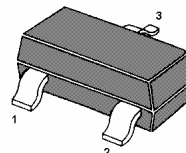
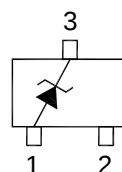


SILICON PLANAR ZENER DIODES

This series of Zener diodes is offered in the convenient, surface mount plastic SOT-23 package. These devices are designed to provide voltage regulation with minimum space requirement. They are well suited for applications such as cellular phones, hand held portables, and high density PC boards.



1. Anode 3. Cathode
SOT-23 Plastic Package

Features

- Zener breakdown voltage range – 2.0 V to 75 V
- Package designed for optimal automated board assembly
- Small package size for high density applications

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	350	mW
Thermal Resistance, Junction to Ambient ¹⁾	$R_{\theta JA}$	417	$^\circ\text{C/W}$
Junction and Storage Temperature Range	T_j, T_s	- 65 to + 150	$^\circ\text{C}$

¹⁾ Alumina = 0.4 X 0.3 X 0.024 in, 99.5% alumina

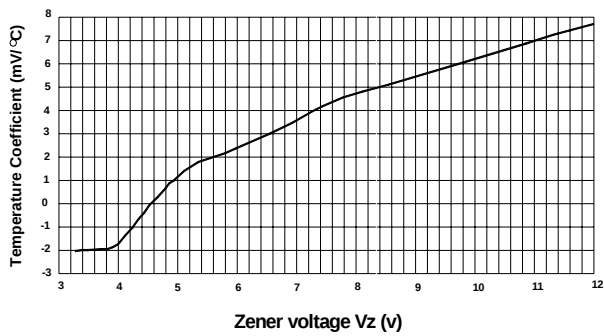
**Electrical Characteristics** ($T_a = 25\text{ }^{\circ}\text{C}$ unless otherwise noted, $V_F < 0.9\text{ V}$ at $I_F = 10\text{ mA}$)

