

BZX84CXX Series

SOT-23 Plastic-Encapsulate Zener Diodes

ROHS

Features

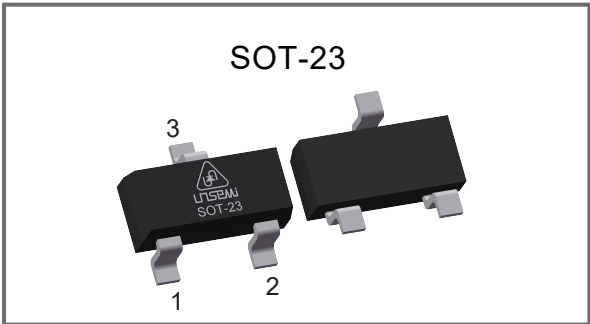
- ◆ Planar Die Construction
- ◆ 300mW Power Dissipation
- ◆ Zener Voltages from 2.4V to 39V
- ◆ Ultra-Small Surface Mount Package Power Dissipation

Mechanical Data

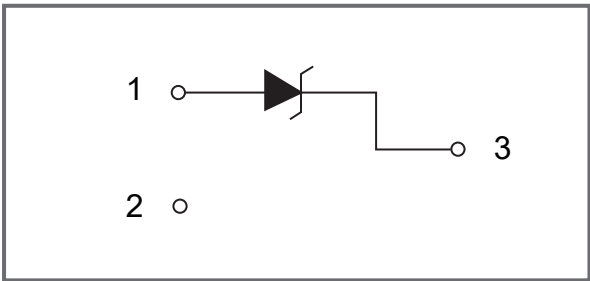
- ◆ Case: SOT-23
- ◆ Molding Compound Flammability Rating : UL 94V-O
- ◆ Quantity Per Reel : 3,000pcs
- ◆ Lead Finish : Lead Free



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Functional Diagram



Maximum Ratings(Ta=25°C unless otherwise specified)

Parameter	Symbol	Value	Units
Forward Voltage@ IF=10mA	VF	0.9	V
Power Dissipation	PD	300	mW
Thermal Resistance from Junction to Ambient	RθJA	417	°C/W
Operating Junction Temperature Range	TJ	-55 ~ +150	°C
Storage Temperature Range	Tstg	-55 ~ +150	°C

Electrical Characteristics (Ta=25°C unless otherwise specified)

Parameter	Marking	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse Current		Typical Temperature Coefficient @IZT	
		Vz@IZT			IZT	ZZT@IZT	ZZK@IZK	IZK	IR	VR	Min (mV/°C)	Max (mV/°C)
		Min(V)	Nom(V)	Max(V)								
BZX84C2V4	Z11	2.2	2.4	2.6	5	100	600	1.0	50	1.0	-3.5	0
BZX84C2V7	Z12	2.5	2.7	2.9	5	100	600	1.0	20	1.0	-3.5	0
BZX84C3V0	Z13	2.8	3.0	3.2	5	95	600	1.0	10	1.0	-3.5	0
BZX84C3V3	Z14	3.1	3.3	3.5	5	95	600	1.0	5	1.0	-3.5	0
BZX84C3V6	Z15	3.4	3.6	3.8	5	90	600	1.0	5	1.0	-3.5	0
BZX84C3V9	Z16	3.7	3.9	4.1	5	90	600	1.0	3	1.0	-3.5	0
BZX84C4V3	Z17	4.0	4.3	4.6	5	90	600	1.0	3	1.0	-3.5	0
BZX84C4V7	Z1	4.4	4.7	5.0	5	80	500	1.0	3	2.0	-3.5	0.2
BZX84C5V1	Z2	4.8	5.1	5.4	5	60	480	1.0	2	2.0	-2.7	1.2
BZX84C5V6	Z3	5.2	5.6	6.0	5	40	400	1.0	1	2.0	-2.0	2.5
BZX84C6V2	Z4	5.8	6.2	6.6	5	10	150	1.0	3	4.0	0.4	3.7
BZX84C6V8	Z5	6.4	6.8	7.2	5	15	80	1.0	2	4.0	1.2	4.5
BZX84C7V5	Z6	7.4	7.5	7.9	5	15	80	1.0	1	5.0	2.5	5.3
BZX84C8V2	Z7	7.7	8.2	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2
BZX84C9V1	Z8	8.5	9.1	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0

