

Planar Plastic Zener Diode

Version: A0 2020-09-22

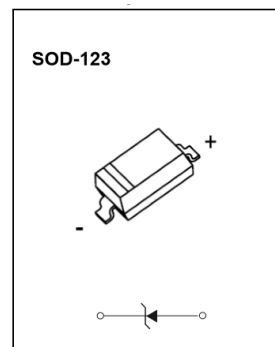
Features

- Planar Die Construction
- 350mW Power Dissipation on Ceramic PCB
- General Purpose, Medium Current
- Ideally Suited for Automated Assembly Processes
- Available in Lead Free Version
- Tolerance approximately: $\pm 2\%$

Application Information

- Cellular handsets
- Tablets
- Other portable devices

Exterior



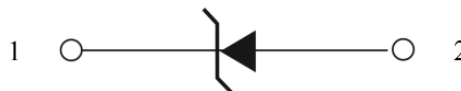
Package (top view)



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	350	mW
Thermal Resistance from Junction to Ambient	R _{θJA}	357	℃/W
Junction Temperature	T _j	150	℃
Storage Temperature range	T _{stg}	-55~+150	℃

Planar Plastic Zener Diode

Version: A0 2020-09-22

Part Number and Electrical Parameter

Part Number	Type Code	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse Current		Temperature Coefficient of Zener voltage @ $I_{ZT}=5mA$ mV/°C		Test Current I_{ZTC}
		$V_Z@I_{ZT}$			I_{ZT}	$Z_{ZT}@I_{ZT}$	$Z_K@I_{ZK}$	I_{ZK}	I_R	V_R	Min	Max	mA
		Nom(V)	Min(V)	Max(V)	(mA)	(Ω)		(mA)	(μA)	(V)			
BW-D1D5V1T1G-2	2W8	5.1	5.00	5.20	5	60	480	1.0	2	2.0	-2.7	1.2	5
BW-D1D5V6T1G-2	2W9	5.6	5.49	5.71	5	40	400	1.0	1	2.0	-2.0	2.5	5
BW-D1D6V2T1G-2	2WA	6.2	6.08	6.32	5	10	150	1.0	3	4.0	0.4	3.7	5
BW-D1D6V8T1G-2	2WB	6.8	6.66	6.94	5	15	80	1.0	2	4.0	1.2	4.5	5
BW-D1D7V5T1G-2	2WC	7.5	7.35	7.65	5	15	80	1.0	1	5.0	2.5	5.3	5
BW-D1D8V2T1G-2	2WD	8.2	8.04	8.36	5	15	80	1.0	0.7	5.0	3.2	6.2	5
BW-D1D9V1T1G-2	2WE	9.1	8.92	9.28	5	15	100	1.0	0.5	6.0	3.8	7.0	5
BW-D1D10VT1G-2	2WF	10	9.80	10.20	5	20	150	1.0	0.2	7.0	4.5	8.0	5
BW-D1D11VT1G-2	2WG	11	10.78	11.22	5	20	150	1.0	0.1	8.0	5.4	9.0	5
BW-D1D12VT1G-2	2WH	12	11.76	12.24	5	25	150	1.0	0.1	8.0	6.0	10.0	5
BW-D1D13VT1G-2	2WI	13	12.74	13.26	5	30	170	1.0	0.1	8.0	7.0	11.0	5
BW-D1D15VT1G-2	2WJ	15	14.70	15.30	5	30	200	1.0	0.1	10.5	9.2	13.0	5
BW-D1D16VT1G-2	2WK	16	15.68	16.32	5	40	200	1.0	0.1	11.2	10.4	14.0	5
BW-D1D18VT1G-2	2WL	18	17.64	18.36	5	45	225	1.0	0.1	12.6	12.4	16.0	5
BW-D1D20VT1G-2	2WM	20	19.60	20.40	5	55	225	1.0	0.1	14.0	14.4	18.0	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

