

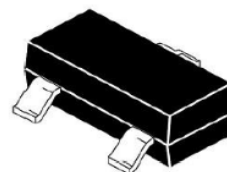
Planar Plastic Zener Diode

Version: A1 2023-8-14

Features

- Silicon Planar Zener Diode
- Total Power Dissipation: 300mW
- Zener Voltages from 2.4V - 43V
- Ultra-Small Package for Surface Mount Package
- Tolerance approximately: $\pm 6\%$

Exterior

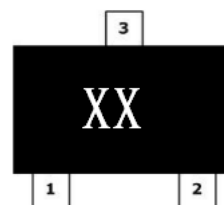


SOT-23

Application Information

- DC power
- Signal interface
- Other portable devices

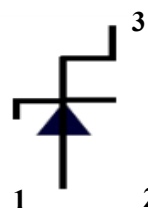
Package (top view)



Agency Approvals

Icon	Description
RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003
	Mean lead free

Schematic(top view)



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

Characteristic	Symbol	VALUE	UNIT
Power Dissipation @ T _L =75°C Derated above 75°C	P _d	300	mW
Junction Temperature	T _j	-55~+150	°C
Storage Temperature range	T _{stg}	-55~+150	°C

Characteristics (Ta=25°C)

Characteristic	Symbol	VALUE	UNIT
Thermal Resistance from Junction to Ambient	R _{θJA}	417	°C/W
Forward Voltage @ I _F =10mA	V _F	0.9	V

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Part Number and Electrical Parameter

Part Number	Code	Zener Voltage Range ¹⁾				Maximum Zener Impedance ²⁾			Maximum Reverse Current		Temperature Coefficient of Zener voltage @ I _{ZT} =5mA mV/°C	
		V _Z @I _{ZT}			I _{ZT}	Z _{ZT} @I _{ZT}	Z _K @I _{ZK}	I _{ZK}	I _R	V _R		
		Nom(V)	Min(V)	Max(V)	(mA)	(Ω)		(mA)	(μA)	(V)	Min	Max
BW-TAC2V4T1G-6	Z11	2.4	2.20	2.60	5	100	600	1.0	50	1.0	-3.5	0
BW-TAC2V7T1G-6	Z12	2.7	2.5	2.9	5	100	600	1.0	20	1.0	-3.5	0
BW-TAC3V0T1G-6	Z13	3.0	2.8	3.2	5	95	600	1.0	10	1.0	-3.5	0
BW-TAC3V3T1G-6	Z14	3.3	3.1	3.5	5	95	600	1.0	5	1.0	-3.5	0
BW-TAC3V6T1G-6	Z15	3.6	3.4	3.8	5	90	600	1.0	5	1.0	-3.5	0
BW-TAC3V9T1G-6	Z16	3.9	3.7	4.1	5	90	600	1.0	3	1.0	-3.5	0
BW-TAC4V3T1G-6	Z17	4.3	4.0	4.6	5	90	600	1.0	3	1.0	-3.5	0
BW-TAC4V7T1G-6	Z1	4.7	4.4	5.0	5	80	500	1.0	3	2.0	-3.5	0.2
BW-TAC5V1T1G-6	Z2	5.1	4.8	5.4	5	60	480	1.0	2	2.0	-2.7	1.2
BW-TAC5V6T1G-6	Z3	5.6	5.2	6.0	5	40	400	1.0	1	2.0	-2.0	2.5
BW-TAC6V2T1G-6	Z4	6.2	5.8	6.6	5	10	150	1.0	3	4.0	0.4	3.7
BW-TAC6V8T1G-6	Z5	6.8	6.4	7.2	5	15	80	1.0	2	4.0	1.2	4.5
BW-TAC7V5T1G-6	Z6	7.5	7.0	7.9	5	15	80	1.0	1	5.0	2.5	5.3
BW-TAC8V2T1G-6	Z7	8.2	7.7	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2
BW-TAC9V1T1G-6	Z8	9.1	8.5	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0
BW-TAC10VT1G-6	Z9	10	9.4	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0
BW-TAC11VT1G-6	Y1	11	10.4	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0
BW-TAC12VT1G-6	Y2	12	11.4	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0
BW-TAC13VT1G-6	Y3	13	12.4	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0
BW-TAC15VT1G-6	Y4	15	13.8	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0
BW-TAC16VT1G-6	Y5	16	15.3	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0
BW-TAC18VT1G-6	Y6	18	16.8	19.1	5	45	225	1.0	0.05	12.6	12.4	16.0
BW-TAC20VT1G-6	Y7	20	18.8	21.2	5	55	225	1.0	0.1	14.0	14.4	18.0
BW-TAC22VT1G-6	Y8	22	20.8	23.3	5	55	250	1.0	0.1	15.4	16.4	20.0
BW-TAC24VT1G-6	Y9	24	22.8	25.6	5	70	250	1.0	0.1	16.8	18.4	22.0
BW-TAC27VT1G-6	Y10	27	25.1	28.9	2	80	300	0.5	0.1	18.9	21.4	25.3
BW-TAC30VT1G-6	Y11	30	28.0	32.0	2	80	300	0.5	0.1	21.0	24.4	29.4
BW-TAC33VT1G-6	Y12	33	31.0	35.0	2	80	325	0.5	0.1	23.1	27.4	33.4
BW-TAC36VT1G-6	Y13	36	34.0	38.0	2	90	350	0.5	0.1	25.2	30.4	37.4
BW-TAC39VT1G-6	Y14	39	37.0	41.0	2	130	350	0.5	0.1	27.3	33.4	41.2
BW-TAC43VT1G-6	Y15	43	40.0	46.0	2	100	700	1	0.1	32	10	12

