

Planar Plastic Zener Diode

Version: A0 2020-09-22


Features

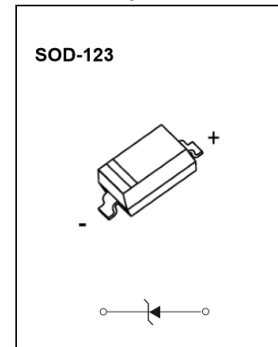
- Planar Die Construction
- Ultra-Small Surface Mount Package
- General purpose, Medium Current
- Ideally Suited for Automated Assembly Processes
- Tolerance approximately: $\pm 5\%$

Application Information

- Cellular handsets
- Tablets
- Other portable devices

Agency Approvals

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

Exterior

Package (top view)

Schematic(top view)

Maximum Ratings(Ta=25°C 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	°C/W
Junction Temperature	T _j	150	°C
Storage Temperature range	T _{stg}	-55~+150	°C

Notes: 1. Device mounted on ceramic PCB; 7.6 mm x 9.4 mm x 0.87 mm with pad areas 25 mm².
2. Tested with pulses, T_p ≤ 1.0ms.

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Part Number and Electrical Parameter

Part Number	Code	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse Current	
		V _Z @I _{ZT}			I _{ZT}	Z _{ZT} @I _{ZT}	Z _{ZK} @I _{ZK}	I _{ZK}	I _R	V _R
		Nom(V)	Min(V)	Max(V)	(mA)	(Ω)		(mA)	(μA)	(V)
BW-D1D2V4T1G-5	C1	2.4	2.28	2.52	20	30	1200	0.25	100	1.0
BW-D1D2V7T1G-5	C3	2.7	2.57	2.84	20	30	1300	0.25	75	1.0
BW-D1D3V0T1G-5	C5	3.0	2.85	3.15	20	30	1600	0.25	50	1.0
BW-D1D3V3T1G-5	G1	3.3	3.14	3.47	20	28	1600	0.25	25	1.0
BW-D1D3V6T1G-5	G2	3.6	3.42	3.78	20	24	1700	0.25	15	1.0
BW-D1D3V9T1G-5	G3	3.9	3.71	4.10	20	23	1900	0.25	10	1.0
BW-D1D4V3T1G-5	G4	4.3	4.09	4.52	20	22	2000	0.25	5	1.0
BW-D1D4V7T1G-5	G5	4.7	4.47	4.94	20	19	1900	0.25	5	2.0
BW-D1D5V1T1G-5	E1	5.1	4.85	5.36	20	17	1600	0.25	5	2.0
BW-D1D5V6T1G-5	E2	5.6	5.32	5.88	20	11	1600	0.25	5	3.0
BW-D1D6V0T1G-5	E3	6.0	5.70	6.30	20	7	1600	0.25	5	3.5
BW-D1D6V2T1G-5	E4	6.2	5.89	6.51	20	7	1000	0.25	5	4.0
BW-D1D6V8T1G-5	E5	6.8	6.46	7.14	20	5	750	0.25	3	5.0
BW-D1D7V5T1G-5	F1	7.5	7.13	7.88	20	6	500	0.25	3	6.0
BW-D1D8V2T1G-5	F2	8.2	7.79	8.61	20	8	500	0.25	3	6.5
BW-D1D8V7T1G-5	F3	8.7	8.27	9.14	20	8	600	0.25	3	6.5
BW-D1D9V1T1G-5	F4	9.1	8.65	9.56	20	10	600	0.25	3	7.0
BW-D1D10VT1G-5	F5	10	9.50	10.50	20	17	600	0.25	3	8.0
BW-D1D11VT1G-5	H1	11	10.45	11.55	20	22	600	0.25	2.0	8.4
BW-D1D12VT1G-5	H2	12	11.40	12.60	20	30	600	0.25	1.0	9.1
BW-D1D13VT1G-5	H3	13	12.35	13.65	9.5	13	600	0.25	0.5	9.9
BW-D1D14VT1G-5	H4	14	13.30	14.70	9.0	15	600	0.25	0.1	10
BW-D1D15VT1G-5	H5	15	14.25	15.75	8.5	16	600	0.25	0.1	11
BW-D1D16VT1G-5	J1	16	15.20	16.80	7.8	17	600	0.25	0.1	12
BW-D1D18VT1G-5	J3	18	17.10	18.90	7.0	21	600	0.25	0.1	14
BW-D1D20VT1G-5	J5	20	19.00	21.00	6.2	25	600	0.25	0.1	15
BW-D1D22VT1G-5	K1	22	20.90	23.10	5.6	29	600	0.25	0.1	17
BW-D1D24VT1G-5	K2	24	22.80	25.20	5.2	33	600	0.25	0.1	18
BW-D1D25VT1G-5	K3	25	23.75	26.25	5.0	35	600	0.25	0.1	19
BW-D1D27VT1G-5	K4	27	25.65	28.35	5.0	41	600	0.25	0.1	21
BW-D1D28VT1G-5	K5	28	26.60	29.40	4.5	44	600	0.25	0.1	21
BW-D1D30VT1G-5	M1	30	28.50	31.50	4.2	49	600	0.25	0.1	23
BW-D1D33VT1G-5	M2	33	31.35	34.65	3.8	58	700	0.25	0.1	25
BW-D1D36VT1G-5	M3	36	34.20	37.80	3.4	70	700	0.25	0.1	27
BW-D1D39VT1G-5	M4	39	37.05	40.95	3.2	80	800	0.25	0.1	30