Version: A0 2020-09-22

Part Numbering System

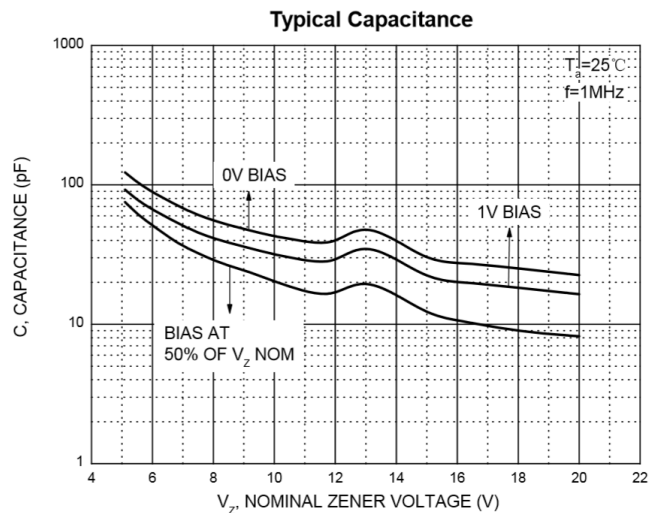
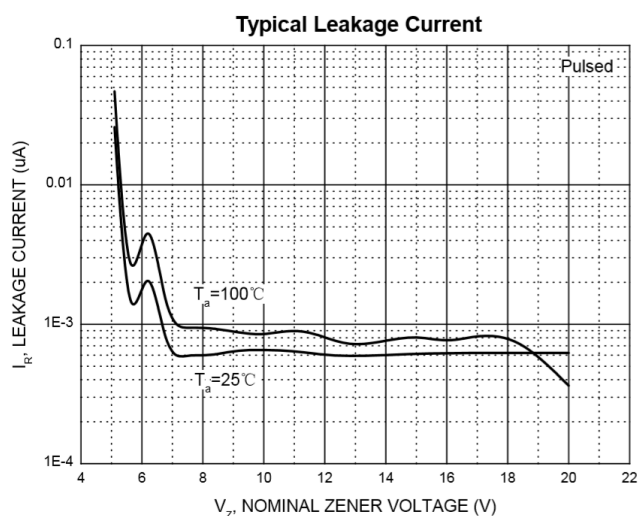
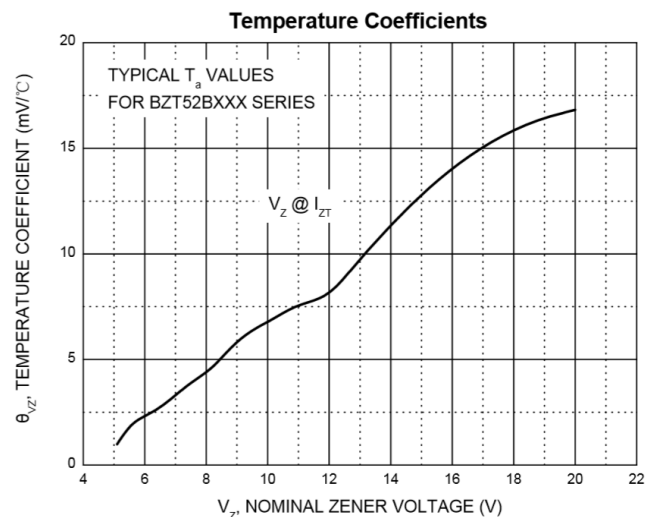
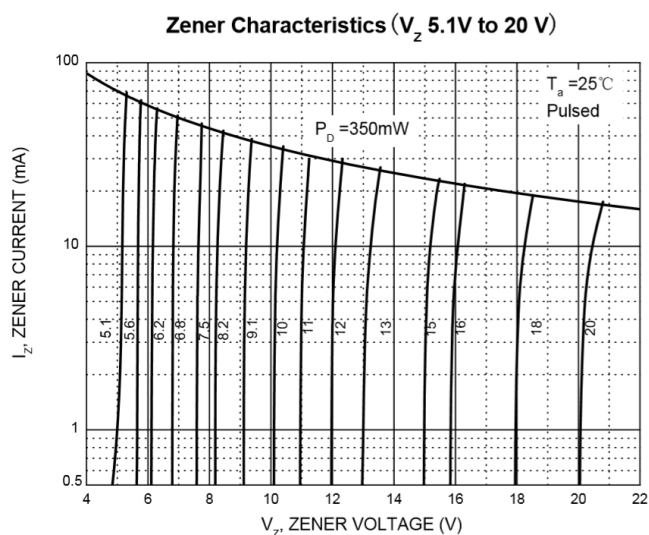
BW	D1	D	XXX	T1	G	2
(1)	(2)	(3)	(4)	(5)	(6)	(7)