Electrical Characteristics (Ta=25°C unless otherwise specified)

Parameter	Marking	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse Current		Typical Temperature Coefficient @I _{ZT}	
		V _Z @I _{ZT}			I _{ZT}	Z _{ZT} @I _{ZT}	Z _{ZK} @I _{ZK}	I _{ZK}	I _R	V _R	Min (mV/°C)	Max (mV/°C)
		Min(V)	Nom(V)	Max(V)	mA	Ω	Ω	mA	μA	V		
BZX84C10	Z9 .	9.4	10	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0
BZX84C11	Y1	10.4	11	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0
BZX84C12	Y2	11.4	12	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0
BZX84C13	Y3	12.4	13	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0
BZX84C15	Y4 .	13.8	15	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0
BZX84C16	Y5	15.3	16	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0
BZX84C18	Y6	16.8	18	19.1	5	45	225	1.0	0.1	12.6	12.4	16.0
BZX84C20	Y7	18.8	20	21.2	5	55	225	1.0	0.1	14.0	14.4	18.0
BZX84C22	Y8	20.8	22	23.3	5	55	250	1.0	0.1	15.4	16.4	20.0
BZX84C24	Y9 .	22.8	24	25.6	5	70	250	1.0	0.1	16.8	18.4	22.0
BZX84C27	Y10	25.1	27	28.9	2	80	300	0.5	0.1	18.9	21.4	25.3
BZX84C30	Y11	28.0	30	32.0	2	80	300	0.5	0.1	21.0	24.4	29.4
BZX84C33	Y12	31.0	33	35.0	2	80	325	0.5	0.1	23.1	27.4	33.4
BZX84C36	Y13	34.0	36	38.0	2	90	350	0.5	0.1	25.2	30.4	37.4
BZX84C39	Y14	37.0	39	41.0	2	130	350	0.5	0.1	27.3	33.4	41.2

Electrical Characteristics Curves

Fig. 1 Zener Characteristics(Up to 10V)

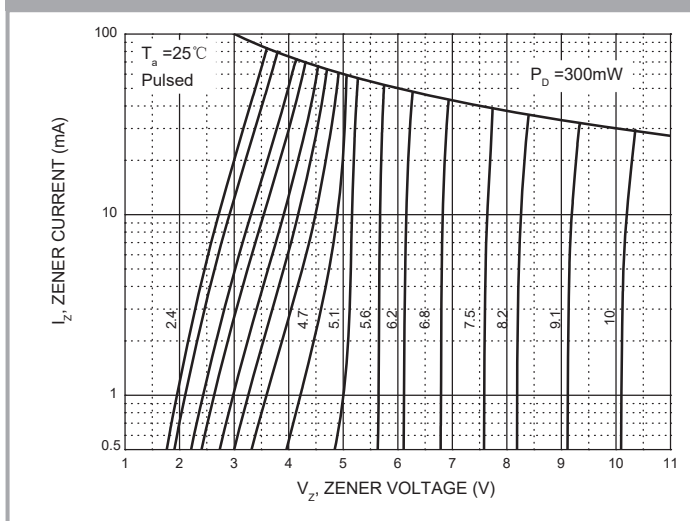


Fig. 2 Zener Characteristics(11V to 39V)

