

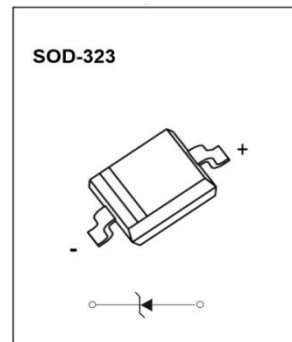
Planar Plastic Zener Diode

Version: A0 2020-09-22

Features

- Planar die construction
- 200mW power dissipation on ceramic PBC
- General purpose, medium current
- Ideally suited for automated assembly processes
- Available in lead free version
- Tolerance approximately: $\pm 6\%$

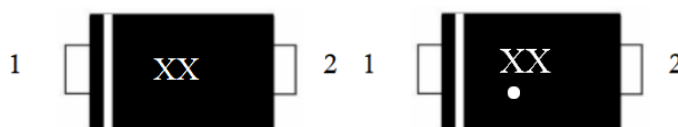
Exterior



Application Information

- Cellular handsets
- Tablets
- Other portable devices

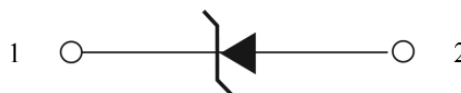
Package (top view)



Agency Approvals

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

Schematic(top view)



Maximum Ratings(Ta=25℃ unless otherwise specified)

Characteristic	Symbol	VALUE	UNIT
Forward Voltage (Note 2) @ I _F =10mA	V _F	0.9	V
Power Dissipation(Note 1)	P _d	200	mW
Thermal Resistance from Junction to Ambient	R _{θJA}	625	℃/W
Junction Temperature	T _j	150	℃
Storage Temperature range	T _{stg}	-55~+150	℃

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Part Number and Electrical Parameter

Part Number	Marking	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse Current		Temperature Coefficient of Zener voltage @ IZT=5mA mV/° C		Test Current IZTC
		VZ@IZT			I ZT	ZZT@ IZT	ZZK@ IZK	I ZK	I R	VR			
		Nom(V)	Min(V)	Max(V)	(mA)	(Ω)		(mA)	(μ A)	(V)	Min	Max	mA
BW-D3A2V4T1G-6	WX	2.4	2.20	2.60	5	100	600	1.0	50	1.0	-3.5	0	5
BW-D3A2V7T1G-6	W1	2.7	2.5	2.9	5	100	600	1.0	20	1.0	-3.5	0	5
BW-D3A3V0T1G-6	W2	3.0	2.8	3.2	5	95	600	1.0	10	1.0	-3.5	0	5
BW-D3A3V3T1G-6	W3	3.3	3.1	3.5	5	95	600	1.0	5	1.0	-3.5	0	5
BW-D3A3V6T1G-6	W4	3.6	3.4	3.8	5	90	600	1.0	5	1.0	-3.5	0	5
BW-D3A3V9T1G-6	W5	3.9	3.7	4.1	5	90	600	1.0	3	1.0	-3.5	0	5
BW-D3A4V3T1G-6	W6	4.3	4.0	4.6	5	90	600	1.0	3	1.0	-3.5	0	5
BW-D3A4V7T1G-6	W7	4.7	4.4	5.0	5	80	500	1.0	3	2.0	-3.5	0.2	5
BW-D3A5V1T1G-6	W8	5.1	4.8	5.4	5	60	480	1.0	2	2.0	-2.7	1.2	5
BW-D3A5V6T1G-6	W9	5.6	5.2	6.0	5	40	400	1.0	1	2.0	-2.0	2.5	5
BW-D3A6V2T1G-6	WA	6.2	5.8	6.6	5	10	150	1.0	3	4.0	0.4	3.7	5
BW-D3A6V8T1G-6	WB	6.8	6.4	7.2	5	15	80	1.0	2	4.0	1.2	4.5	5
BW-D3A7V5T1G-6	WC	7.5	7.0	7.9	5	15	80	1.0	1	5.0	2.5	5.3	5
BW-D3A8V2T1G-6	WD	8.2	7.7	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2	5
BW-D3A9V1T1G-6	WE	9.1	8.5	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0	5
BW-D3A10VT1G-6	WF	10	9.4	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0	5
BW-D3A11VT1G-6	WG	11	10.4	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0	5
BW-D3A12VT1G-6	WH	12	11.4	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0	5
BW-D3A13VT1G-6	WI	13	12.4	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0	5
BW-D3A15VT1G-6	WJ	15	13.8	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0	5
BW-D3A16VT1G-6	WK	16	15.3	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0	5
BW-D3A18VT1G-6	WL	18	16.8	19.1	5	45	225	1.0	0.1	12.6	12.4	16.0	5
BW-D3A20VT1G-6	WM	20	18.8	21.2	5	55	225	1.0	0.1	14.0	14.4	18.0	5
BW-D3A22VT1G-6	WN	22	20.8	23.3	5	55	250	1.0	0.1	15.4	16.4	20.0	5
BW-D3A24VT1G-6	WO	24	22.8	25.6	5	70	250	1.0	0.1	16.8	18.4	22.0	5
BW-D3A27VT1G-6	WP	27	25.1	28.9	2	80	300	0.5	0.1	18.9	21.4	25.3	2
BW-D3A30VT1G-6	WQ	30	28.0	32.0	2	80	300	0.5	0.1	21.0	24.4	29.4	2
BW-D3A33VT1G-6	WR	33	31.0	35.0	2	80	325	0.5	0.1	23.1	27.4	33.4	2
BW-D3A36VT1G-6	WS	36	34.0	38.0	2	90	350	0.5	0.1	25.2	30.4	37.4	2
BW-D3A39VT1G-6	WT	39	37.0	41.0	2	130	350	0.5	0.1	27.3	33.4	41.2	2
BW-D3A43VT1G-6	WU	43	40.0	46.0	2	100	700	1	0.1	32	10	12	5