Type	Marking Code	$V_{Z1}\text{ (V)}$ @ $I_{ZT1} = 5\text{ mA}^{1)}$			$Z_{ZT1}\text{ (}\Omega\text{)}$ @ $I_{ZT1} = 5\text{ mA}$	$V_{Z2}\text{ (V)}$ @ $I_{ZT2} = 1\text{ mA}^{1)}$		$Z_{ZT2}\text{ (}\Omega\text{)}$ @ $I_{ZT2} = 1\text{ mA}^{2)}$	$V_{Z3}\text{ (V)}$ @ $I_{ZT3} = 20\text{ mA}^{1)}$		$Z_{ZT3}\text{ (}\Omega\text{)}$ @ $I_{ZT3} = 20\text{ mA}$	Maximum Reverse Leakage Current	
		Min.	Nom.	Max.		Min.	Max.		Min.	Max.		I_R μA	V_R V
BZX84C2V0	A8	1.8	2.0	2.15	100	-	-	-	-	-	-	120	0.5
BZX84C2V2	B8	2.08	2.2	2.33	100	-	-	-	-	-	-	120	0.7
BZX84C2V4	C8	2.2	2.4	2.6	100	1.7	2.1	600	2.6	3.2	50	50	1
BZX84C2V7	D8	2.5	2.7	2.9	100	1.9	2.4	600	3	3.6	50	20	1
BZX84C3V0	E8	2.8	3	3.2	95	2.1	2.7	600	3.3	3.9	50	10	1
BZX84C3V3	F8	3.1	3.3	3.5	95	2.3	2.9	600	3.6	4.2	40	5	1
BZX84C3V6	H8	3.4	3.6	3.8	90	2.7	3.3	600	3.9	4.5	40	5	1
BZX84C3V9	J8	3.7	3.9	4.1	90	2.9	3.5	600	4.1	4.7	30	3	1
BZX84C4V3	K8	4	4.3	4.6	90	3.3	4	600	4.4	5.1	30	3	1
BZX84C4V7	M8	4.4	4.7	5	80	3.7	4.7	500	4.5	5.4	15	3	2
BZX84C5V1	N8	4.8	5.1	5.4	60	4.2	5.3	480	5	5.9	15	2	2
BZX84C5V6	P8	5.2	5.6	6	40	4.8	6	400	5.2	6.3	10	1	2
BZX84C6V2	R8	5.8	6.2	6.6	10	5.6	6.6	150	5.8	6.8	6	3	4
BZX84C6V8	X8	6.4	6.8	7.2	15	6.3	7.2	80	6.4	7.4	6	2	4
BZX84C7V5	Y8	7	7.5	7.9	15	6.9	7.9	80	7	8	6	1	5
BZX84C8V2	Z8	7.7	8.2	8.7	15	7.6	8.7	80	7.7	8.8	6	0.7	5
BZX84C9V1	A9	8.5	9.1	9.6	15	8.4	9.6	100	8.5	9.7	8	0.5	6
BZX84C10	B9	9.4	10	10.6	20	9.3	10.6	150	9.4	10.7	10	0.2	7
BZX84C11	C9	10.4	11	11.6	20	10.2	11.6	150	10.4	11.8	10	0.1	8
BZX84C12	D9	11.4	12	12.7	25	11.2	12.7	150	11.4	12.9	10	0.1	8
BZX84C13	E9	12.4	13	14.1	30	12.3	14	170	12.5	14.2	15	0.1	8
BZX84C15	F9	14.3	15	15.8	30	13.7	15.5	200	13.9	15.7	20	0.05	10.5
BZX84C16	H9	15.3	16	17.1	40	15.2	17	200	15.4	17.2	20	0.05	11.2
BZX84C18	J9	16.8	18	19.1	45	16.7	19	225	16.9	19.2	20	0.05	12.6
BZX84C20	K9	18.8	20	21.2	55	18.7	21.1	225	18.9	21.4	20	0.05	14
BZX84C22	M9	20.8	22	23.3	55	20.7	23.2	250	20.9	23.4	25	0.05	15.4
BZX84C24	N9	22.8	24	25.6	70	22.7	25.5	250	22.9	25.7	25	0.05	16.8
Type	Marking Code	$V_{Z1}\text{ Below}$ @ $I_{ZT1} = 2\text{ mA}$			$Z_{ZT1}\text{ Below}$ @ $I_{ZT1} = 2\text{ mA}$	$V_{Z2}\text{ Below}$ @ $I_{ZT2} = 0.1\text{ mA}$		$Z_{ZT2}\text{ Below}$ @ $I_{ZT2} = 0.5\text{ mA}^{2)}$	$V_{Z3}\text{ Below}$ @ $I_{ZT3} = 10\text{ mA}$		$Z_{ZT3}\text{ Below}$ @ $I_{ZT3} = 10\text{ mA}$	Maximum Reverse Leakage Current	
		Min.	Nom.	Max.		Min.	Max.		Min.	Max.		I_R μA	V_R V
BZX84C27	P9	25.1	27	28.9	80	25	28.9	300	25.2	29.3	45	0.05	18.9
BZX84C30	R9	28	30	32	80	27.8	32	300	28.1	32.4	50	0.05	21
BZX84C33	X9	31	33	35	80	30.8	35	325	31.1	35.4	55	0.05	23.1
BZX84C36	Y9	34	36	38	90	33.8	38	350	34.1	38.4	60	0.05	25.2
BZX84C39	Z9	37	39	41	130	36.7	41	350	37.1	41.5	70	0.05	27.3
BZX84C43	A0	40	43	46	150	39.7	46	375	40.1	46.5	80	0.05	30.1
BZX84C47	B0	44	47	50	170	43.7	50	375	44.1	50.5	90	0.05	32.9
BZX84C51	C0	48	51	54	180	47.6	54	400	48.1	54.6	100	0.05	35.7
BZX84C56	D0	52	56	60	200	51.5	60	425	52.1	60.8	110	0.05	39.2
BZX84C62	E0	58	62	66	215	57.4	66	450	58.2	67	120	0.05	43.4
BZX84C68	F0	64	68	72	240	63.4	72	475	64.2	73.2	130	0.05	47.6
BZX84C75	H0	70	75	79	255	69.4	79	500	70.3	80.2	140	0.05	52.5

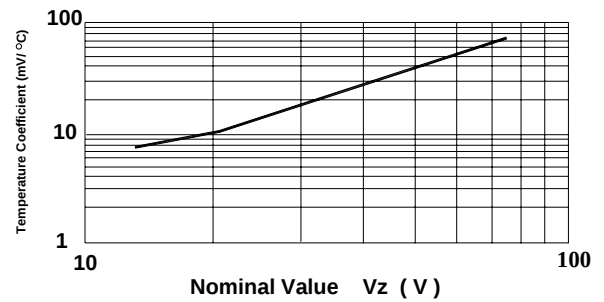
¹⁾ Tested with pulses $t_p = 20\text{ ms}$.²⁾ The Zener impedance, Z_{ZT2} , for the 27 through 75 volt types is tested at 0.5 mA rather than the test current of 0.1 mA used for V_{Z2}