Notes: 1) V_Z is tested with pulse(width=300uS)

2) Tested method of Z_{ZT} and Z_{ZK}, AC frequency =1KHz;

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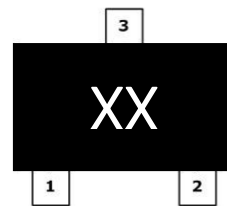
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Part Numbering System

BW	TA	C	XXX	T1	G	6
(1)	(2)	(3)	(4)	(5)	(6)	(7)

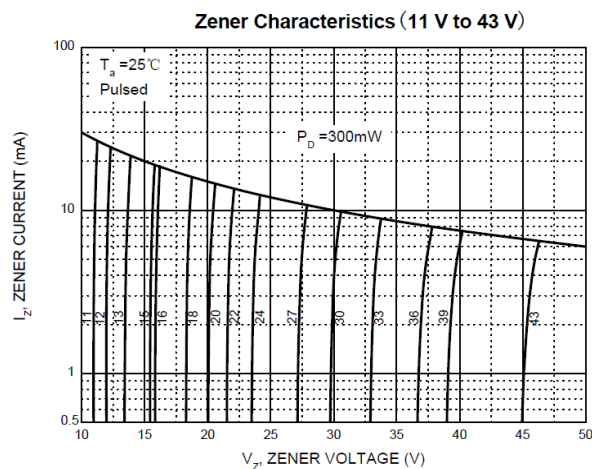
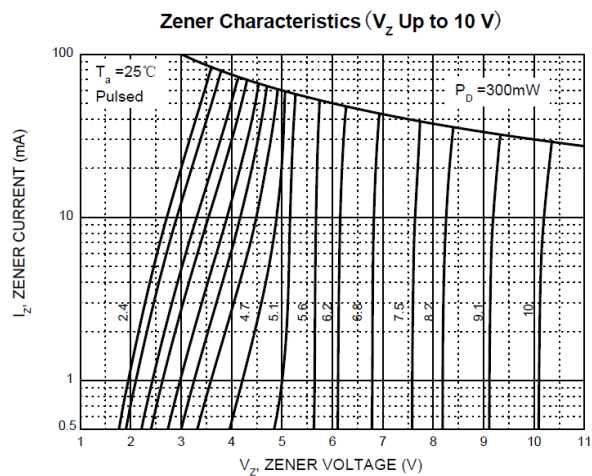
