



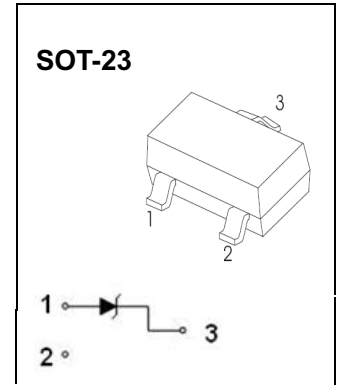
# BZX84B2V4 THRU BZX84B39

## SOT-23 Plastic-Encapsulate Diodes

### BZX84B2V4 THRU BZX84B39 ZENER DIODES

#### FEATURES

- ◆ Planar Die Construction
- ◆ 300mW Power Dissipation
- ◆ Zener Voltages from 5.1V - 20V
- ◆ Ultra-Small Surface Mount Package Power Dissipation



#### MAXMUM 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)	$P_d$	300	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	417	$^{\circ}\text{C}/\text{W}$
Junction Temperature	$T_j$	150	
Storage Temperature Range	$T_{stg}$	-55~+150	



# BZX84B2V4 THRU BZX84B39

## Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise specified)

PART NUMBER	MARKING CODE	ZENER VOLTAGE RANGE			TEST CURRENT		REVERSE LEAKAGE CURRENT		DYNAMIC RESISTANCE f = 1 kHz	
		V <sub>Z</sub> at I <sub>ZT1</sub>			I <sub>ZT1</sub>	I <sub>ZT2</sub>	I <sub>R</sub> at V <sub>R</sub>		Z <sub>Z</sub> at I <sub>ZT1</sub>	Z <sub>ZK</sub> at I <sub>ZT2</sub>
		V			mA		μA	V		
		MIN.	NOM.	MAX.					MAX.	MAX.
BZX84B2V4	2Z11	2.35	2.4	2.45	5	1	50	1	100	275
BZX84B2V7	2Z12	2.65	2.7	2.75	5	1	20	1	100	600
BZX84B3V0	2Z13	2.94	3.0	3.06	5	1	10	1	95	600
BZX84B3V3	2Z14	3.23	3.3	3.37	5	1	5	1	95	600
BZX84B3V6	2Z15	3.53	3.6	3.67	5	1	5	1	90	600
BZX84B3V9	2Z16	3.82	3.9	3.98	5	1	3	1	90	600
BZX84B4V3	2Z17	4.21	4.3	4.39	5	1	3	1	90	600
BZX84B4V7	2Z1	4.61	4.7	4.79	5	1	3	2	80	500
BZX84B5V1	2Z2	5.0	5.1	5.2	5	1	2	2	60	480
BZX84B5V6	2Z3	5.49	5.6	5.71	5	1	1	2	40	400
BZX84B6V2	2Z4	6.08	6.2	6.32	5	1	3	4	10	150
BZX84B6V8	2Z5	6.66	6.8	6.94	5	1	2	4	15	80
BZX84B7V5	2Z6	7.35	7.5	7.65	5	1	1	5	15	80
BZX84B8V2	2Z7	8.04	8.2	8.36	5	1	0.7	5	15	80
BZX84B9V1	2Z8	8.92	9.1	9.28	5	1	0.5	6	15	100
BZX84B10	2Z9	9.8	10	10.2	5	1	0.2	7	20	150
BZX84B11	2Y1	10.8	11	11.2	5	1	0.1	8	20	150
BZX84B12	2Y2	11.8	12	12.2	5	1	0.1	8	25	150
BZX84B13	2Y3	12.7	13	13.3	5	1	0.1	8	30	170
BZX84B15	2Y4	14.7	15	15.3	5	1	0.05	10.5	30	200
BZX84B16	2Y5	15.7	16	16.3	5	1	0.05	11.2	40	200
BZX84B18	2Y6	17.6	18	18.4	5	1	0.05	12.6	45	225
BZX84B20	2Y7	19.6	20	20.4	5	1	0.05	14	55	225
BZX84B22	2Y8	21.6	22	22.4	5	1	0.05	15.4	55	250
BZX84B24	2Y9	23.5	24	24.5	5	1	0.05	16.8	70	250
BZX84B27	2Y10	26.5	27	27.5	2	0.5	0.05	18.9	80	300
BZX84B30	2Y11	29.4	30	30.6	2	0.5	0.05	21	80	300
BZX84B33	2Y12	32.3	33	33.7	2	0.5	0.05	23.1	80	325
BZX84B36	2Y13	35.3	36	36.7	2	0.5	0.05	25.2	90	350
BZX84B39	2Y14	38.2	39	39.8	2	0.5	0.05	27.3	130	350

Notes:

1. Valid provided that device terminals are kept at ambient temperature.
2. Tested with pulses, period=5ms,pulse width =300μs.
3. f=1kHz.