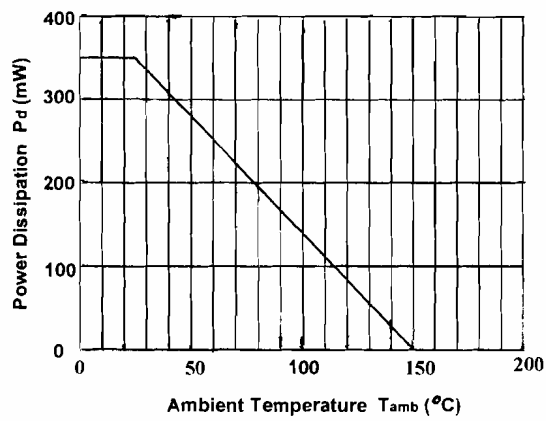
Temperature Coefficient



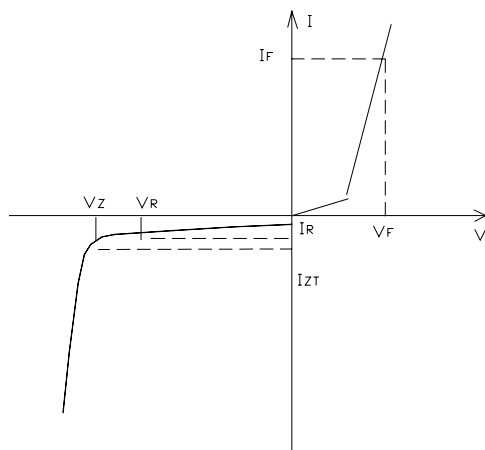
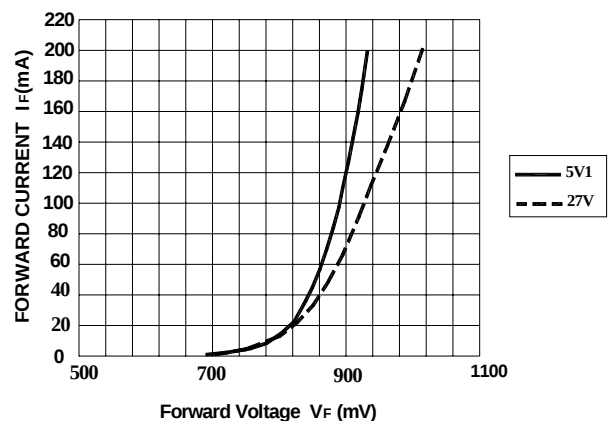
Temperature Coefficient