Notes: 1. Device mounted on ceramic PCB: 7.6mm x 9.4mm x 0.87mm with pad areas 25mm².

2. Short duration test pulse used to minimize self-heating effect.

3. f = 1kHz.

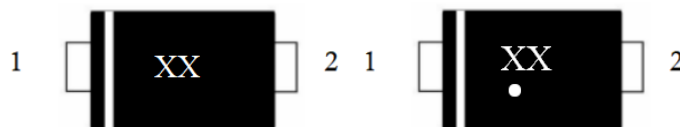
Planar Plastic Zener Diode

Part Numbering System

BW	D3	A	XXX	T1	G	6
(1)	(2)	(3)	(4)	(5)	(6)	(7)

- (1) Bencent Zener Diode
- (2) Package: SOD-323
- (3) Power Dissipation: 200mW
- (4) Work Voltage: 2.4V-43V
- (5) Package type: Taping, 3K/R
- (6) Green
- (7) Tolerance of accuracy: $\pm 6\%$

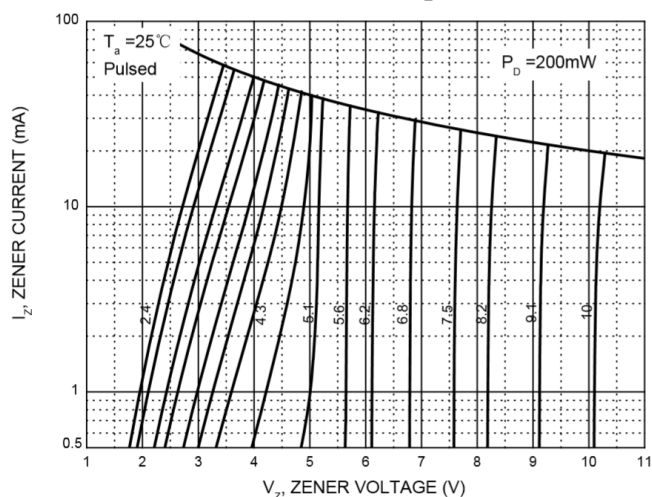
Mark



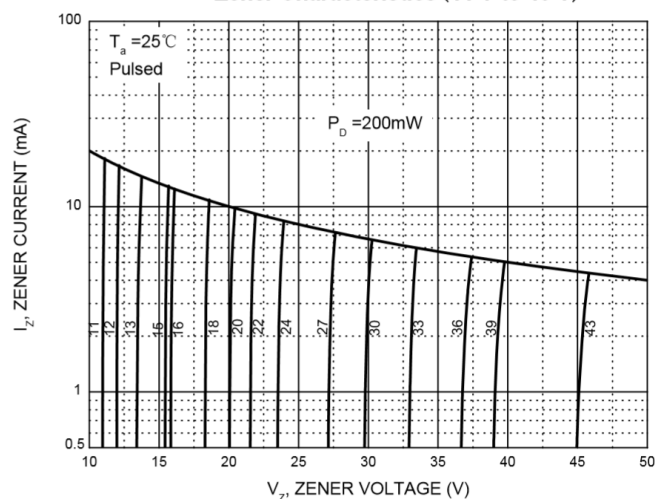
XX = Device code, see table on page 2 the marking code
The marking bar indicates the cathode
Solid dot = Green molding compound device, if none, the normal device.