ELECTRICAL CHARACTERISTICS CURVE

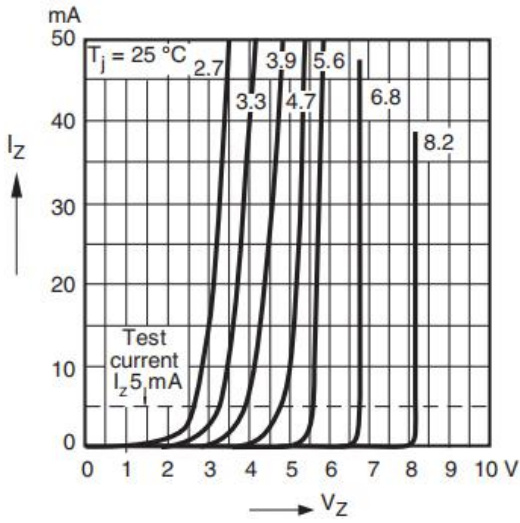


Fig.1-Zener Characteristic1

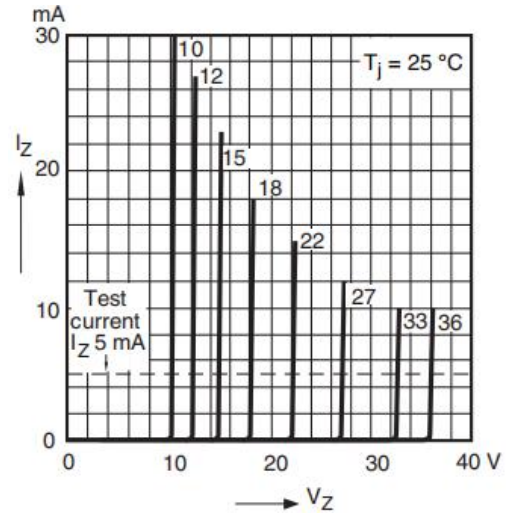


Fig.2-Zener Characteristic2

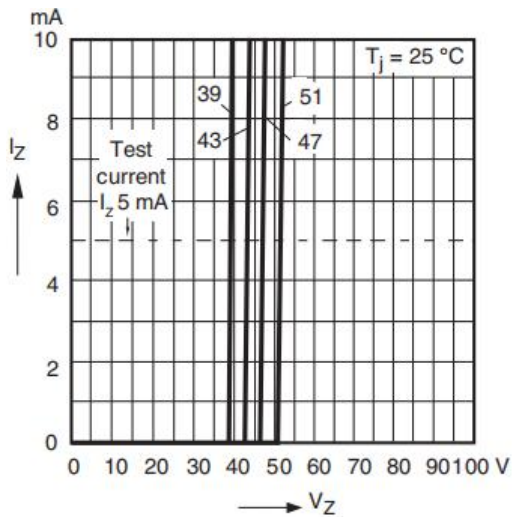


Fig.3-Zener Characteristic3

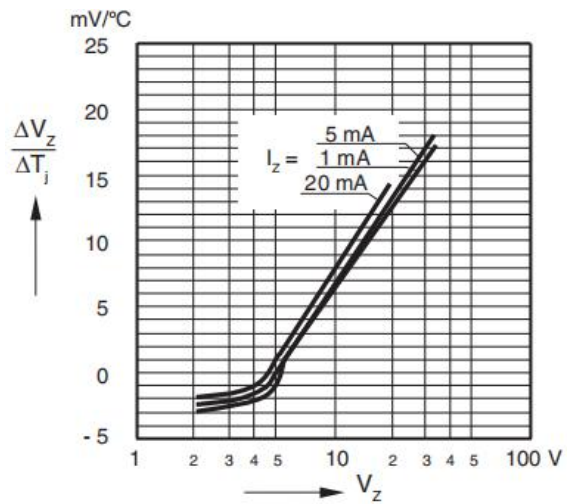