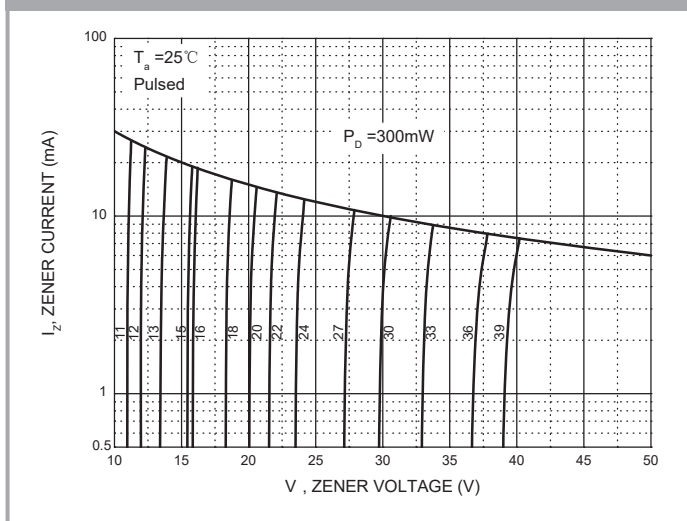


Fig. 3 Temperature Coefficients

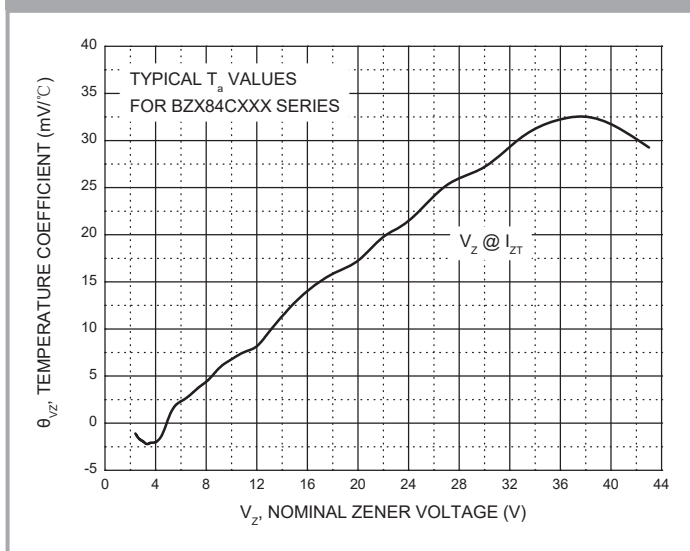
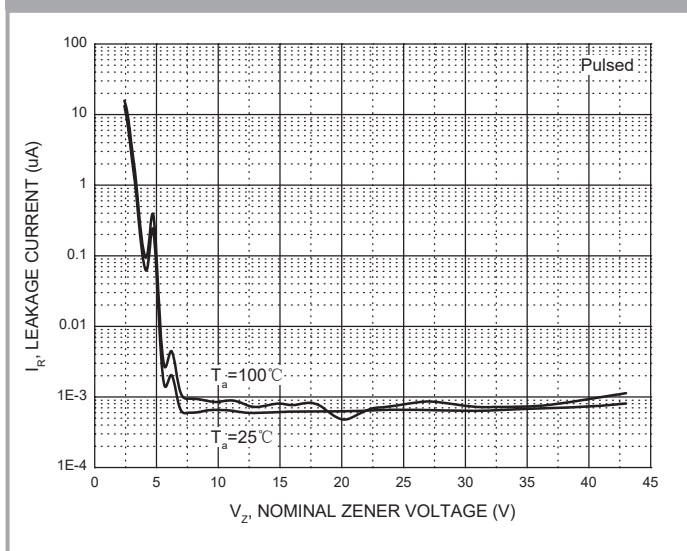


