



**THE DATASHEET OF  
BZX584C3V0**



ZENER DIODE

**FEATURES**

- Planar Die Construction
- Zener Voltages from 2.4 – 43V

SOD-523



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

Characteristic	Symbol	Value	Unit
Forward Voltage @ $I_F=10\text{mA}$	$V_F$	0.9	V
Power Dissipation	$P_D$	200	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	833	$^{\circ}\text{C}/\text{W}$
Junction Temperature	$T_j$	-55~+150	$^{\circ}\text{C}$
Storage Temperature	$T_{stg}$	-55~+150	$^{\circ}\text{C}$

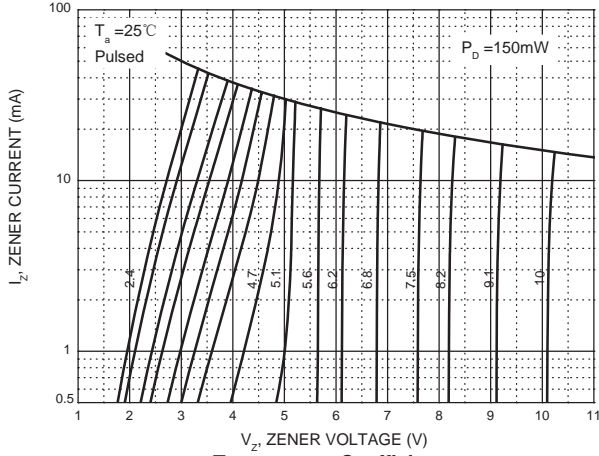
## ELECTRICAL CHARACTERISTICS $T_a=25^{\circ}\text{C}$ unless otherwise specified

Type Number	Type Code	Zener Voltage Range (Note 2)				Maximum Zener Impedance (Note 3)			Maximum Reverse Current		Typical temperature coefficient @ $I_{ZT}$ mV/ $^{\circ}\text{C}$	
		$V_Z@I_{ZT}$			$I_{ZT}$	$Z_{ZT}@I_{ZT}$	$Z_{ZK}@I_{ZK}$		$I_R$	$V_R$	Min	Max
		Nom(V)	Min(V)	Max(V)	(mA)	( $\Omega$ )	(mA)	( $\mu\text{A}$ )	(V)			
BZX584C2V4	50	2.4	2.20	2.60	5	100	600	1.0	50	1.0	-3.5	0
BZX584C2V7	51	2.7	2.5	2.9	5	100	600	1.0	20	1.0	-3.5	0
BZX584C3V0	52	3.0	2.8	3.2	5	95	600	1.0	10	1.0	-3.5	0
BZX584C3V3	53	3.3	3.1	3.5	5	95	600	1.0	5	1.0	-3.5	0
BZX584C3V6	54	3.6	3.4	3.8	5	90	600	1.0	5	1.0	-3.5	0
BZX584C3V9	55	3.9	3.7	4.1	5	90	600	1.0	3	1.0	-3.5	0
BZX584C4V3	56	4.3	4.0	4.6	5	90	600	1.0	3	1.0	-3.5	0
BZX584C4V7	57	4.7	4.4	5.0	5	80	500	1.0	3	2.0	-3.5	0.2
BZX584C5V1	58	5.1	4.8	5.4	5	60	480	1.0	2	2.0	-2.7	1.2
BZX584C5V6	59	5.6	5.2	6.0	5	40	400	1.0	1	2.0	-2.0	2.5
BZX584C6V2	5A	6.2	5.8	6.6	5	10	150	1.0	3	4.0	0.4	3.7
BZX584C6V8	5B	6.8	6.4	7.2	5	15	80	1.0	2	4.0	1.2	4.5
BZX584C7V5	5C	7.5	7.0	7.9	5	15	80	1.0	1	5.0	2.5	5.3
BZX584C8V2	5D	8.2	7.7	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2
BZX584C9V1	5E	9.1	8.5	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0
BZX584C10	5F	10	9.4	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0
BZX584C11	5G	11	10.4	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0
BZX584C12	5H	12	11.4	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0
BZX584C13	5J	13	12.4	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0
BZX584C15	5K	15	13.8	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0
BZX584C16	5L	16	15.3	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0
BZX584C18	5M	18	16.8	19.1	5	45	225	1.0	0.1	12.6	12.4	16.0
BZX584C20	5N	20	18.8	21.2	5	55	225	1.0	0.1	14.0	14.4	18.0
BZX584C22	5P	22	20.8	23.3	5	55	250	1.0	0.1	15.4	16.4	20.0
BZX584C24	5R	24	22.8	25.6	5	70	250	1.0	0.1	16.8	18.4	22.0
BZX584C27	5S	27	25.1	28.9	2	80	300	0.5	0.1	18.9	21.4	25.3
BZX584C30	5T	30	28.0	32.0	2	80	300	0.5	0.1	21.0	24.4	29.4
BZX584C33	5U	33	31.0	35.0	2	80	325	0.5	0.1	23.1	27.4	33.4
BZX584C36	5V	36	34.0	38.0	2	90	350	0.5	0.1	25.2	30.4	37.4
BZX584C39	5X	39	37.0	41.0	2	130	350	0.5	0.1	27.3	33.4	41.2
BZX584C43	5Y	43	40.0	46.0	2	100	700	1	0.1	32	10	12

