



Silicon Planar Zener Diodes: BZX84C Series

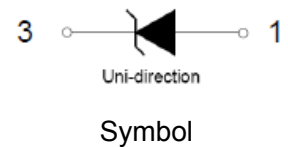
Rev.1.2

FEATURE

- ✧ Total power dissipation: max 300mW.
- ✧ Low zener impedance.
- ✧ High reliability and high stability.
- ✧ Voltage range includes breakdown voltages from 2.4V to 43V with $\pm 5\%$ for BZX84C series.



SOT-23



DESCRIPTION

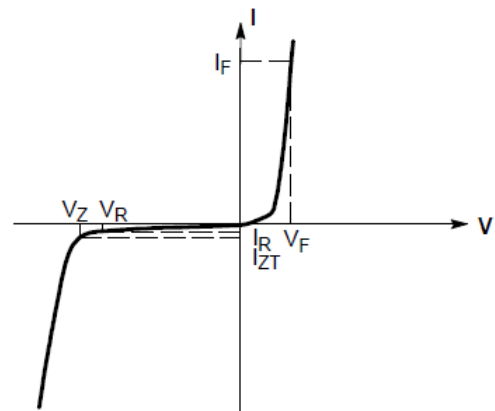
- ✧ SOT-23 small outline plastic package
- ✧ Color band denotes cathode end
- ✧ Epoxy UL: 94V-0
- ✧ Mounting position: any

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	-65 to +150	$^\circ\text{C}$
Storage temperature range	T_s	-65 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



