



## Silicon Planar Zener Diodes: BZX84B Series

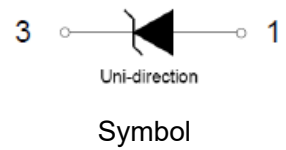
Rev.1.0

### FEATURE

- ✧ Total power dissipation: max 300mW.
- ✧ Low zener impedance.
- ✧ High reliability and high stability.
- ✧ Voltage range includes breakdown voltages from 5.1V to 43V with  $\pm 2\%$  for BZX84B series.



SOT-23



### DESCRIPTION

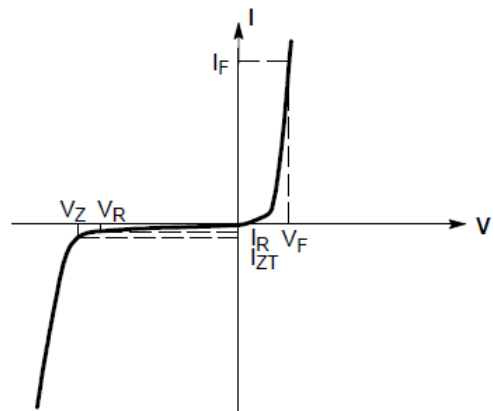
- ✧ SOT-23 small outline plastic package
- ✧ Color band denotes cathode end
- ✧ Epoxy UL: 94V-0
- ✧ Mounting position: any

### ABSOLUTE MAXIMUM RATINGS AND THERMAL CHARACTERISTICS

Parameter	Symbol	Value	Unit
Total power dissipation @ $T_A=25^\circ\text{C}$	$P_D$	300	mW
Thermal resistance from junction to ambient	$R_{\theta JA}$	417	$^\circ\text{C}/\text{W}$
Junction temperature range	$T_J$	-55 to +150	$^\circ\text{C}$
Storage temperature range	$T_{STG}$	-55 to +150	$^\circ\text{C}$

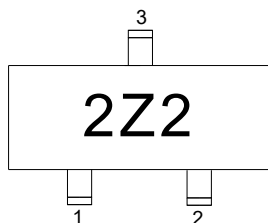
### ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ )

Symbol	Parameter
$V_Z$	Reverse zener voltage at $I_{ZT}$
$I_{ZT}$	Reverse current
$Z_{ZT}$	Maximum zener impedance at $I_{ZT}$
$I_R$	Reverse leakage current at $V_R$
$V_R$	Reverse voltage
$I_F$	Forward current
$V_F$	Forward voltage at $I_F$



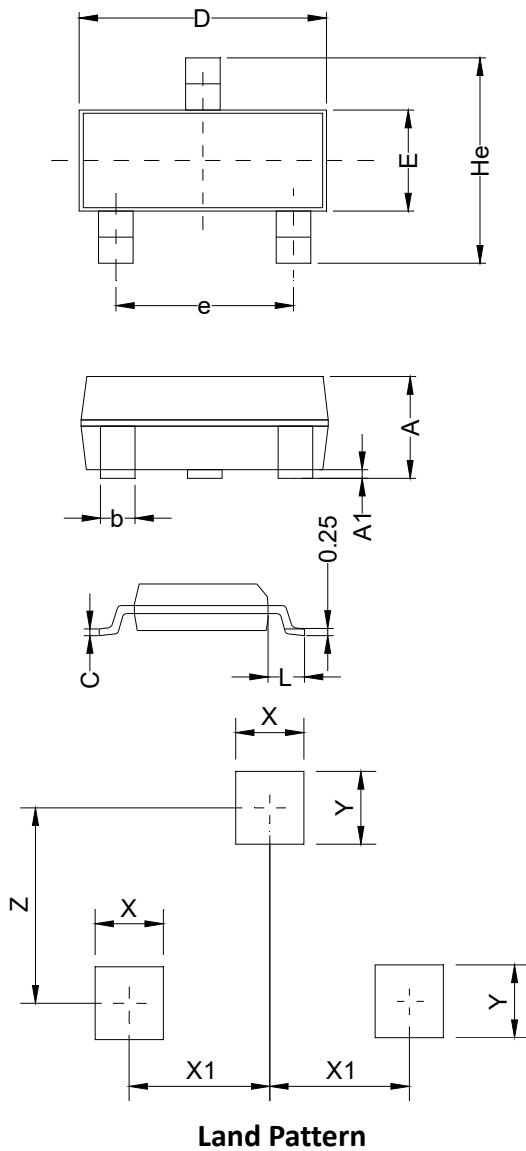
Zener voltage regulator

## MARKING

ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$  unless otherwise noted)Maximum  $V_F=0.9\text{V}$  at  $I_F=10\text{mA}$ 