Fig. 4 Typical Leakage Current



Electrical Characteristics Curves

Fig. 5 Typical Capacitance

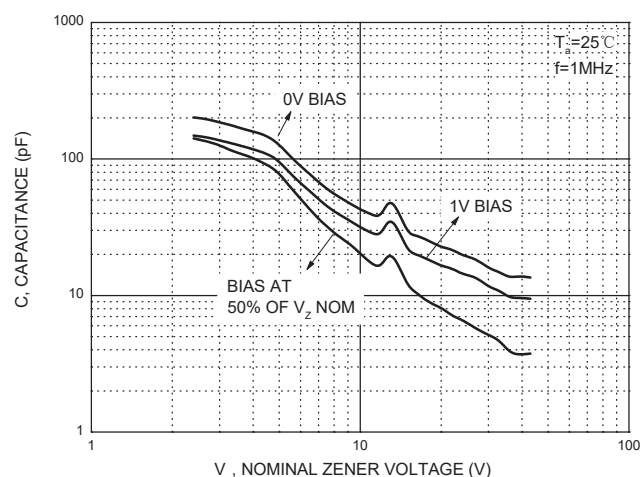


Fig. 6 Effect of Zener Voltage on Zener Impedance

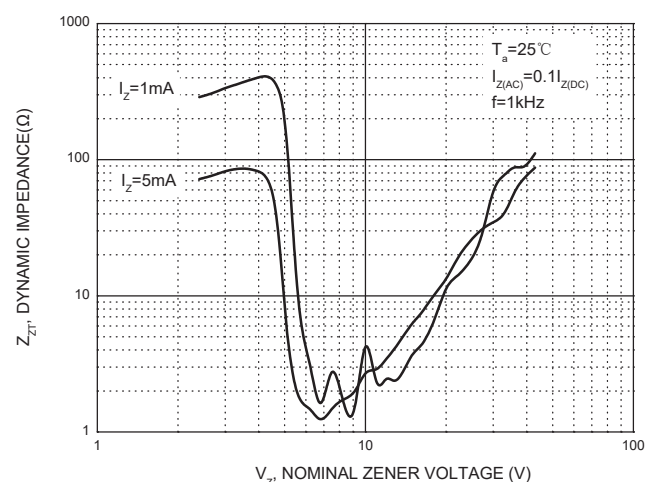
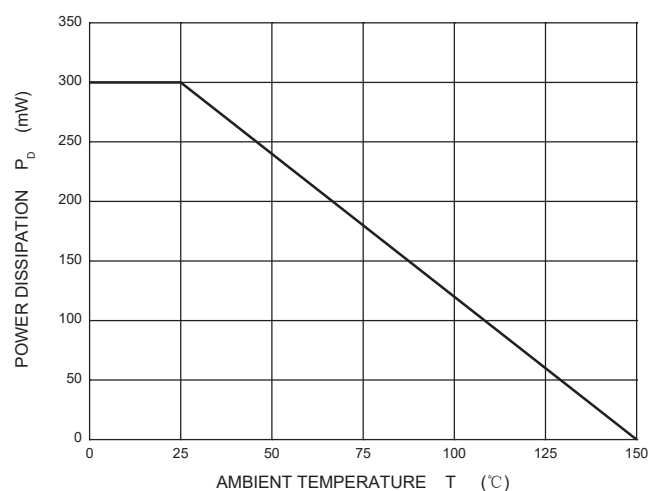
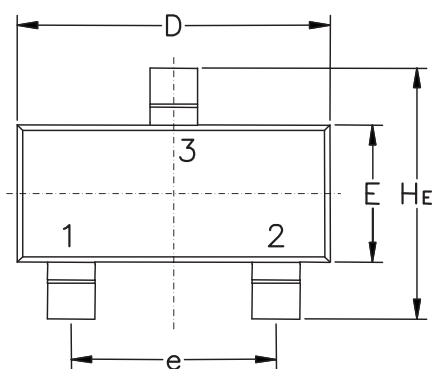


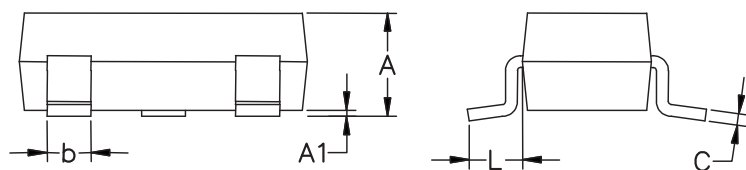
Fig. 7 Power Derating Curve



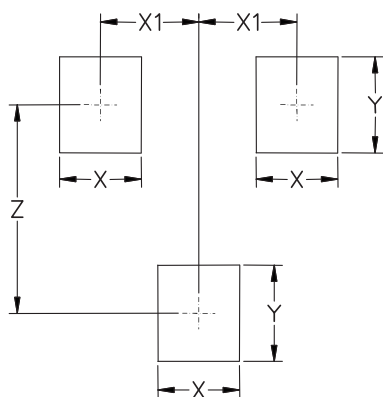
SOT-23 Package Outline & Dimensions



Symbol	Millimeters			Inches		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	1.05	1.11	1.25	0.042	0.044	0.050
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.30	0.44	0.50	0.012	0.018	0.020
C	0.09	0.13	0.20	0.003	0.005	0.008
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.50	1.60	1.70	0.059	0.051	0.067
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.35	0.54	0.69	0.014	0.021	0.027
HE	2.65	2.80	2.95	0.104	0.112	0.116



Soldering Footprint



Symbol	Millimeters	Inches
X	0.80	0.031
X1	0.96	0.037
Y	0.90	0.035
Z	2.40	0.096

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