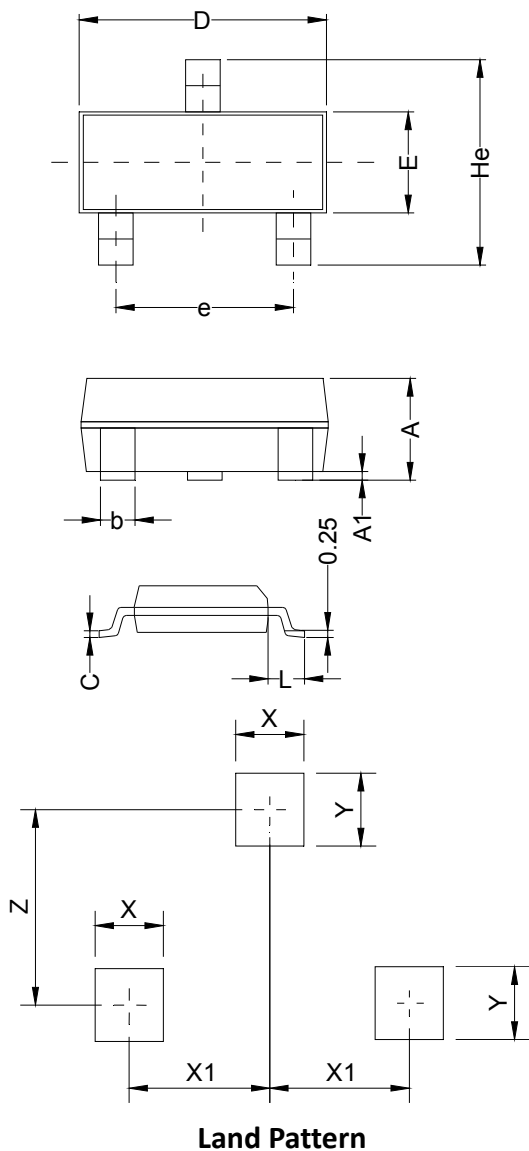
Zener voltage regulator

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

 Maximum $V_F=0.9\text{V}$ at $I_F=10\text{mA}$

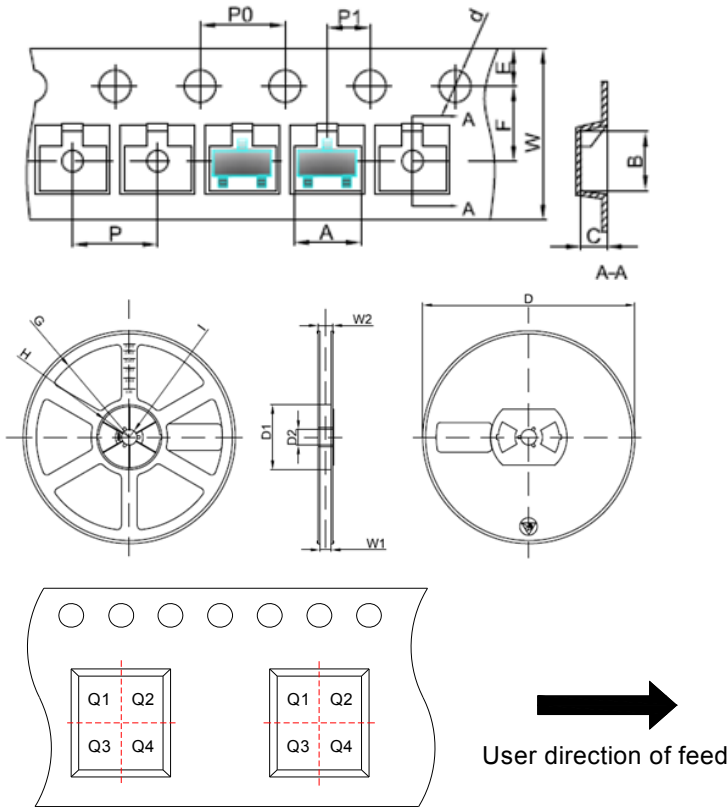
Type number	Zener voltage range at I_{ZT}				Maximum zener impedance			Maximum reverse leakage current		Marking
	Nom (Volts)	Min (Volts)	Max (Volts)	I_{ZT} (mA)	Z_{ZT} (Ω)	Z_{ZK} (Ω)	I_{ZK} (mA)	I_R (μA)	V_R (Volts)	
BZX84C2V4	2.4	2.28	2.52	5	100	600	1.0	50	1.0	Z11
BZX84C2V7	2.7	2.57	2.84	5	100	600	1.0	20	1.0	Z12
BZX84C3V0	3.0	2.85	3.15	5	95	600	1.0	10	1.0	Z13
BZX84C3V3	3.3	3.14	3.47	5	95	600	1.0	5	1.0	Z14
BZX84C3V6	3.6	3.42	3.78	5	90	600	1.0	5	1.0	Z15
BZX84C3V9	3.9	3.71	4.10	5	90	600	1.0	3	1.0	Z16
BZX84C4V3	4.3	4.09	4.52	5	90	600	1.0	3	1.0	Z17
BZX84C4V7	4.7	4.47	4.94	5	80	500	1.0	3	2.0	Z1
BZX84C5V1	5.1	4.85	5.36	5	60	480	1.0	2	2.0	Z2
BZX84C5V6	5.6	5.32	5.88	5	40	400	1.0	1	2.0	Z3
BZX84C6V2	6.2	5.89	6.51	5	10	150	1.0	3	4.0	Z4
BZX84C6V8	6.8	6.46	7.14	5	15	80	1.0	2	4.0	Z5
BZX84C7V5	7.5	7.13	7.88	5	15	80	1.0	1	5.0	Z6
BZX84C8V2	8.2	7.79	8.61	5	15	80	1.0	0.7	5.0	Z7
BZX84C9V1	9.1	8.65	9.56	5	15	100	1.0	0.5	6.0	Z8
BZX84C10	10	9.50	10.50	5	20	150	1.0	0.2	7.0	Z9
BZX84C11	11	10.45	11.55	5	20	150	1.0	0.1	8.0	Y1 •
BZX84C12	12	11.40	12.60	5	25	150	1.0	0.1	8.0	Y2 •
BZX84C13	13	12.35	13.65	5	30	170	1.0	0.1	8.0	Y3
BZX84C15	15	14.25	15.75	5	30	200	1.0	0.1	10.5	Y4
BZX84C16	16	15.20	16.80	5	40	200	1.0	0.1	11.2	Y5
BZX84C18	18	17.10	18.90	5	45	225	1.0	0.1	12.6	Y6 •
BZX84C20	20	19.00	21.00	5	55	225	1.0	0.1	14.0	Y7
BZX84C22	22	20.90	23.10	5	55	250	1.0	0.1	15.4	Y8
BZX84C24	24	22.80	25.20	5	70	250	1.0	0.1	16.8	Y9
BZX84C27	27	25.65	28.35	2	80	300	0.5	0.1	18.9	Y10
BZX84C30	30	28.50	31.50	2	80	300	0.5	0.1	21.0	Y11 •
BZX84C33	33	31.35	34.65	2	80	325	0.5	0.1	23.1	Y12
BZX84C36	36	34.20	37.80	2	90	350	0.5	0.1	25.2	Y13
BZX84C39	39	37.05	40.95	2	130	350	0.5	0.1	27.3	Y14
BZX84C43	43	40.85	45.15	2	100	700	1.0	0.1	32	Y15