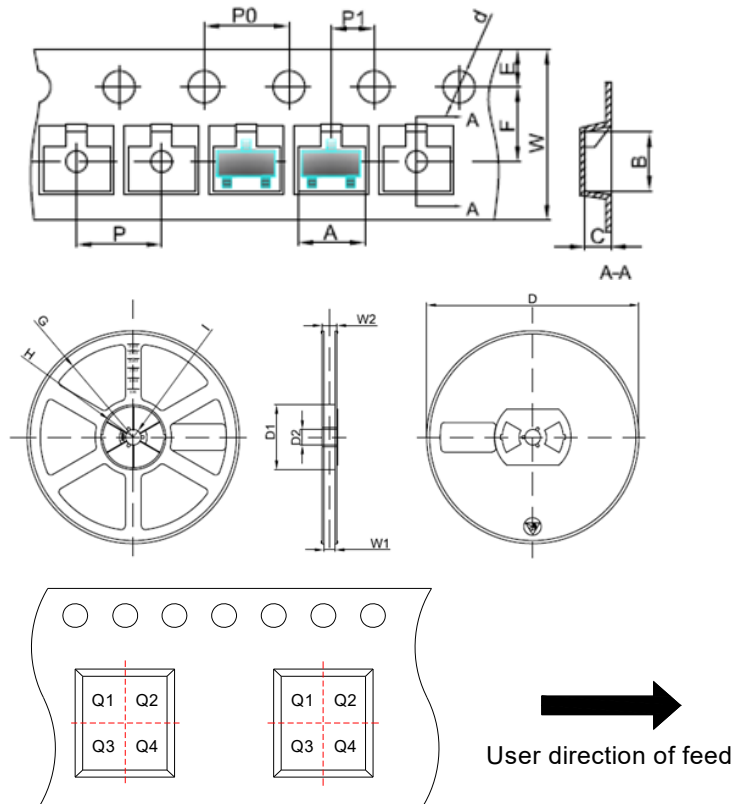
Type number	Zener voltage range at $I_{ZT}$				Maximum zener impedance			Maximum reverse leakage current		Marking
	Nom (Volts)	Min (Volts)	Max (Volts)	$I_{ZT}$ (mA)	$Z_{ZT}$ ( $\Omega$ )	$Z_{ZK}$ ( $\Omega$ )	$I_{ZK}$ (mA)	$I_R$ ( $\mu\text{A}$ )	$V_R$ (Volts)	
BZX84B5V1	5.1	5.00	5.20	5	60	480	1.0	2	2.0	2Z2
BZX84B5V6	5.6	5.49	5.71	5	40	400	1.0	1	2.0	2Z3
BZX84B6V2	6.2	6.08	6.32	5	10	150	1.0	3	4.0	2Z4
BZX84B6V8	6.8	6.66	6.94	5	15	80	1.0	2	4.0	2Z5
BZX84B7V5	7.5	7.35	7.65	5	15	80	1.0	1	5.0	2Z6
BZX84B8V2	8.2	8.04	8.36	5	15	80	1.0	0.7	5.0	2Z7
BZX84B9V1	9.1	8.92	9.28	5	15	100	1.0	0.5	6.0	2Z8
BZX84B10	10	9.80	10.20	5	20	150	1.0	0.2	7.0	2Z9
BZX84B11	11	10.78	11.22	5	20	150	1.0	0.1	8.0	2Y1 •
BZX84B12	12	11.76	12.24	5	25	150	1.0	0.1	8.0	2Y2 •
BZX84B13	13	12.74	13.26	5	30	170	1.0	0.1	8.0	2Y3
BZX84B15	15	14.70	15.30	5	30	200	1.0	0.1	10.5	2Y4
BZX84B16	16	15.68	16.32	5	40	200	1.0	0.1	11.2	2Y5
BZX84B18	18	17.64	18.36	5	45	225	1.0	0.1	12.6	2Y6 •
BZX84B20	20	19.60	20.40	5	55	225	1.0	0.1	14.0	2Y7
BZX84B22	22	21.56	22.44	5	55	250	1.0	0.1	15.4	2Y8
BZX84B24	24	23.52	24.48	5	70	250	1.0	0.1	16.8	2Y9
BZX84B27	27	26.46	27.54	2	80	300	0.5	0.1	18.9	2Y10
BZX84B30	30	29.40	30.60	2	80	300	0.5	0.1	21.0	2Y11 •
BZX84B33	33	32.34	33.66	2	80	325	0.5	0.1	23.1	2Y12
BZX84B36	36	35.28	36.72	2	90	350	0.5	0.1	25.2	2Y13
BZX84B39	39	38.22	39.78	2	130	350	0.5	0.1	27.3	2Y14
BZX84B43	43	42.14	43.86	2	100	700	1.0	0.1	32	2Y15

PACKAGE MECHANICAL DATA



Symbol	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	0.90	1.063	1.15	0.035	0.042	0.045
A1	0.00	0.075	0.14	0.000	0.003	0.006
b	0.30	0.40	0.50	0.012	0.016	0.020
C	0.07	0.10	0.15	0.003	0.004	0.006
D	2.80	2.90	3.00	0.110	0.114	0.118
e	1.80	1.90	2.00	0.071	0.075	0.079
E	1.20	1.30	1.40	0.047	0.051	0.055
L	0.55REF			0.022REF		
He	2.25	2.40	2.55	0.089	0.094	0.100
X	0.80			0.031		
X1	0.95			0.037		
Y	0.80			0.031		
Z	2.02			0.080		

**TAPE AND REEL SPECIFICATION-SOT-23**



Pin 1 quadrant: Q3

**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 3,000units per 7" or 17.8cm diameter reel. The reels are clear in color and made of polystyrene plastic(anti-static coated).