Typical Characteristics

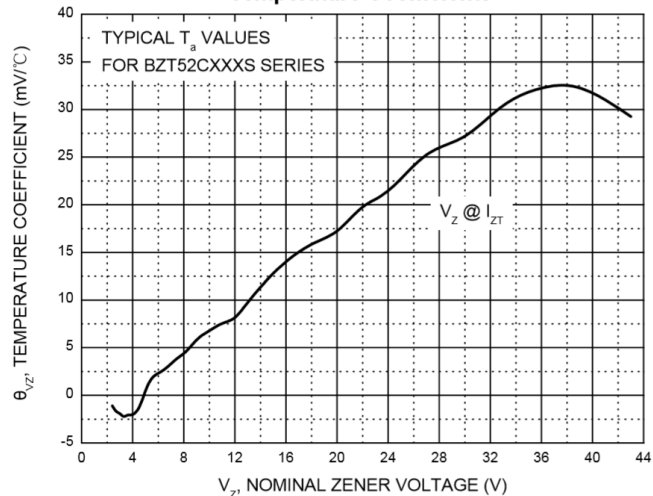
Zener Characteristics (V_Z Up to 10 V)



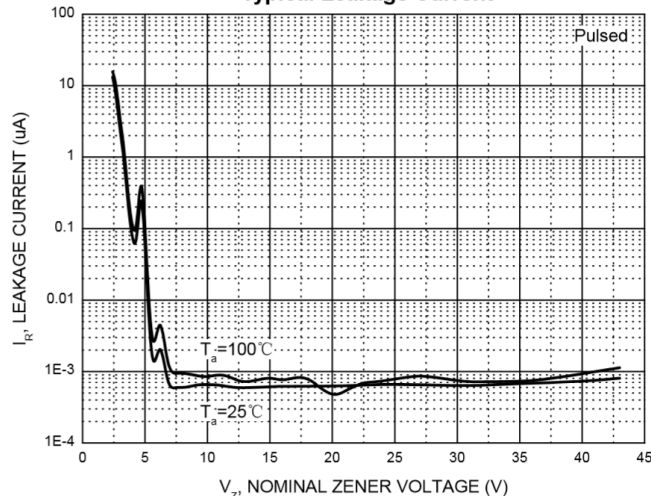
Zener Characteristics (11 V to 43 V)



Temperature Coefficients

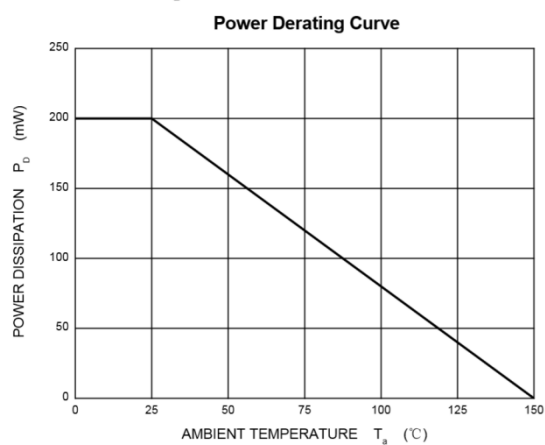
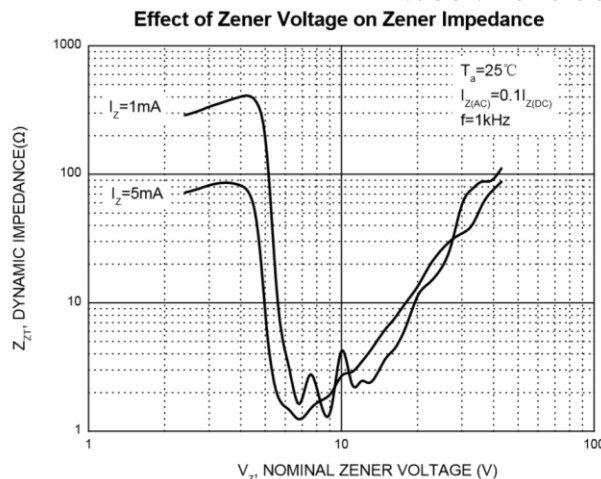
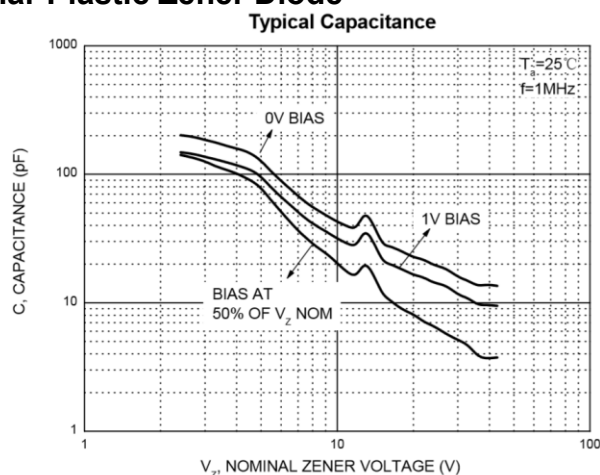


