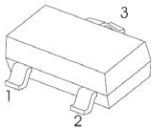
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

AD-BZX84C Series Plastic-Encapsulated Diode

AD-BZX84C series Zener diode

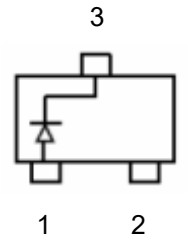
SOT-23



FEATURES

- Planar die construction
- Zener voltages from 2.4V - 43V
- Ultra-small surface mount package with 300mW power dissipation
- AEC-Q101 qualified

EQUIVALENT CIRCUIT



MAXIMUM RATINGS (T_j = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Forward voltage @ I_F = 10mA	V_F 1)	0.9	V
Power dissipation	P_D	300	mW
Thermal resistance from junction to ambient	$R_{\theta JA}$ 2)	417	°C/W
Operating junction and storage temperature range	T_j, T_{stg}	-55 ~ 150	°C

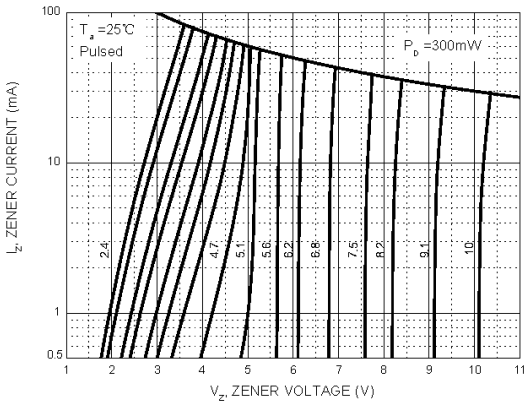
ELECTRICAL CHARACTERISTICS (T_j = 25°C unless otherwise specified)

Type number	Marking	Zener voltage range 1)				Maximum Zener impedance 3)			Maximum reverse current		Temperature coefficient of Zener voltage @ I_{ZT} = 5mA (mV/°C)	
		V_Z @ I_{ZT} (V)			I_{ZT} (mA)	Z_{ZT} @ I_{ZT} (Ω)	Z_{ZK} @ I_{ZK} (Ω)	I_{ZK} (mA)	I_R (μA)	V_R (V)		
		Min	Norm	Max							Min	Max
AD-BZX84C2V4	Z11	2.2	2.4	2.6	5	100	600	1.0	50	1.0	-3.5	0
AD-BZX84C2V7	Z12	2.5	2.7	2.9	5	100	600	1.0	20	1.0	-3.5	0
AD-BZX84C3V0	Z13	2.8	3.0	3.2	5	95	600	1.0	10	1.0	-3.5	0
AD-BZX84C3V3	Z14	3.1	3.3	3.5	5	95	600	1.0	5	1.0	-3.5	0
AD-BZX84C3V6	Z15	3.4	3.6	3.8	5	90	600	1.0	5	1.0	-3.5	0
AD-BZX84C3V9	Z16	3.7	3.9	4.1	5	90	600	1.0	3	1.0	-3.5	0
AD-BZX84C4V3	Z17	4.0	4.3	4.6	5	90	600	1.0	3	1.0	-3.5	0
AD-BZX84C4V7	Z1	4.4	4.7	5.0	5	80	500	1.0	3	2.0	-3.5	0.2
AD-BZX84C5V1	Z2	4.8	5.1	5.4	5	60	480	1.0	2	2.0	-2.7	1.2
AD-BZX84C5V6	Z3	5.2	5.6	6.0	5	40	400	1.0	1	2.0	-2.0	2.5
AD-BZX84C6V2	Z4	5.8	6.2	6.6	5	10	150	1.0	3	4.0	0.4	3.7
AD-BZX84C6V8	Z5	6.4	6.8	7.2	5	15	80	1.0	2	4.0	1.2	4.5
AD-BZX84C7V5	Z6	7.0	7.5	7.9	5	15	80	1.0	1	5.0	2.5	5.3
AD-BZX84C8V2	Z7	7.7	8.2	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2
AD-BZX84C9V1	Z8	8.5	9.1	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0
AD-BZX84C10	Z9	9.4	10	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0
AD-BZX84C11	Y1•	10.4	11	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0
AD-BZX84C12	Y2•	11.4	12	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0
AD-BZX84C13	Y3	12.4	13	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0
AD-BZX84C15	Y4	13.8	15	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0
AD-BZX84C16	Y5	15.3	16	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0
AD-BZX84C18	Y6•	16.8	18	19.1	5	45	225	1.0	0.1	12.6	12.4	16.0
AD-BZX84C20	Y7	18.8	20	21.2	5	55	225	1.0	0.1	14.0	14.4	18.0
AD-BZX84C22	Y8	20.8	22	23.3	5	55	250	1.0	0.1	15.4	16.4	20.0
AD-BZX84C24	Y9	22.8	24	25.6	5	70	250	1.0	0.1	16.8	18.4	22.0
AD-BZX84C27	Y10	25.1	27	28.9	2	80	300	0.5	0.1	18.9	21.4	25.3
AD-BZX84C30	Y11•	28.0	30	32.0	2	80	300	0.5	0.1	21.0	24.4	29.4
AD-BZX84C33	Y12	31.0	33	35.0	2	80	325	0.5	0.1	23.1	27.4	33.4
AD-BZX84C36	Y13	34.0	36	38.0	2	90	350	0.5	0.1	25.2	30.4	37.4
AD-BZX84C39	Y14	37.0	39	41.0	2	130	350	0.5	0.1	27.3	33.4	41.2