Power Derating Curve

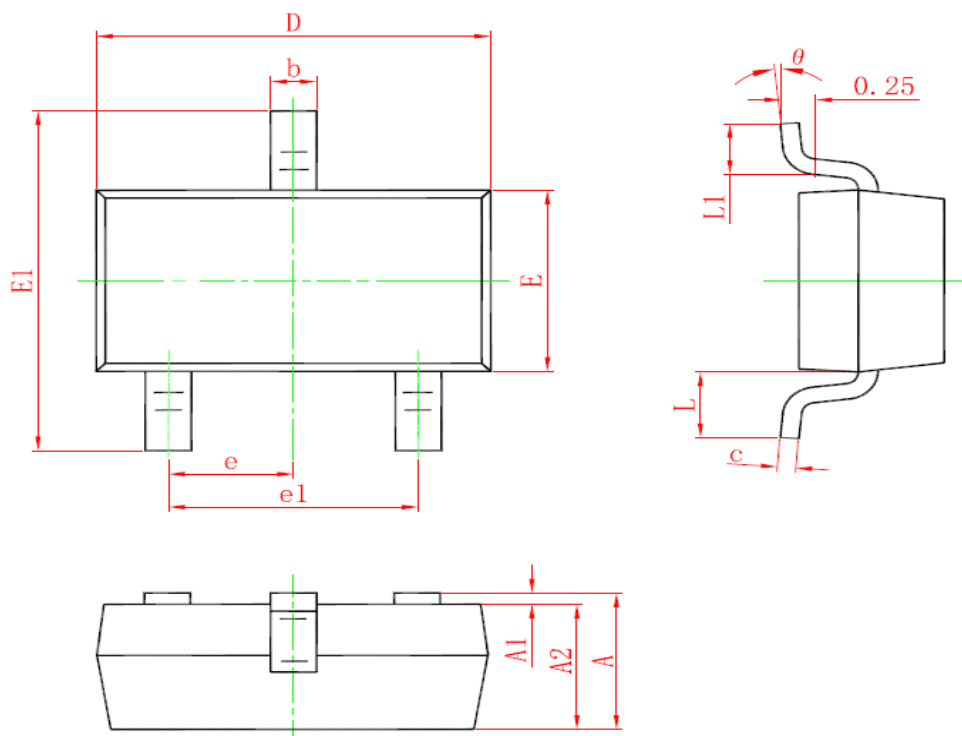


Typical Forward Voltage



Zener Voltage Regulator

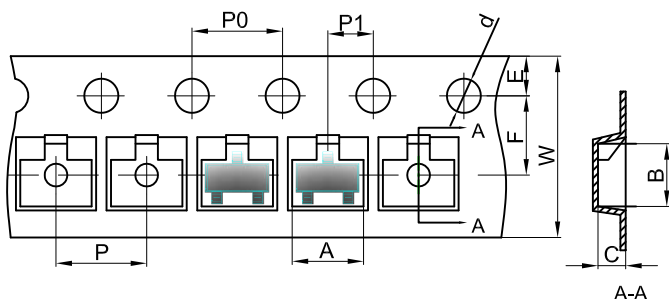
Package Outline Dimensions (Units: mm)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.079
θ	0°	8°	0°	8°

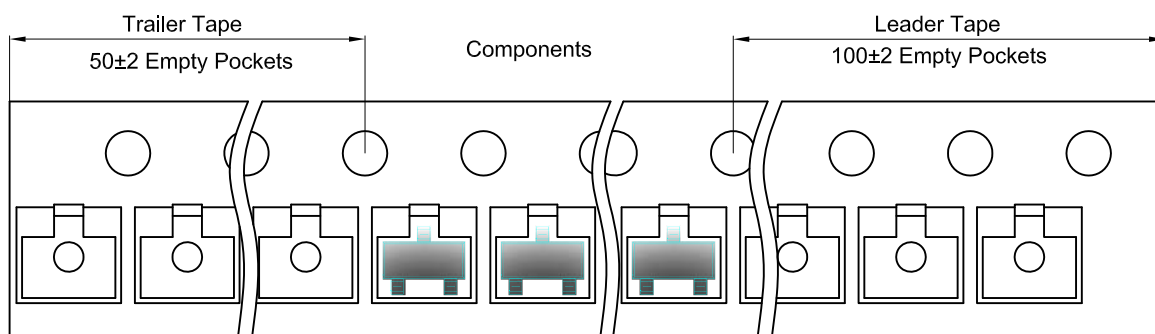
SOT-23 Tape and Reel

SOT-23 Embossed Carrier Tape

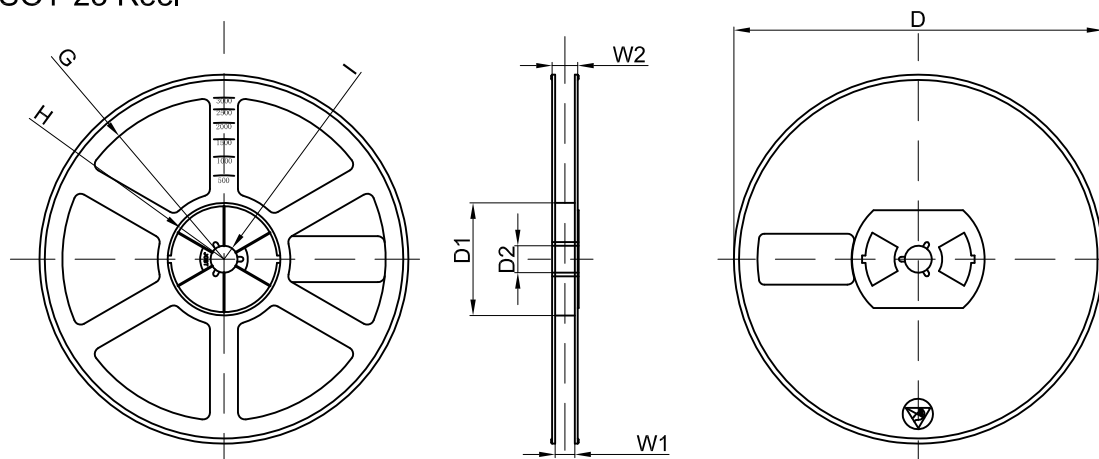


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23 Tape Leader and Trailer



SOT-23 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	192x182x182	180,000 pcs	400x385x385	