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Part Numbering System

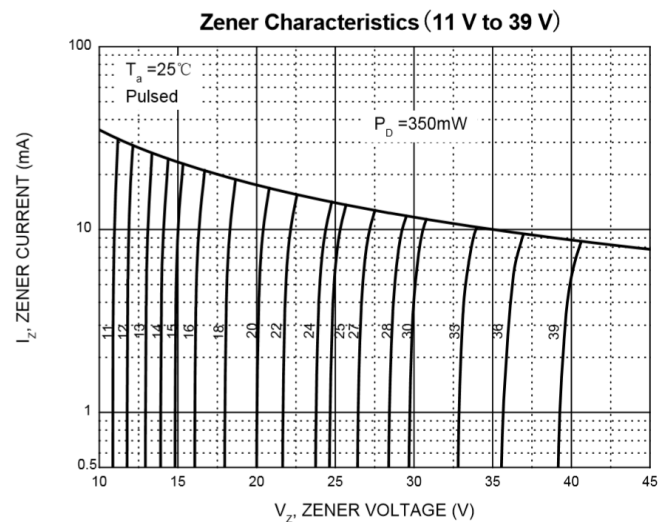
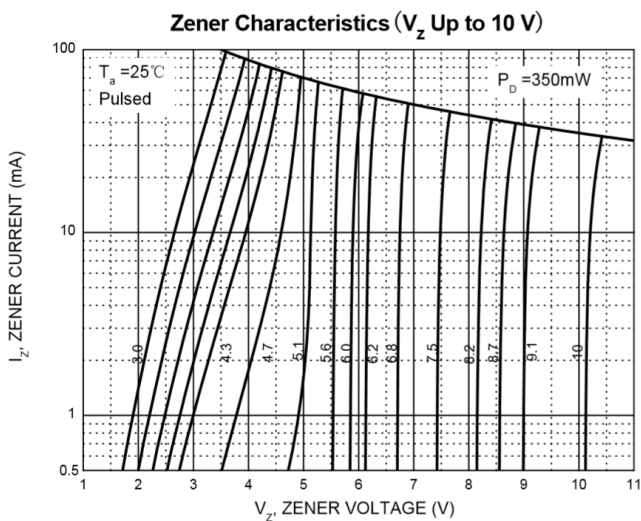
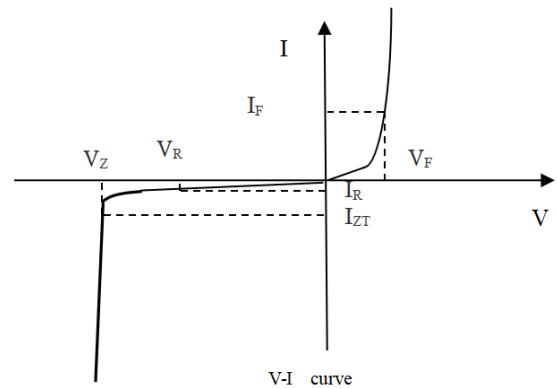
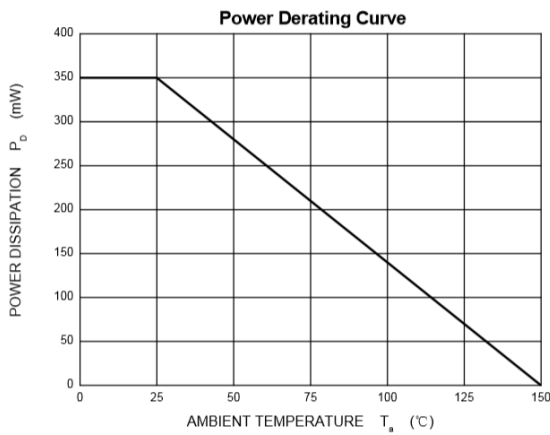
Mark