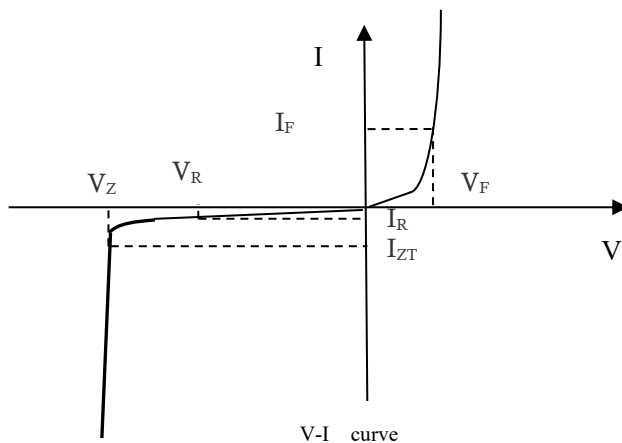
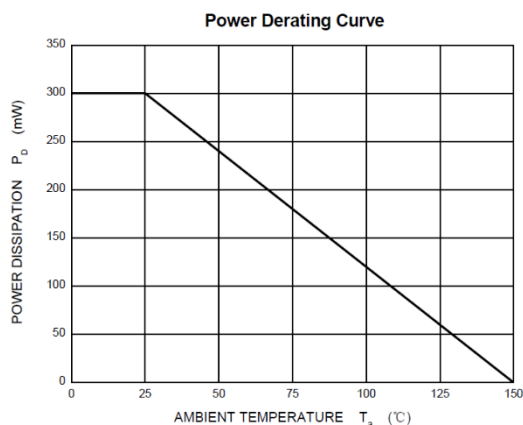
- (1) Bencent Zener Diode
- (2) Package: SOT23
- (3) Power Dissipation: 300mW
- (4) Work Voltage: 2.4V-43V
- (5) Package type: Taping, 3K/R
- (6) Green
- (7) Tolerance of accuracy: $\pm 6\%$

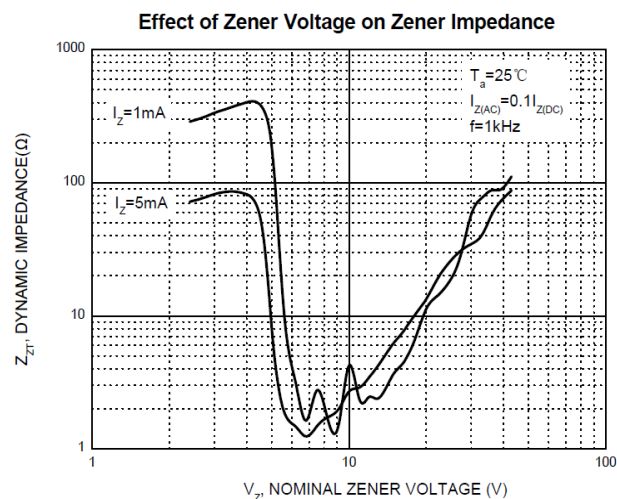
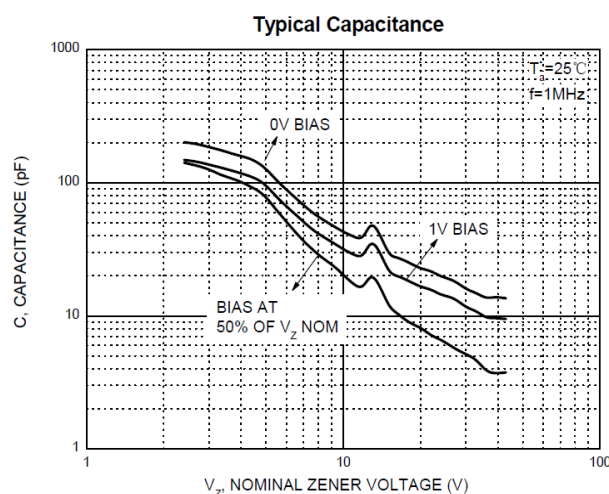
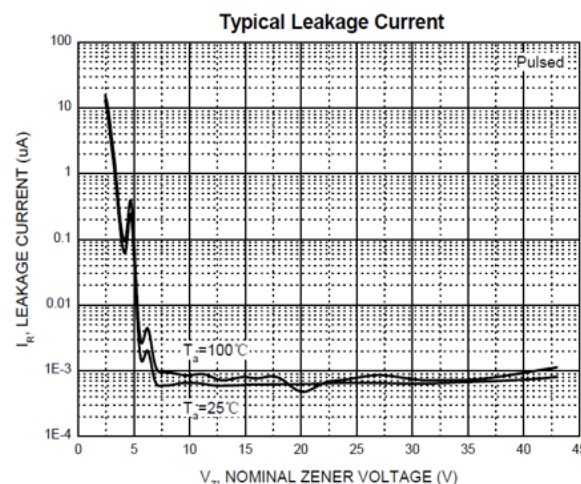
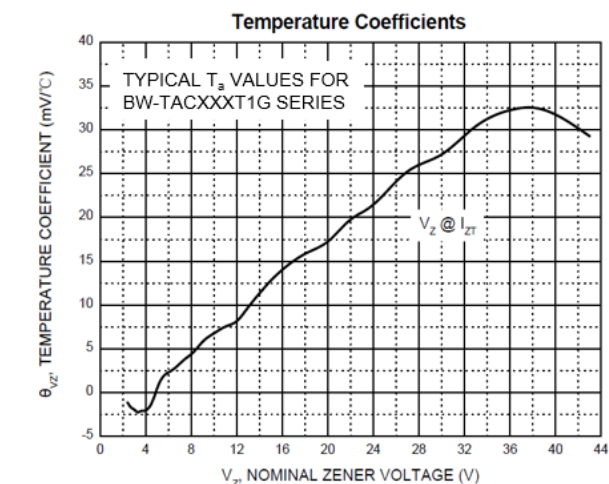
Mark



