

SOD-323 Plastic-Encapsulate Diodes

MM3Zxxx Series Zener Diode

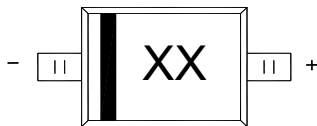
SOD-323

RoHS
COMPLIANT

Features

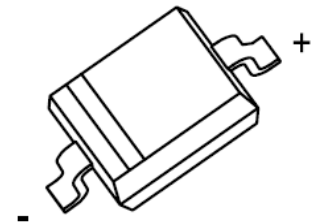
- Standard Zener Breakdown Voltage Range - 2.4 V to 75 V
- Steady State Power Rating of 300 mW
- General purpose, medium current
- Ideally suited for automated assembly processes
- Tolerance approximately $\pm 5\%$

Marking



XX= Device code, see table on page2 the marking code

The marking bar indicates the cathode



Equivalent circuit



Maximum Ratings ($T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Forward voltage (Note 2) @ $I_F = 10\text{mA}$	V_F	0.9	V
Power dissipation (Note 1)	P_D	300	mW
Thermal Resistance Junction to Ambient Air	$R_{\theta JA}$	417	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_J	$-55 \sim +150$	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	$-55 \sim +150$	$^\circ\text{C}$

Electrical Characteristics($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Type	Marking Code	Zener Voltage Range ^(Note 2)			Dynamic Impedance ^(Note 3)		Reverse Leakage Current	
		V_{Znom} V	I_{ZT}	for Z_T	$Z_{ZT} (Max.)$	at I_{ZT}	$I_R (Max.)$	at V_R
			mA	V	Ω	mA	μA	V
MM3Z2V0	B0	2.0	5	1.8...2.15	100	5	120	0.5
MM3Z2V2	C0	2.2	5	2.08...2.33	100	5	120	0.7
MM3Z2V4	1C	2.4	5	2.28...2.56	100	5	120	1
MM3Z2V7	1D	2.7	5	2.5...2.9	110	5	120	1
MM3Z3V0	1E	3.0	5	2.8...3.2	120	5	50	1
MM3Z3V3	1F	3.3	5	3.1...3.5	130	5	20	1
MM3Z3V6	1H	3.6	5	3.4...3.8	130	5	10	1
MM3Z3V9	1J	3.9	5	3.7...4.1	130	5	5	1
MM3Z4V3	1K	4.3	5	4...4.6	130	5	5	1
MM3Z4V7	1M	4.7	5	4.4...5	130	5	2	1
MM3Z5V1	1N	5.1	5	4.8...5.4	130	5	2	1.5
MM3Z5V6	1P	5.6	5	5.2...6	80	5	1	2.5
MM3Z6V2	1R	6.2	5	5.8...6.6	50	5	1	3
MM3Z6V8	1X	6.8	5	6.4...7.2	30	5	0.5	3.5
MM3Z7V5	1Y	7.5	5	7...7.9	30	5	0.5	4
MM3Z8V2	1Z	8.2	5	7.7...8.7	30	5	0.5	5
MM3Z9V1	2A	9.1	5	8.5...9.6	30	5	0.5	6
MM3Z10	2B	10	5	9.4...10.6	30	5	0.1	7
MM3Z11	2C	11	5	10.4...11.6	30	5	0.1	8
MM3Z12	2D	12	5	11.4...12.7	35	5	0.1	9
MM3Z13	2E	13	5	12.4...14.1	35	5	0.1	10
MM3Z15	2F	15	5	13.8...15.6	40	5	0.1	11
MM3Z16	2H	16	5	15.3...17.1	40	5	0.1	12
MM3Z18	2J	18	5	16.8...19.1	45	5	0.1	13
MM3Z20	2K	20	5	18.8...21.2	50	5	0.1	15
MM3Z22	2M	22	5	20.8...23.3	55	5	0.1	17
MM3Z24	2N	24	5	22.8...25.6	60	5	0.1	19
MM3Z27	2P	27	5	25.1...28.9	70	2	0.1	21
MM3Z30	2R	30	5	28...32	80	2	0.1	23
MM3Z33	2X	33	5	31...35	80	2	0.1	25
MM3Z36	2Y	36	5	34...38	90	2	0.1	27
MM3Z39	2Z	39	2.5	37...41	100	2	2	30
MM3Z43	3A	43	2.5	40...46	130	2	2	33
MM3Z47	3B	47	2.5	44...50	150	2	2	36
MM3Z51	3C	51	2.5	48...54	180	2	1	39
MM3Z56	3D	56	2.5	52...60	180	2	1	43
MM3Z62	3E	62	2.5	58...66	200	2	0.2	47
MM3Z68	3F	68	2.5	64...72	250	2	0.2	52
MM3Z75	3H	75	2.5	70...79	300	2	0.2	57

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. $f = 1\text{kHz}$.