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



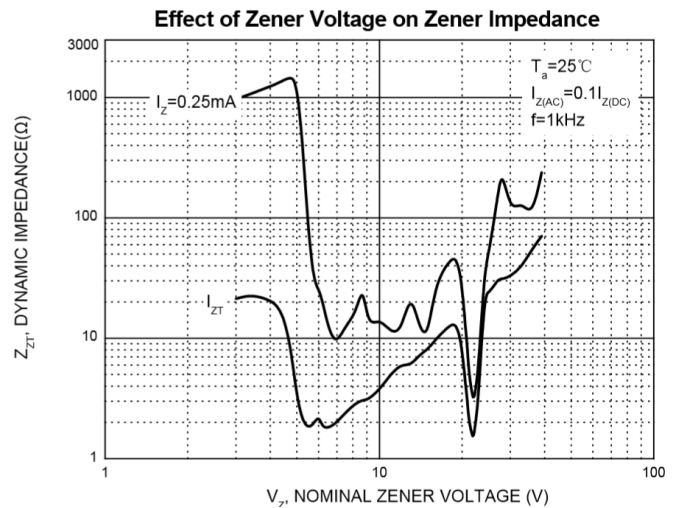
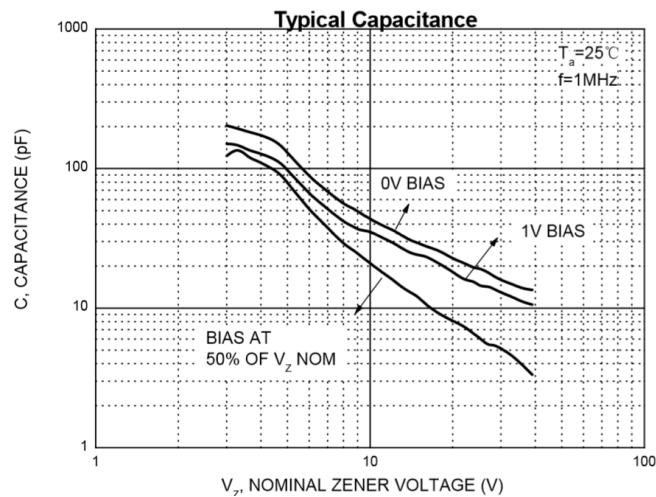
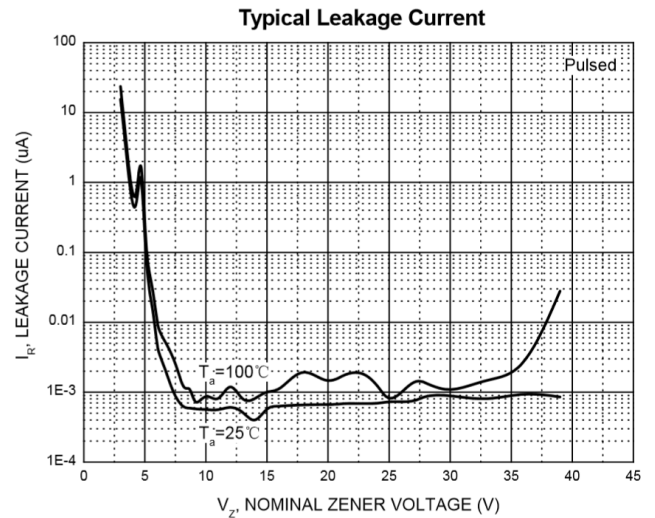
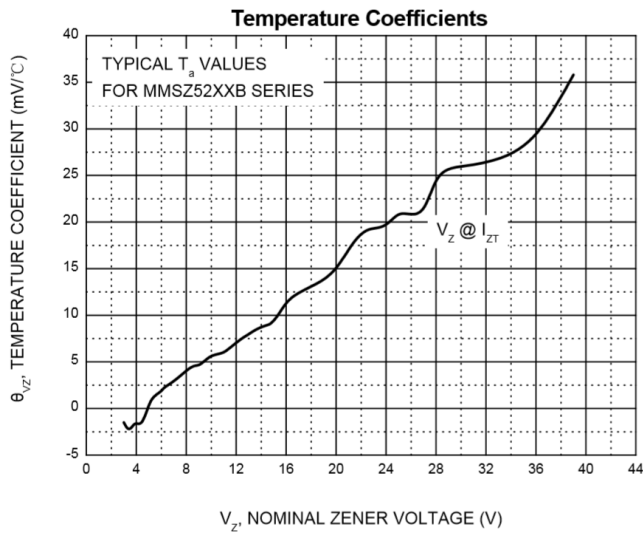
- (1) Bencent Zener Diode
- (2) Package: SOD-123
- (3) Power Dissipation: 350mW
- (4) Work Voltage: 2.4V-39V
- (5) Package type: Taping, 3K/R
- (6) Green
- (7) Tolerance of accuracy: $\pm 5\%$