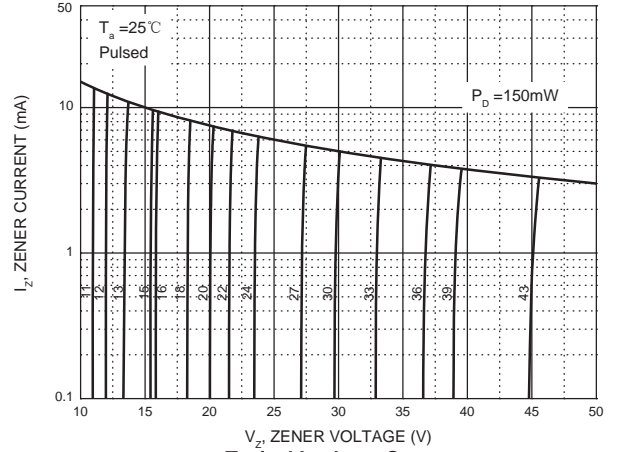
- Notes: 1. Valid provided that device terminals are kept at ambient temperature.  
 2. Tested with pulses, period=5ms, pulse width =300 $\mu\text{s}$ .  
 3. f = 1 kHz.

# RATING AND CHARACTERISTICS CURVES (BZX584C SERIES)

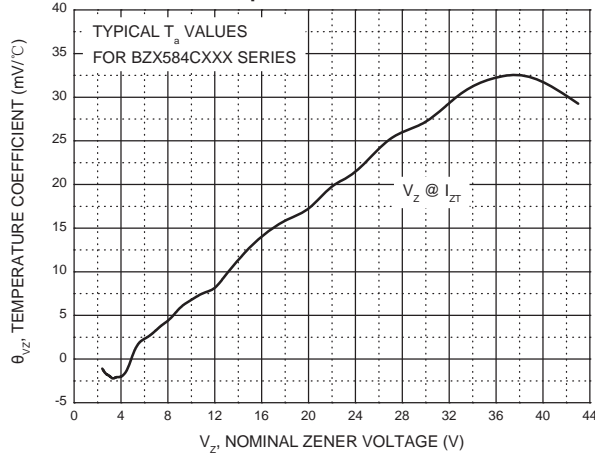
Zener Characteristics ( $V_z$  Up to 10 V)



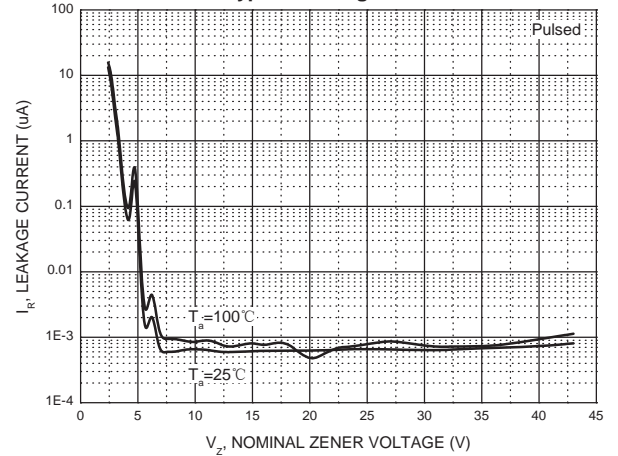
Zener Characteristics (11 V to 43 V)



