1
BZT52C3V3	W3	3.3	3.1...3.5	5	95	5	600	1	5	1
BZT52C3V6	W4	3.6	3.4...3.8	5	90	5	600	1	5	1
BZT52C3V9	W5	3.9	3.7...4.1	5	90	5	600	1	3	1
BZT52C4V3	W6	4.3	4...4.6	5	90	5	600	1	3	1
BZT52C4V7	W7	4.7	4.4...5	5	80	5	500	1	3	2
BZT52C5V1	W8	5.1	4.8...5.4	5	60	5	480	1	2	2
BZT52C5V6	W9	5.6	5.2...6	5	40	5	400	1	1	2
BZT52C6V2	WA	6.2	5.8...6.6	5	10	5	150	1	3	4
BZT52C6V8	WB	6.8	6.4...7.2	5	15	5	80	1	2	4
BZT52C7V5	WC	7.5	7...7.9	5	15	5	80	1	1	5
BZT52C8V2	WD	8.2	7.7...8.7	5	15	5	80	1	0.7	5
BZT52C9V1	WE	9.1	8.5...9.6	5	15	5	100	1	0.5	6
BZT52C10	WF	10	9.4...10.6	5	20	5	150	1	0.2	7
BZT52C11	WG	11	10.4...11.6	5	20	5	150	1	0.1	8
BZT52C12	WH	12	11.4...12.7	5	25	5	150	1	0.1	8
BZT52C13	WI	13	12.4...14.1	5	30	5	170	1	0.1	8
BZT52C15	WJ	15	13.8...15.6	5	30	5	200	1	0.1	10.5
BZT52C16	WK	16	15.3...17.1	5	40	5	200	1	0.1	11.2
BZT52C18	WL	18	16.8...19.1	5	45	5	225	1	0.1	12.6
BZT52C20	WM	20	18.8...21.2	5	55	5	225	1	0.1	14
BZT52C22	WN	22	20.8...23.3	5	55	5	250	1	0.1	15.4
BZT52C24	WO	24	22.8...25.6	5	70	5	250	1	0.1	16.8
BZT52C27	WP	27	25.1...28.9	2	80	2	300	0.5	0.1	18.9
BZT52C30	WQ	30	28...32	2	80	2	300	0.5	0.1	21
BZT52C33	WR	33	31...35	2	80	2	325	0.5	0.1	23.1
BZT52C36	WS	36	34...38	2	90	2	350	0.5	0.1	25.2
BZT52C39	WT	39	37...41	2	130	2	350	0.5	0.1	27.3
BZT52C43	WU	43	40...46	2.5	130	2	500	1	2	33

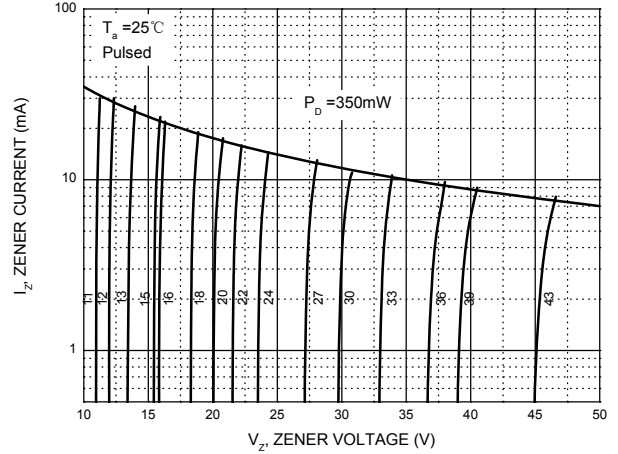
<sup>1)</sup>  $V_{ZT}$  is tested with pulses (20 ms).