Typical Characteristics

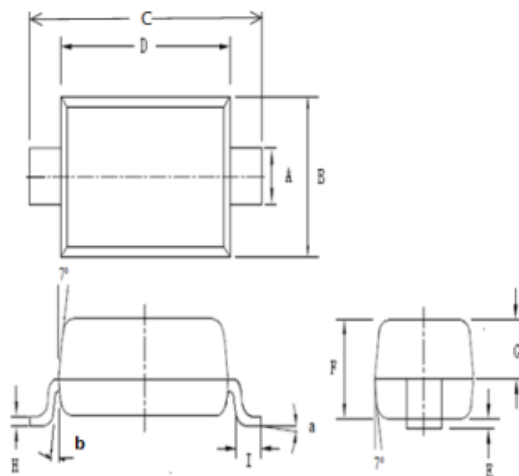


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Version: A0 2020-09-22



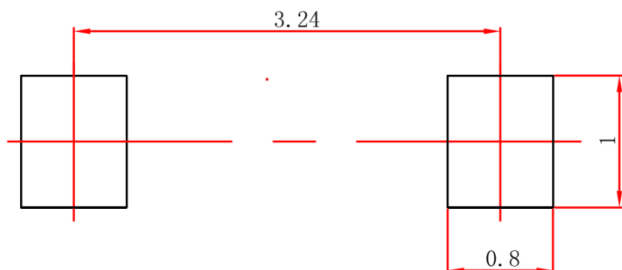
Product Dimensions



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°~6°	
b	0.4°~0.8°	

SOD-123 Suggested Pad Layout

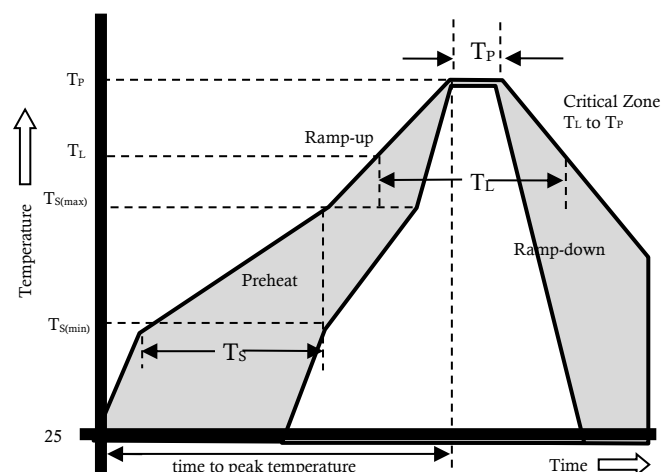


Notes:

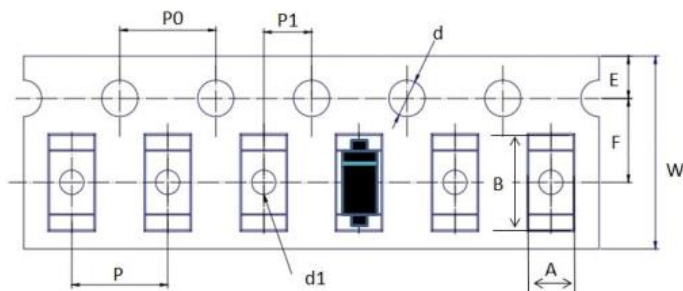
1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.05 mm.
3. The pad layout is for reference purpose only.

Reflow Profile

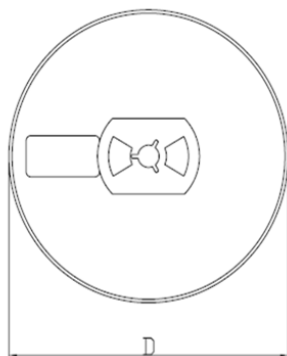
Reflow Condition		Pb-Free assembly
Pre Heat	Temperature Min	150°C
	Temperature Max	200°C
	Time (min to max)	60 – 180 secs
Average ramp up rate (Liquid) Tamp (T _L) to peak		3°C/s max
T _S (max) to T _L - Ramp-up Rate		3°C/s max
Reflow	- Temperature (T _L) (Liquid)	217°C
	- Temperature (T _L)	60 – 150 secs
Peak Temperature (T _P)		260+0/-5 °C
Time within 5°C of actual peak Temperature (T _P)		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