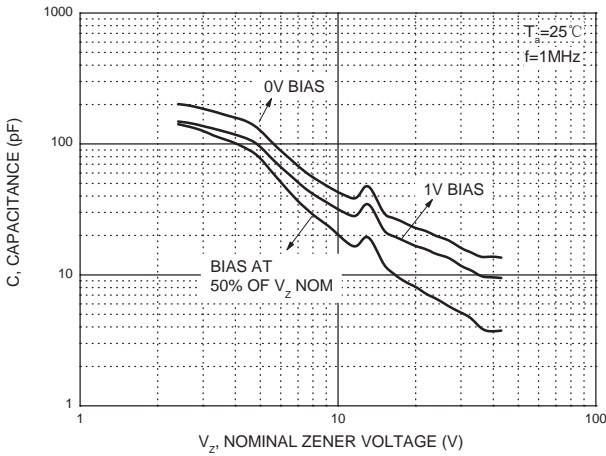
Temperature Coefficients



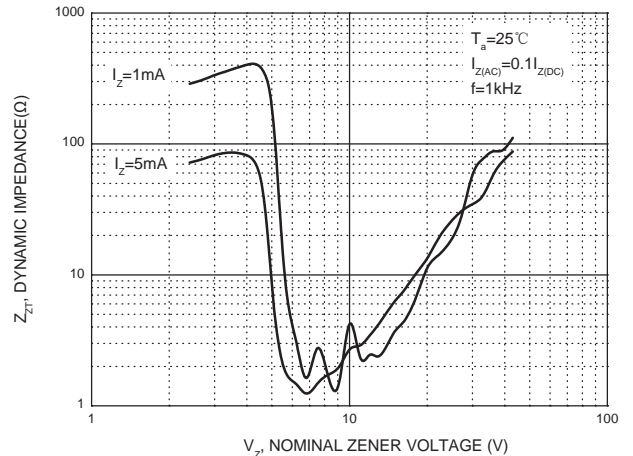
Typical Leakage Current



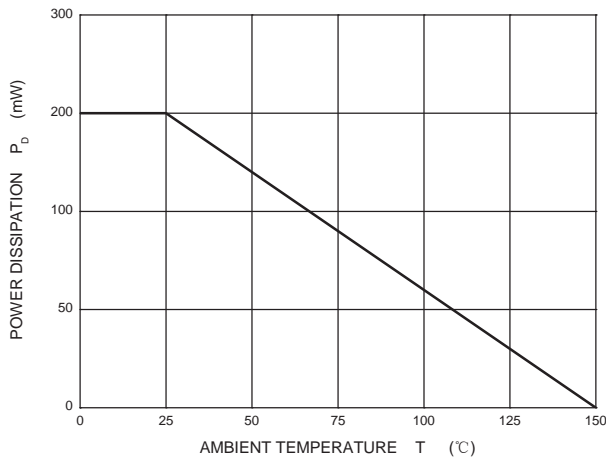
Typical Capacitance



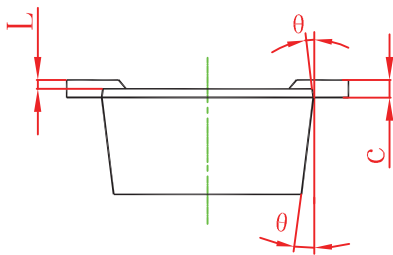
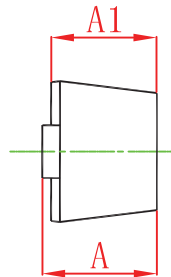
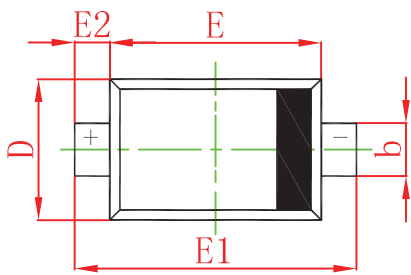
Effect of Zener Voltage on Zener Impedance



Power Derating Curve

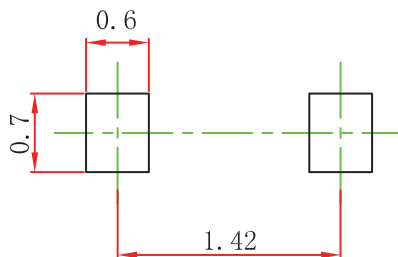


## SOD-523 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.510	0.770	0.020	0.031
A1	0.500	0.700	0.020	0.028
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	0.750	0.850	0.030	0.033
E	1.100	1.300	0.043	0.051
E1	1.500	1.700	0.059	0.067
E2	0.200 REF		0.008 REF	
L	0.010	0.070	0.001	0.003
θ	7° REF		7° REF	