Fig.4-Temperature Dependence of Zener Voltage vs. Zener Voltage

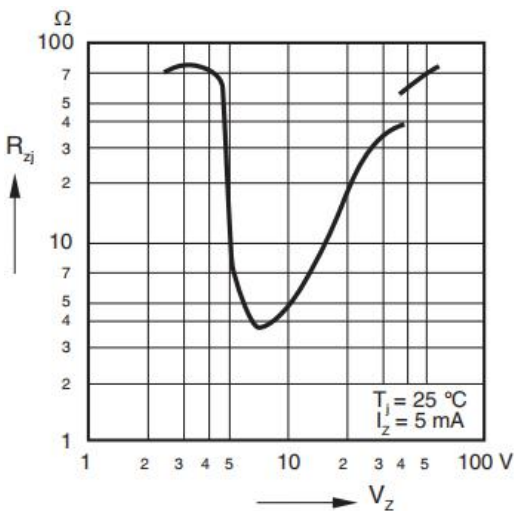


Fig.5-Dynamic Resistance vs. Zener Voltage

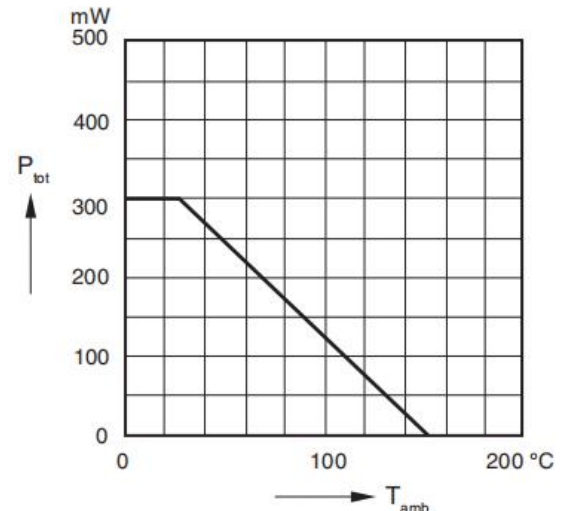


Fig.6-Power Dissipation vs. Ambient Temperature

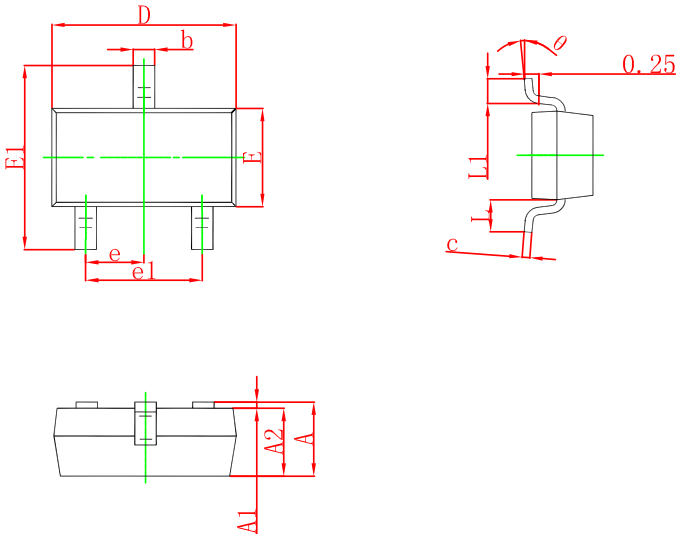
The curve above is for reference only.