Symbol	Millimeters	Inches
	Typ.	Typ.
A	3.15	0.124
B	2.77	0.109
C	1.22	0.048
d	Φ1.50	Φ0.059
E	1.75	0.069
F	3.50	0.138
P0	4.00	0.157
P	4.00	0.157
P1	2.00	0.079
W	8.00	0.315
D	Φ178	Φ7.008
D1	54.40	2.142
D2	13.00	0.512
G	R78.00	R3.071
H	R25.60	R1.008
I	R6.50	R0.256
W1	9.50	0.374
W2	12.30	0.484

**ORDERING INFORMATION**

Part Number	Package	Reel Size	Quantity Per Reel
BZX84B Series	SOT-23	7 Inch	3,000 pcs

**RATINGS AND CHARACTERISTICS CURVES** ( $T_A=25^{\circ}\text{C}$ , unless otherwise noted)

Fig.1 Power dissipation vs ambient temperature

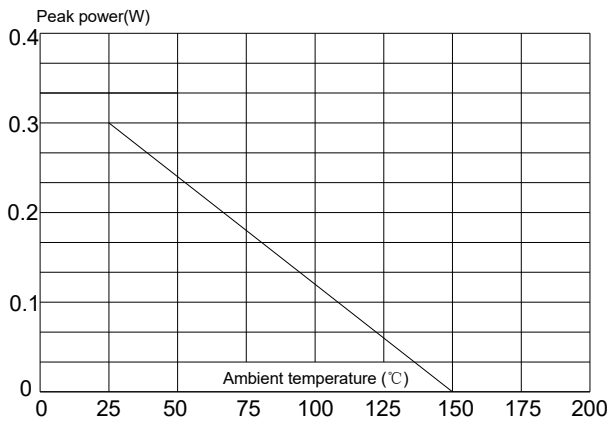


Fig.2 Zener breakdown characteristics

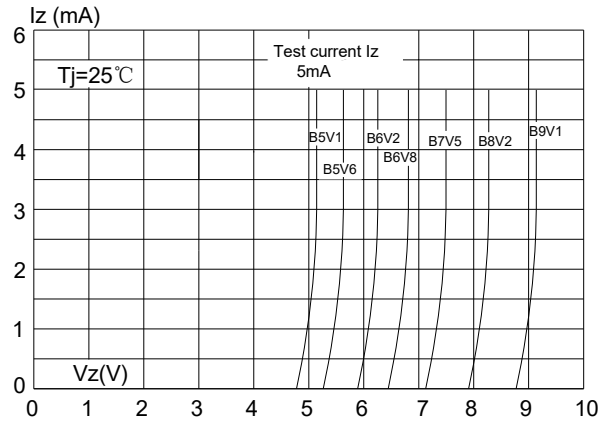


Fig.3 Zener breakdown characteristics

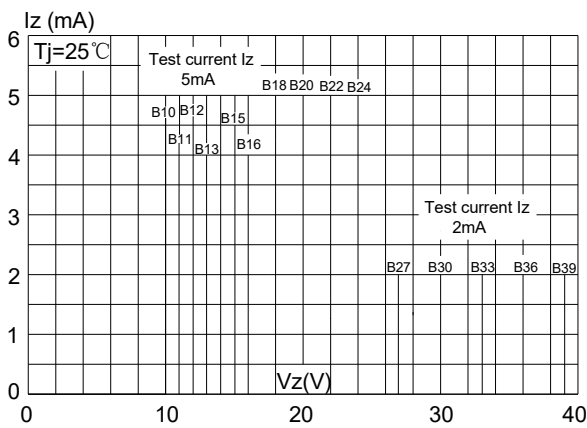
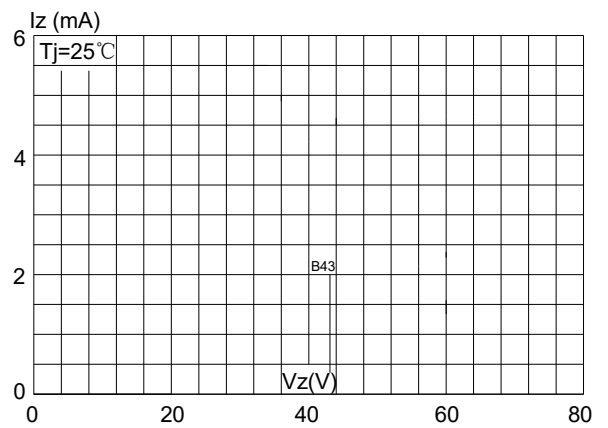


Fig.4 Zener breakdown characteristics




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