# Typical Characteristics

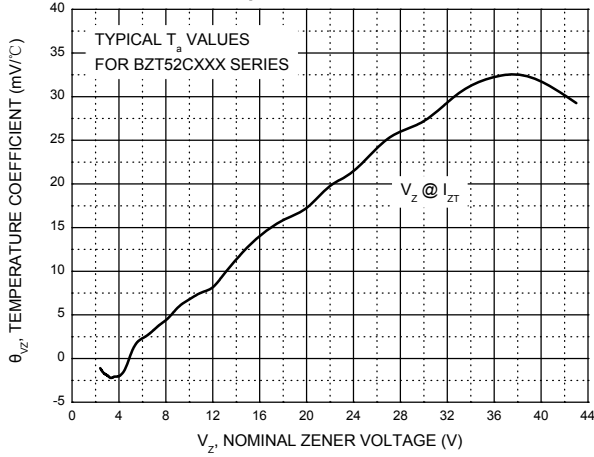
Zener Characteristics ( $V_z$  Up to 10 V)



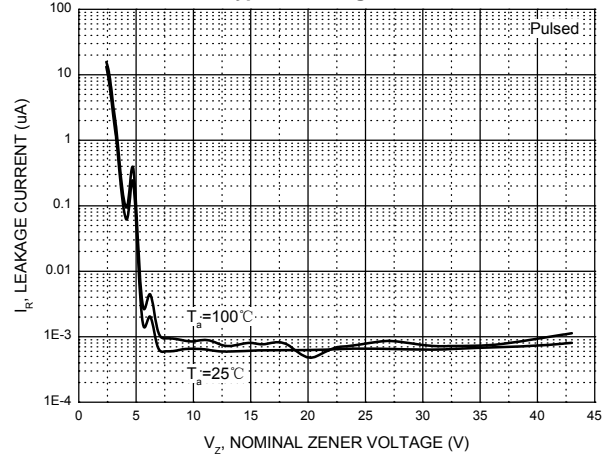
Zener Characteristics (11 V to 43 V)