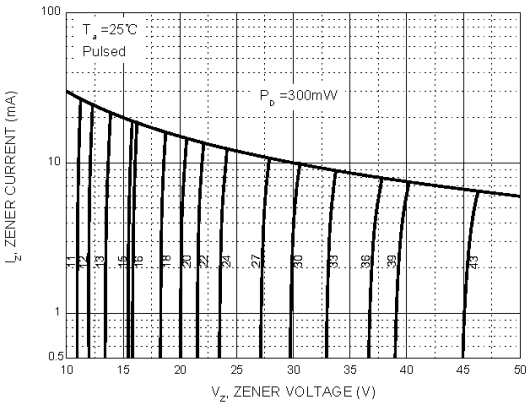
1) Tested with pulses, period = 5ms, pulse width = 300μs.
2) Measured with the device mounted on 1 inch^2 FR-4 board with 1oz. single-side copper, in a still air environment with T_a = 25℃.
3) f = 1kHZ.

TYPICAL CHARACTERISTICS

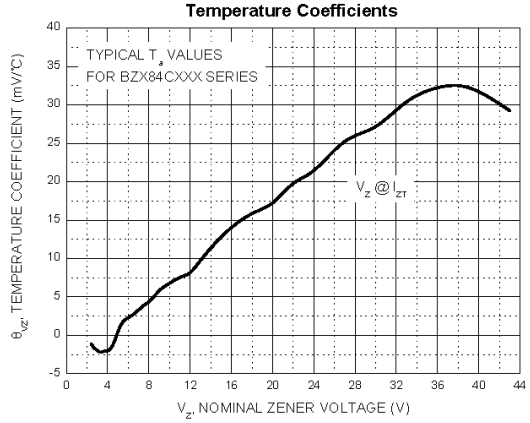
Zener Characteristics (V_Z Up to 10 V)



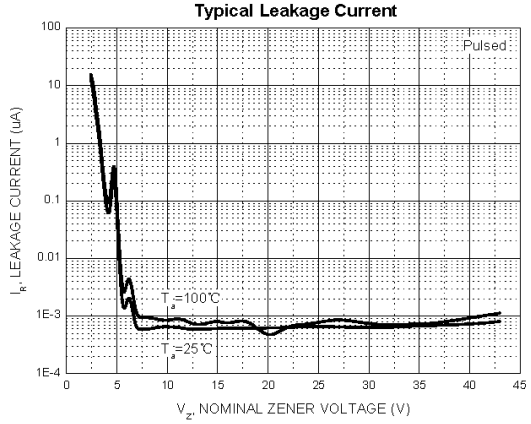
Zener Characteristics (11 V to 43 V)