## SOD-523 Suggested Pad Layout

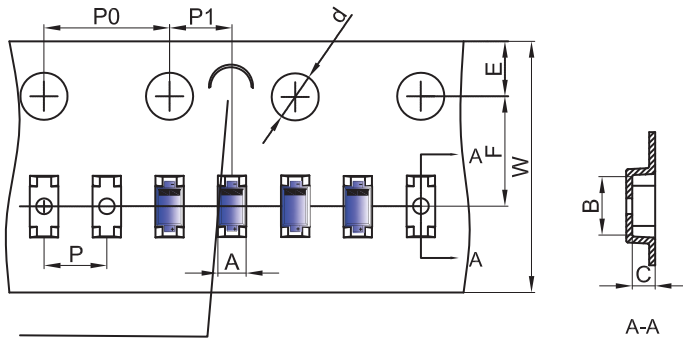


### Note:

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

# SOD-523 Tape and Reel

## SOD-523 Embossed Carrier Tape

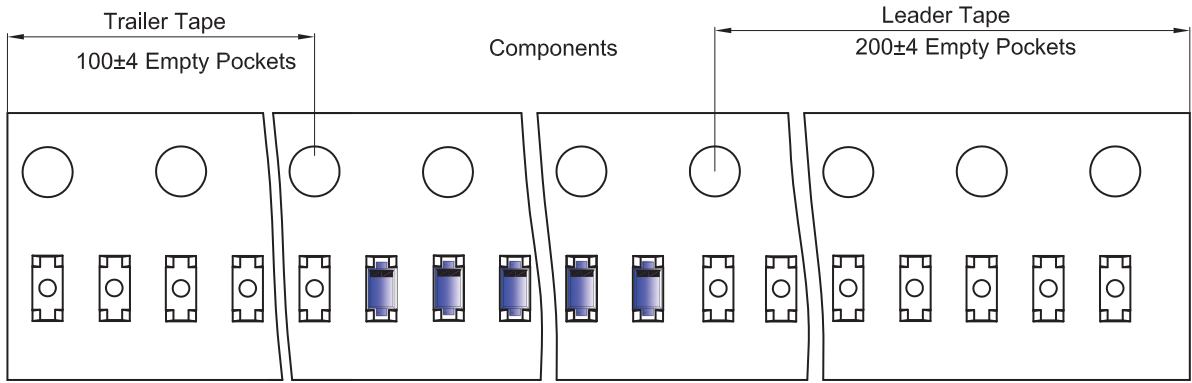


NOTE: TO CAVE 'C' ON CARRIER TAPE PER 120MM

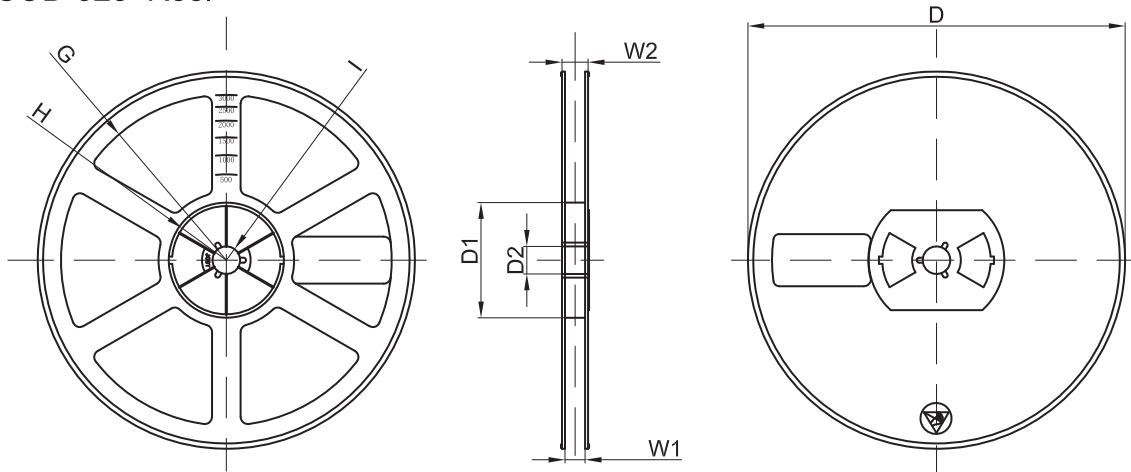
**Packaging Description:**  
 SOD-523 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 8,000 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-523	0.9	1.94	0.73	Ø1.50	1.75	3.50	4.00	2.00	2.00	8.00	

## SOD-523 Tape Leader and Trailer



## SOD-523 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)
8000 pcs	7 inch	120,000 pcs	203×203×195	480,000 pcs	438×438×220	

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