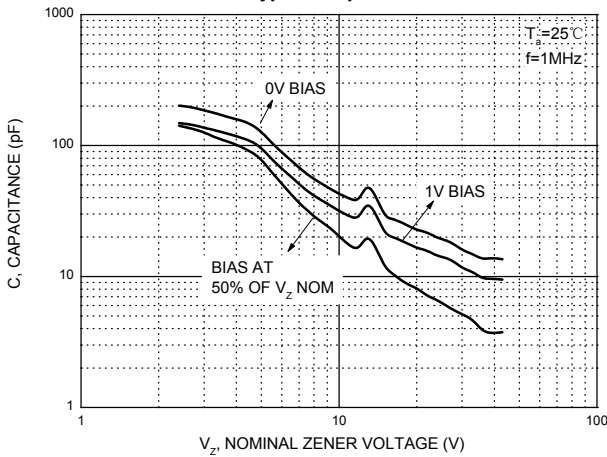
Temperature Coefficients



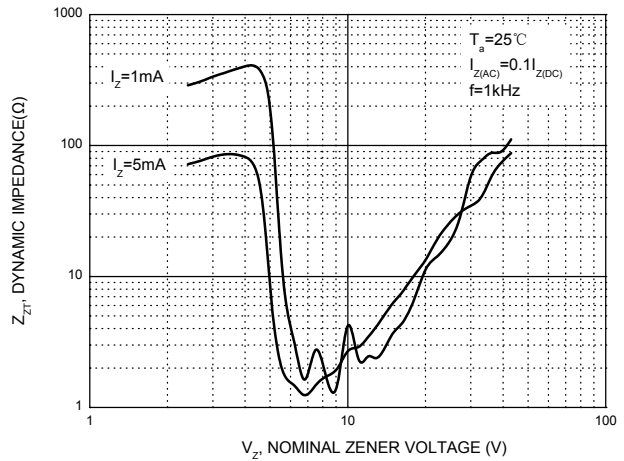
Typical Leakage Current



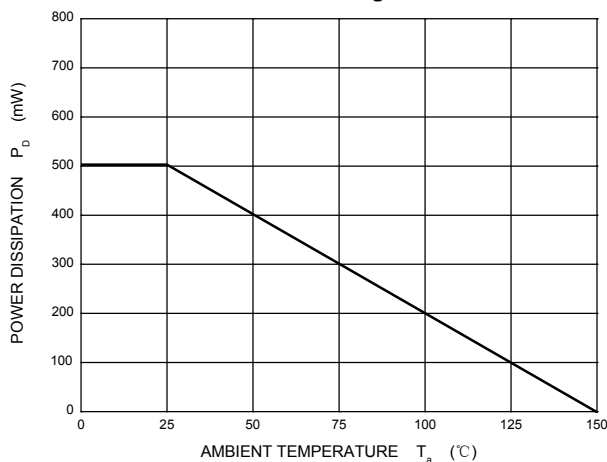
Typical Capacitance



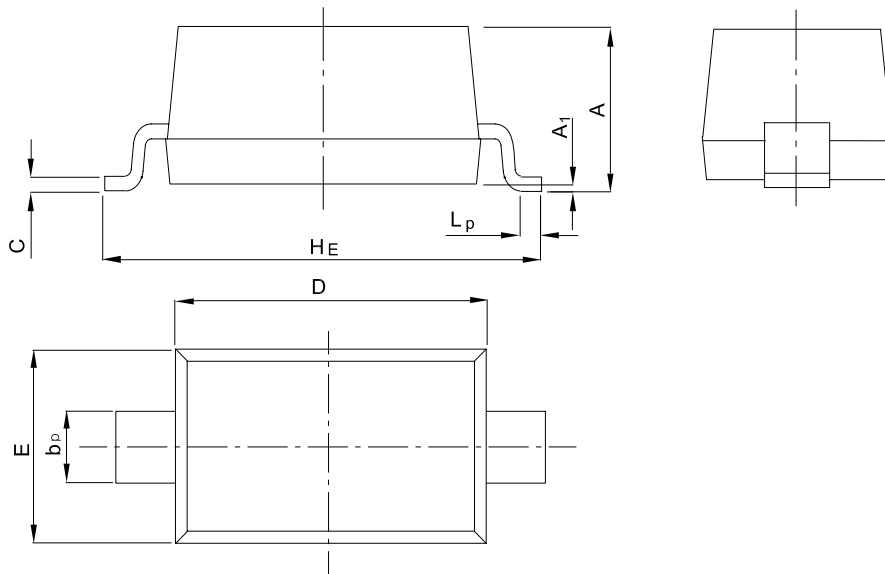
Effect of Zener Voltage on Zener Impedance



Power Derating Curve

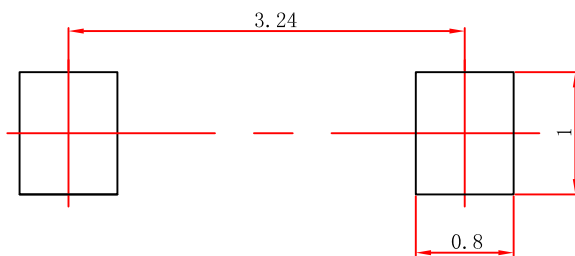


## SOD-123 Package Outline Dimensions



UNIT	A	bp	C	D	E	HE	A1	Lp
mm	1.20 0.90	0.60 0.50	0.135 0.100	2.75 2.55	1.65 1.55	3.85 3.55	0.10 0.01	0.50 0.20

## SOD-123 Suggested Pad Layout



### Note:

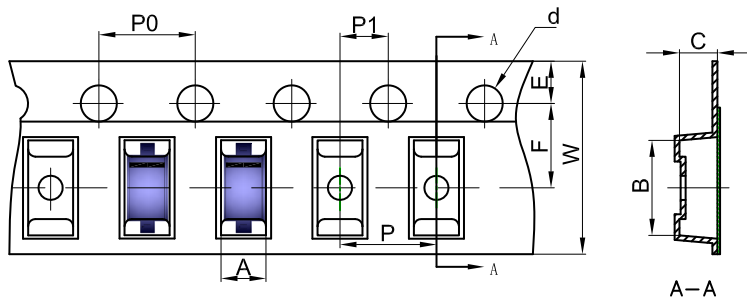
1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05$  mm.
3. The pad layout is for reference purposes only.