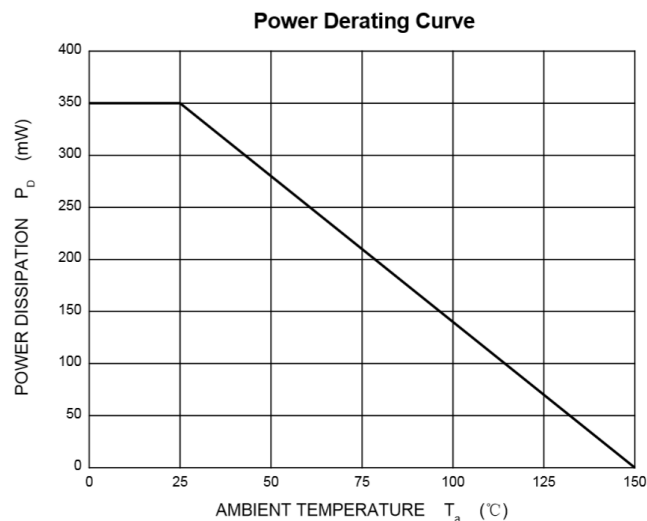
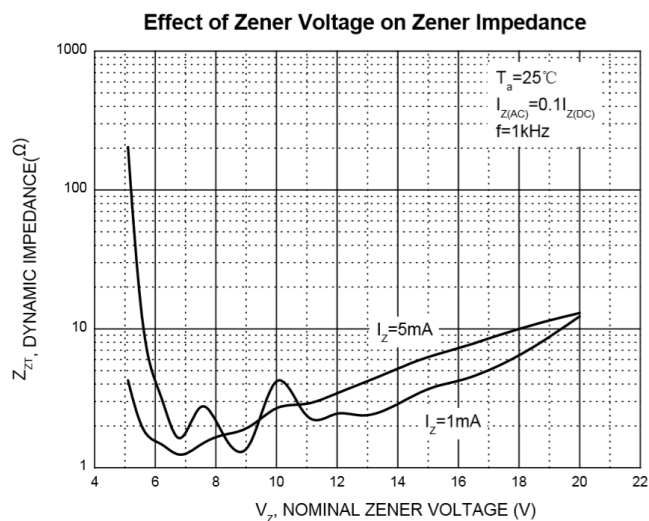
- (1) Bencent Zener Diode
- (2) Package: SOD-123
- (3) Power Dissipation: 350mW
- (4) Work Voltage: 5.1V-20V
- (5) Package type: Taping, 3K/R
- (6) Green
- (7) Tolerance of accuracy: $\pm 2\%$