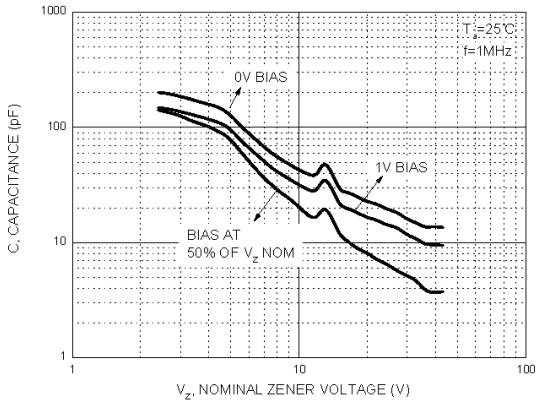
Temperature Coefficients



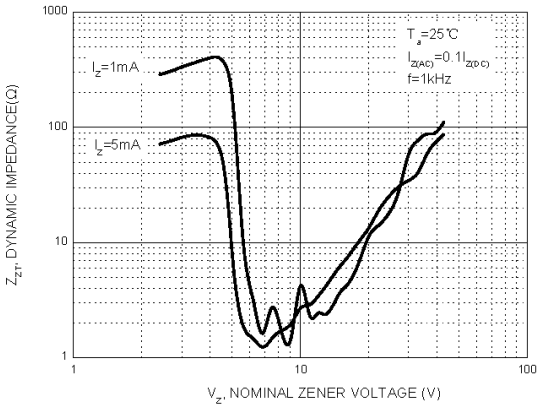
Typical Leakage Current



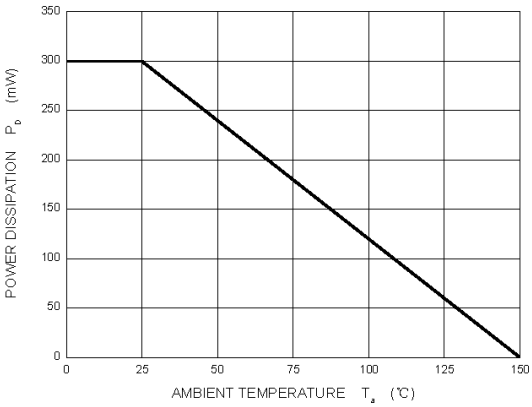
Typical Capacitance



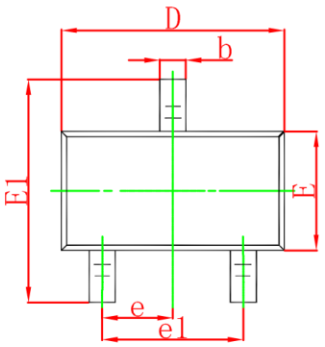
Effect of Zener Voltage on Zener Impedance

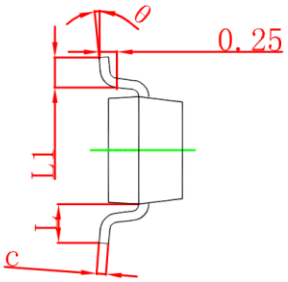


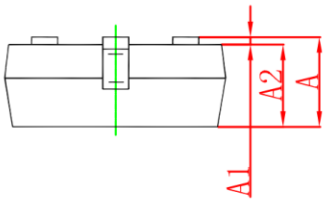
Power Derating Curve



SOT-23 PACKAGE OUTLINE DIMENSIONS

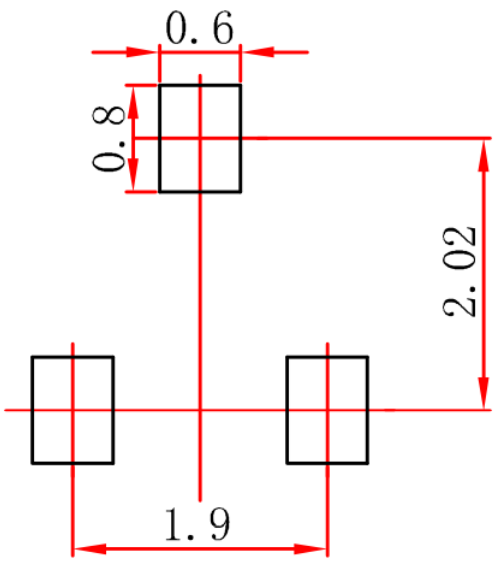






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 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°