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# Reel Taping Specifications For Surface Mount Devices-SOD123

## SOD-123 Embossed Carrier Tape



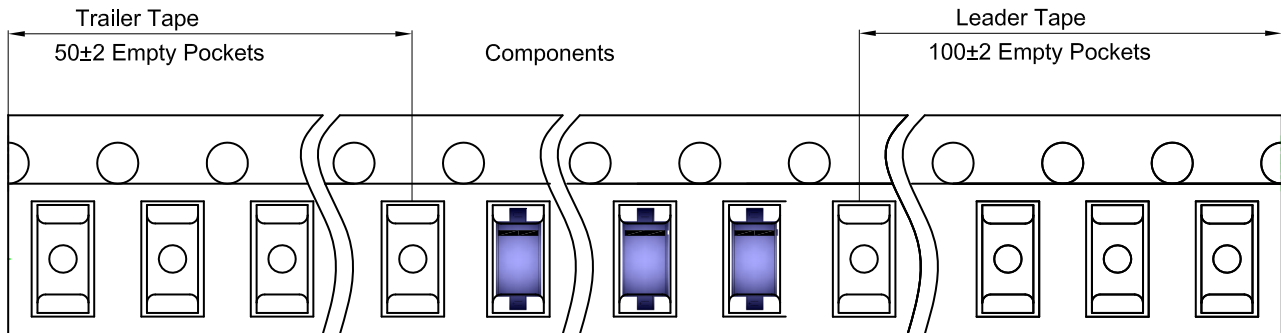
### Packaging Description:

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).

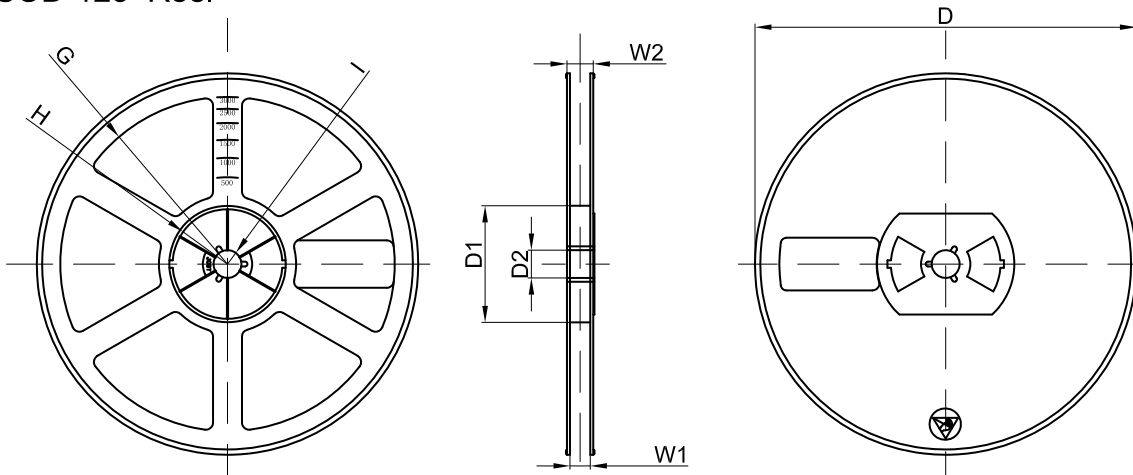
Dimensions are in millimeter

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	

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