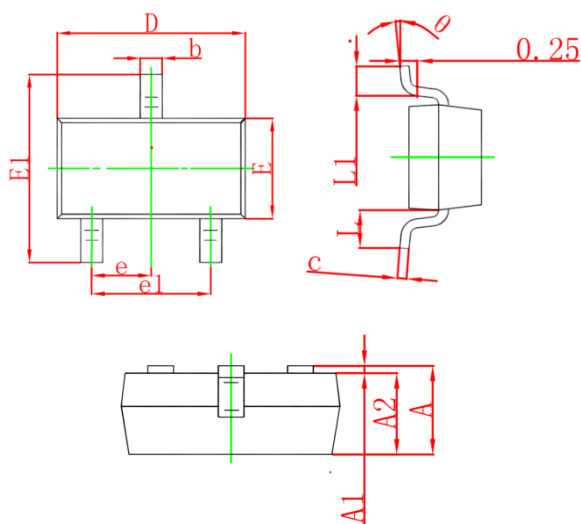
XX = Mark code, refer to the code column on page 2 for specific.

Typical Characteristics





Product Dimensions

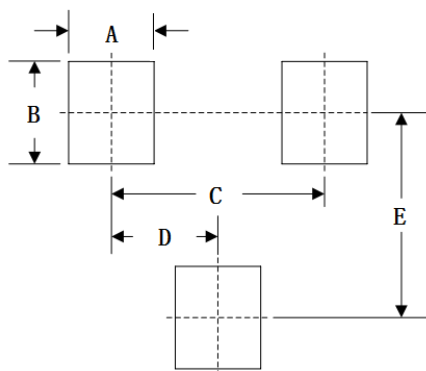


REF	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

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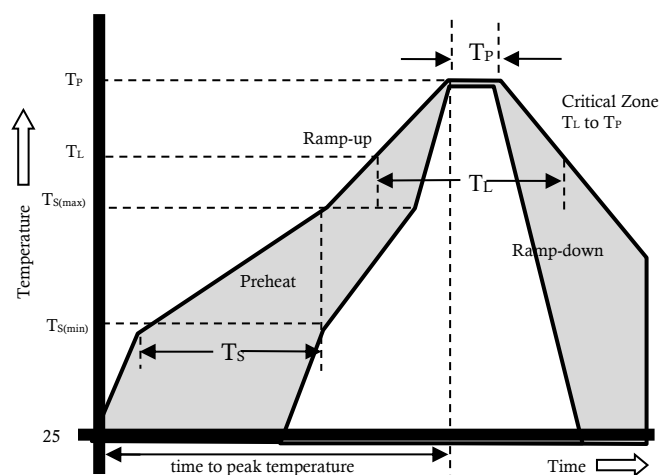
Recommended Soldering Pad



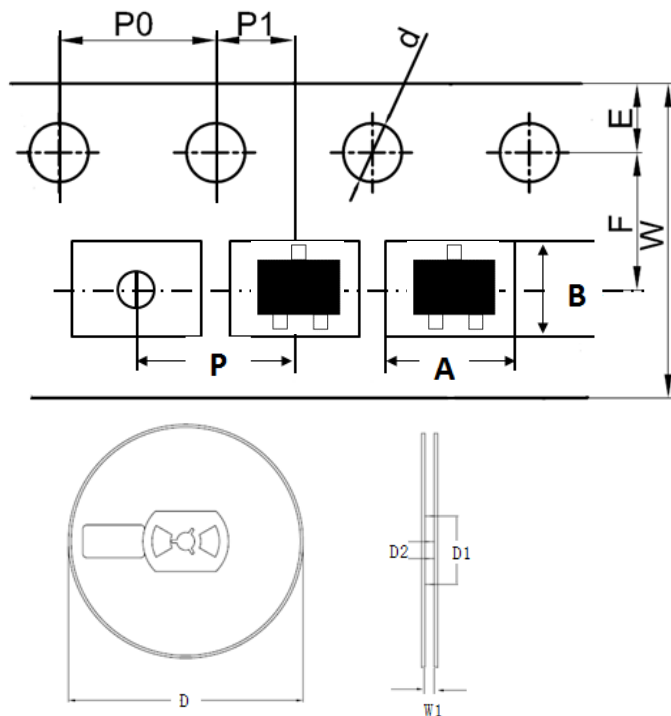
REF	mm	inch
A	0.6	0.0234
B	0.8	0.0315
C	1.9	0.0748
D	0.95	0.0374
E	2.02	0.0795

Reflow Profile

Reflow Condition		Pb-Free assembly
Pre Heat	Temperature Min	150°C
	Temperature Max	200°C
	Time (min to max)	60 – 180 secs
Average ramp up rate (Liquid) T _{amp} (T _L) to peak		3°C/s max
T _{S(max)} to T _L - Ramp-up Rate		3°C/s max
Reflow	- Temperature (T _L) (Liquid)	217°C
	- Temperature (T _L)	60 – 150 secs
Peak Temperature (T _P)		260±0/-5 °C
Time within 5°C of actual peak Temperature (T _P)		25secs
Ramp-down Rate		6°C/s max
Time 25°C to peak Temperature (T _P)		8 mins Max.
Do not exceed		260°C



Package Reel Information



REF	mm	inch
A	3.10+/-0.20	0.122+/-0.008
B	2.90+/-0.20	0.114+/-0.008
d	1.50+0.1/-0	0.059+0.004/-0
D	178.00+/-2.00	7.008+/-0.079
D1	55.00+/-3.00	2.165+/-0.118
D2	13.00+/-0.50	0.512+/-0.020
E	1.75+/-0.10	0.069+/-0.004
F	3.50+/-0.20	0.138+/-0.008
P	4.00+/-0.20	0.158+/-0.008
P0	4.00+/-0.20	0.158+/-0.008
P1	2.00+/-0.20	0.079+/-0.008
W	8.00+/-0.20	0.315+/-0.008
W1	9.50+/-1.00	0.374+/-0.039

Outline	Reel (pcs)	Per Carton (pcs)	Reel Diameters (mm)	Carton Size(mm)		
				L	W	H
Taping	3,000	90,000	178	390	370	220