Typical Leakage Current

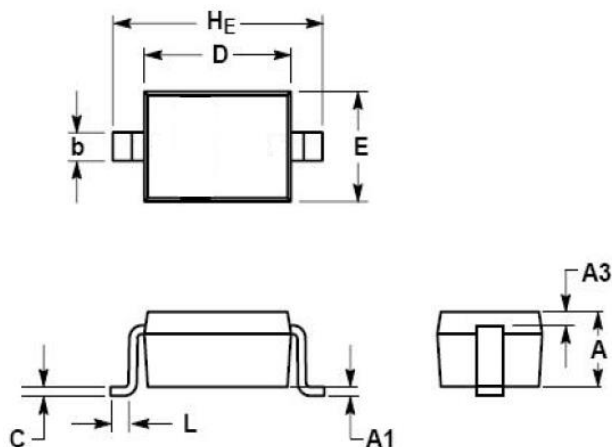


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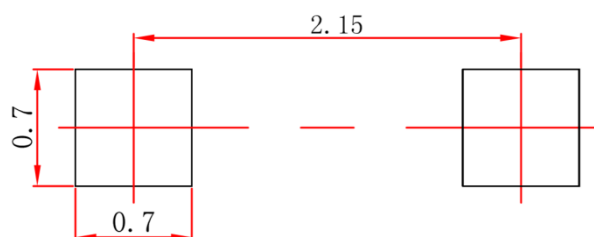


Product Dimensions



REF	mm	inch
A	1.10(max)	0.043(max)
A1	0.00~0.10	0.000~0.004
A3	0.15REF	0.006REF
b	0.25~0.45	0.01~0.018
C	0.08~0.15	0.003~0.006
D	1.60~1.80	0.063~0.071
E	1.15~1.35	0.045~0.053
L	0.10~0.40	0.004~0.016
HE	2.30~2.70	0.091~0.106

SOD-323 Suggested Pad Layout



Notes:

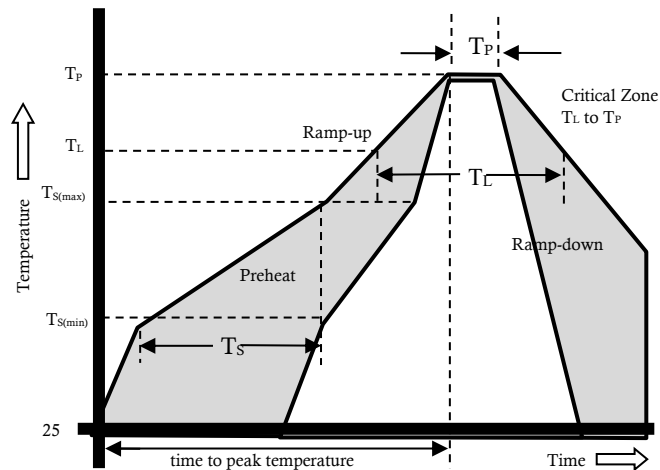
1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purpose only.

Planar Plastic Zener Diode

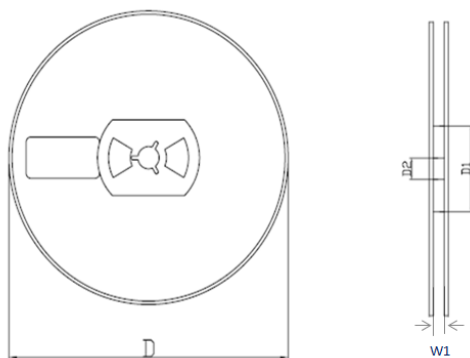
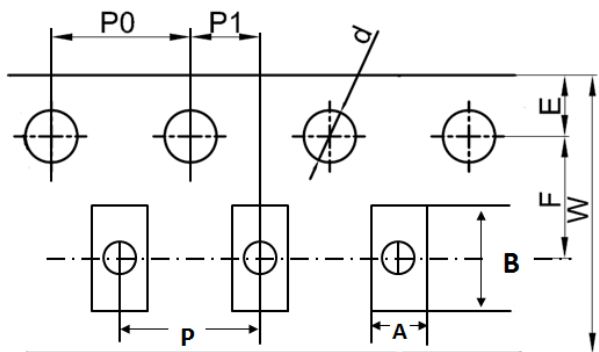
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Reflow Profile

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) Tamp (T _L) to peal		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)		30secs
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	1.46+/-0.20	0.057+/-0.008
B	3.10+/-0.30	0.122+/-0.012
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	0.157+/-0.008
P0	4.00+/-0.20	0.157+/-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