# BZX84B2V4 THRU BZX84B39

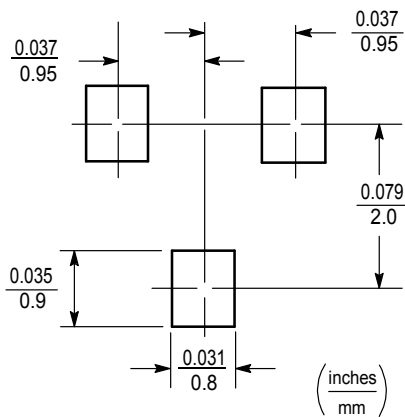
## Outlitne Drawing

### SOT-23 Package Outline Dimensions



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	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

## Suggested Pad Layout



### Note:

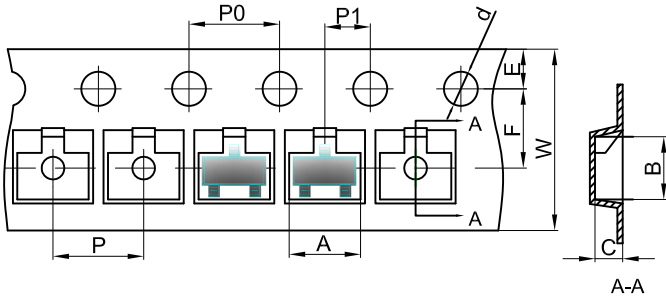
1. Controlling dimension: in/millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.



# BZX84B2V4 THRU BZX84B39

## SOT-23 Tape and Reel

### SOT-23 Embossed Carrier Tape

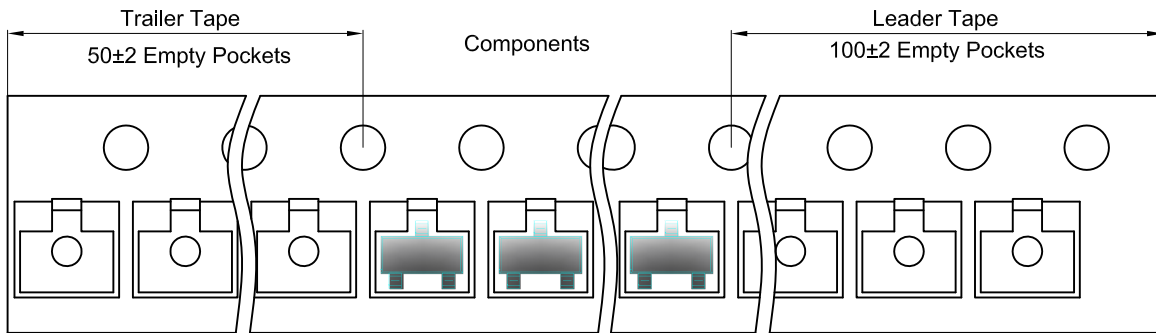


**Packaging Description:**

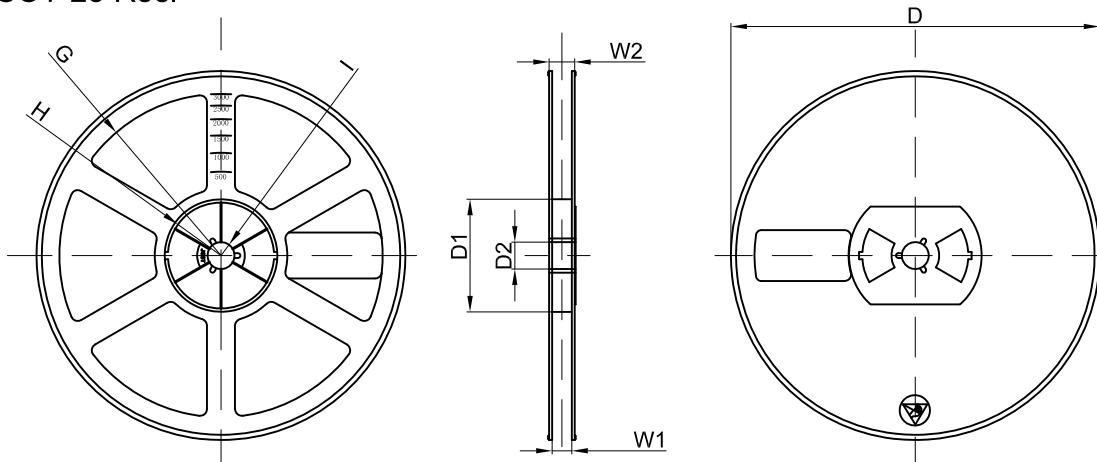
SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in 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
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	203×203×195	180,000 pcs	438×438×220	