Mark

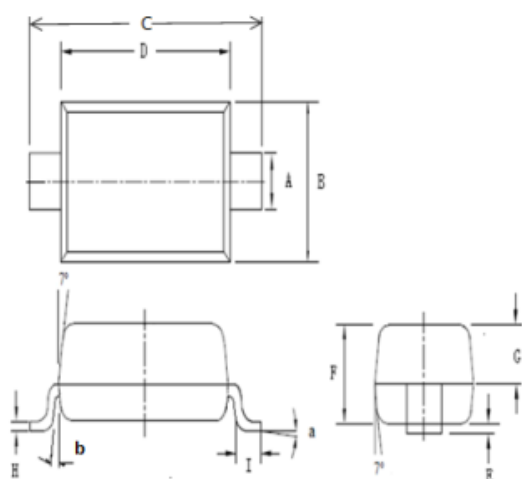


Typical Characteristics





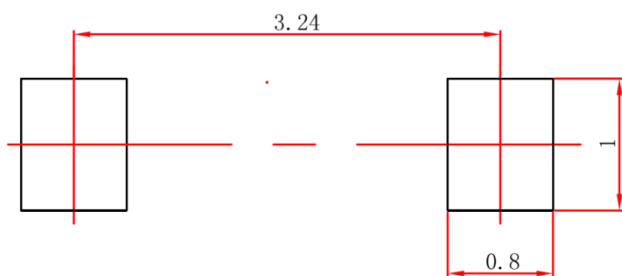
Product Dimensions



SOD123

REF	mm	inch
A	0.45~0.65	0.018~0.026
B	1.40~1.70	0.055~0.067
C	3.55~3.85	0.140~0.152
D	2.55~2.85	0.100~0.112
E	0.00~0.10	0.000~0.004
F	1.20max	0.047max
G	0.60~0.70	0.024~0.028
H	0.075~0.125	0.003~0.005
I	0.25~0.45	0.010~0.018
a	$0^\circ \sim 6^\circ$	
b	$0.4^\circ \sim 0.8^\circ$	

SOD-123 Suggested Pad Layout



Notes:

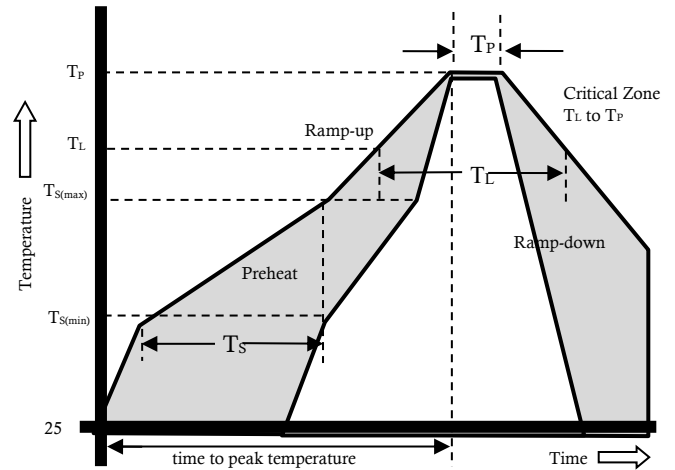
1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purpose only.

Planar Plastic Zener Diode

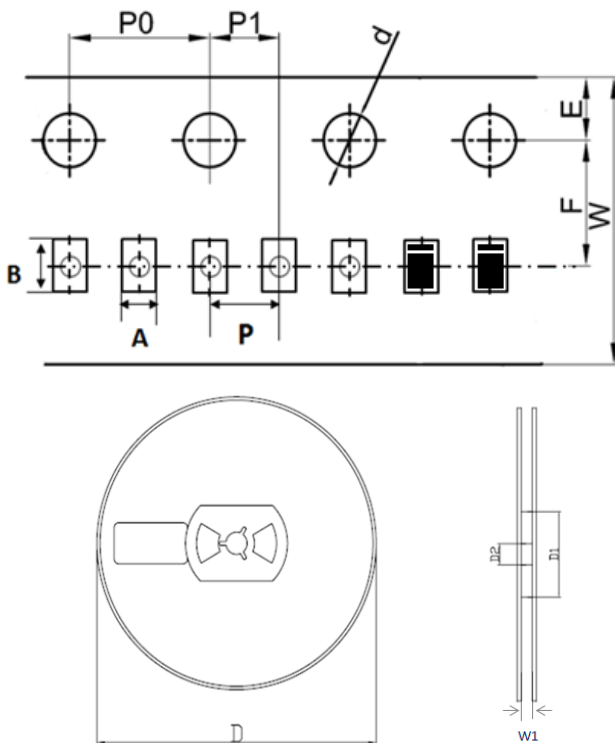
Version: A0 2020-09-22

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	1.90+/-0.20	0.075+/-0.008
B	4.10+/-0.20	0.161+/-0.008
d	1.50+0.1/-0	0.059+0.004/-0
d1	1.10+/-0.10	0.043+/-0.004
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