Typical Characteristics

Fig 1. Power Derating Curve

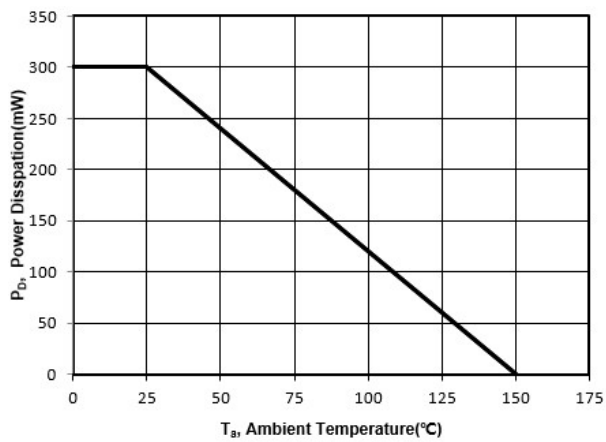


Fig 2. Forward Characteristics Curve

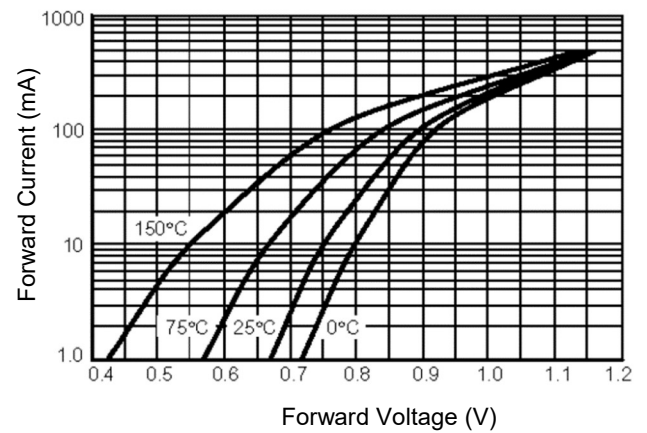


Fig 3. Zener Characteristics Curve

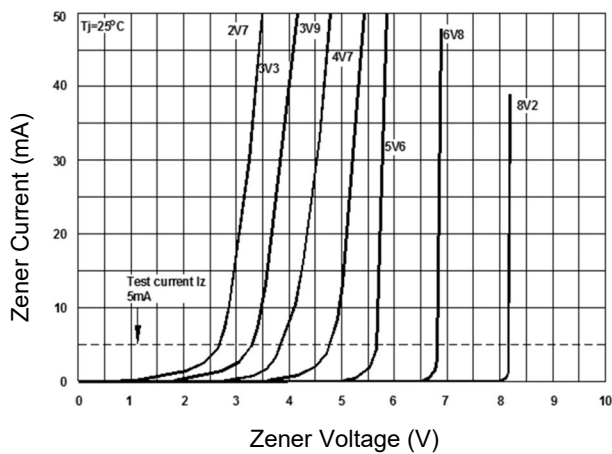
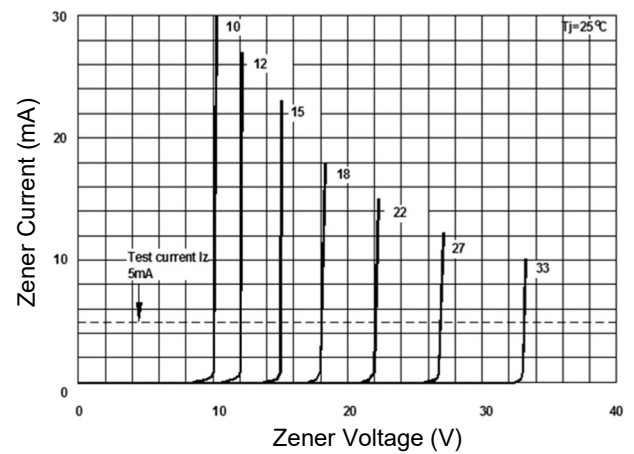
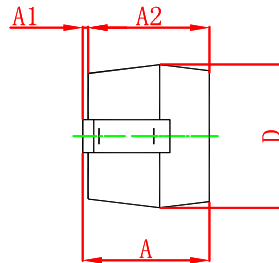
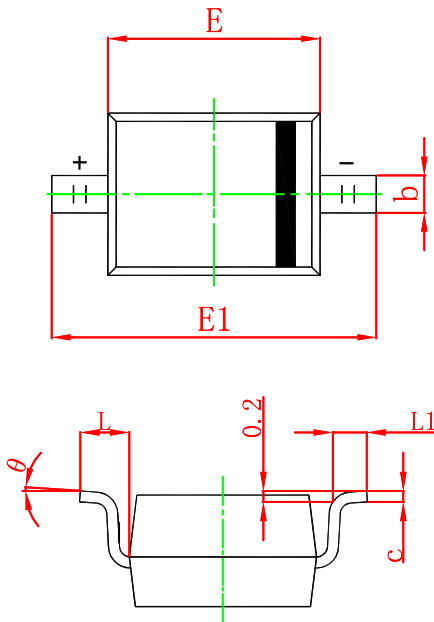


Fig 4. Zener Characteristics Curve

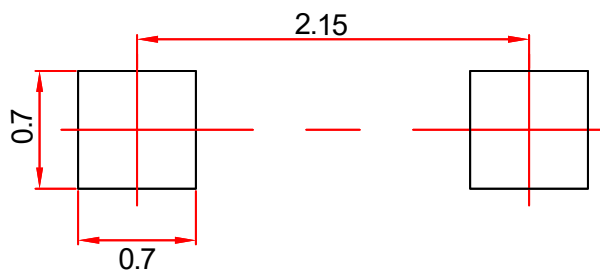


SOD-323 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	--	1.100	--	0.043
A1	0.000	0.100	0.000	0.004
A2	0.800	1.000	0.031	0.039
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	1.200	1.400	0.047	0.055
E	1.600	1.800	0.063	0.071
E1	2.500	2.750	0.098	0.108
L	0.475 REF		0.019 REF	
L1	0.250	0.400	0.010	0.016
θ	0°	8°	0°	8°

SOD-323 Suggested Pad Layout



Note:

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