SOT-23 SUGGESTED PAD LAYOUT

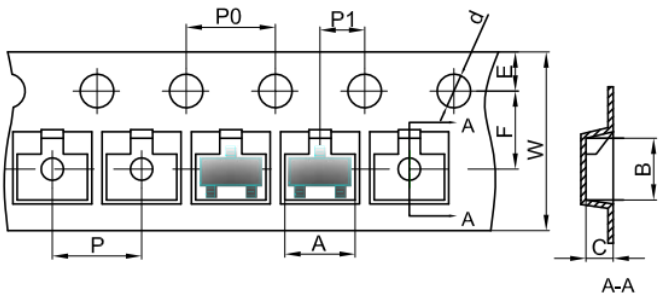


Note:

1. Controlling dimension in millimeters.
2. General tolerance: ±0.05mm.
3. The pad layout is for reference purpose only.

SOT-23 TAPE AND REEL

SOT-23 Embossed Carrier Tape

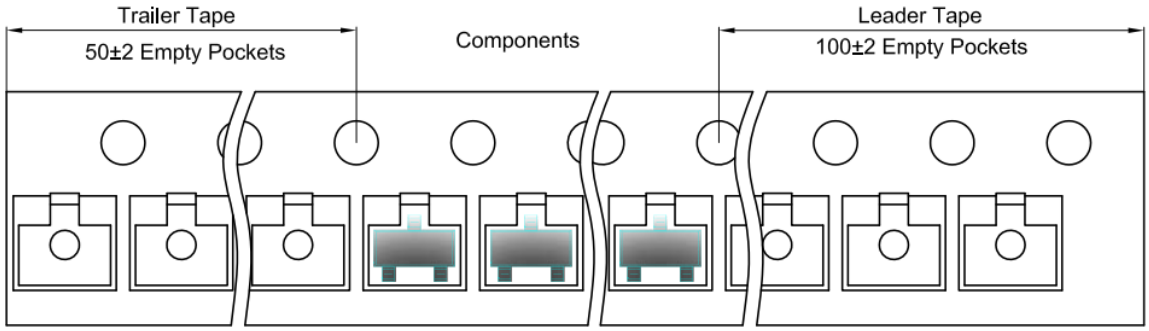


Packaging Description:

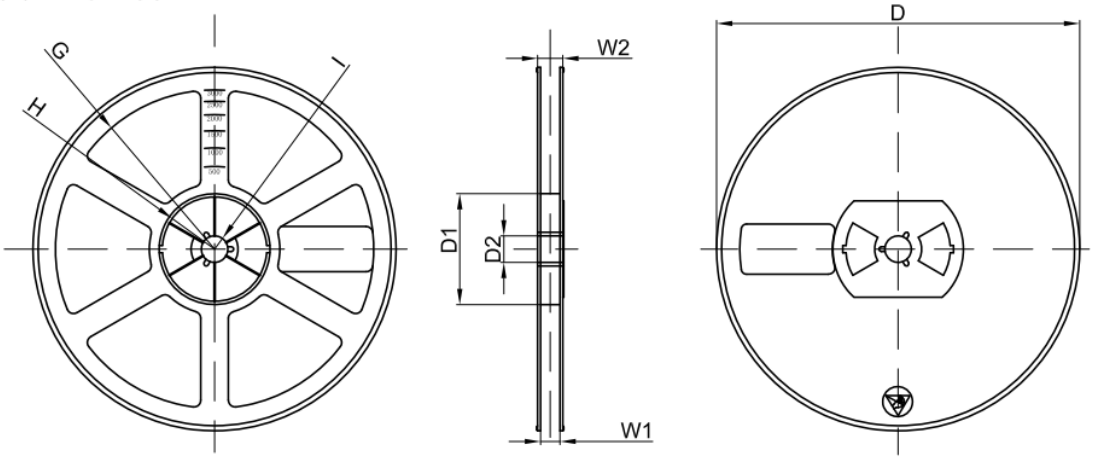
SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in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

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