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
BZX84C 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

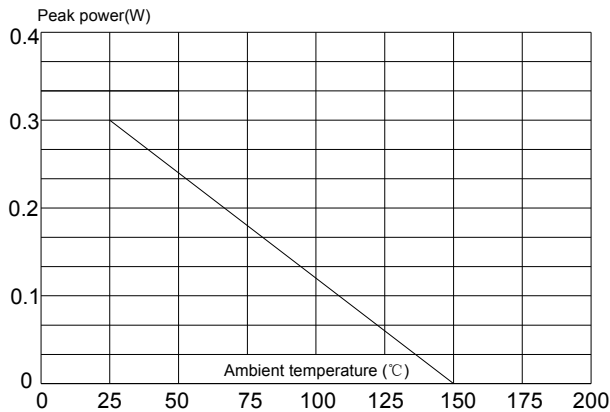


Fig.2 Zener breakdown characteristics

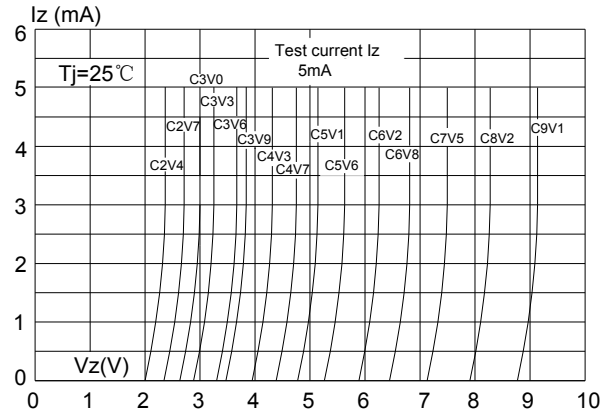


Fig.3 Zener breakdown characteristics

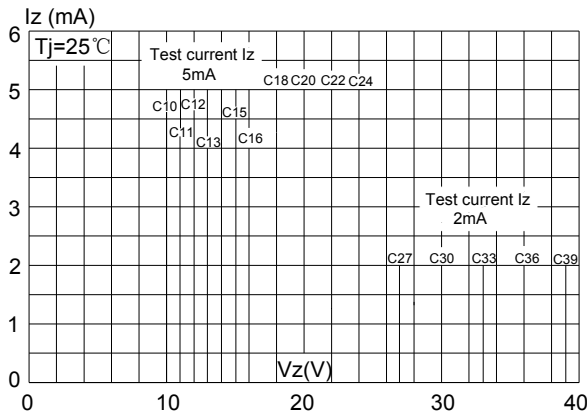
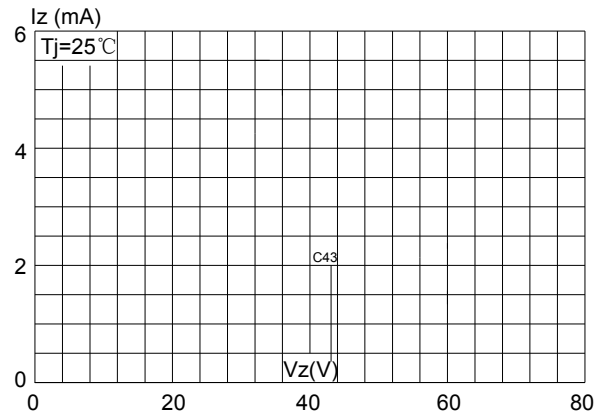


Fig.4 Zener breakdown characteristics




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