

# MMSZ52xxB Series

Surface Mount Zener Diodes

Vz Range: 2.4 to 43V Power Dissipation: 500mW

## Features

- Planar Die Construction
- Ultra-Small Surface Mount Package
- General Purpose, Medium Current
- Ideal for Automated Assembly Process



Package: SOD-123



## Absolute Maximum Ratings

(T<sub>A</sub>=25°C unless otherwise specified)

Characteristic	Symbol	Value	Unit
Forward Voltage @ I <sub>F</sub> =10mA	V <sub>F</sub>	0.9	V
Power Dissipation	P <sub>d</sub>	500	mW
Thermal resistance, junction to ambient air	R <sub>θJA</sub>	350	°C/W
Junction temperature	T <sub>J</sub>	150	°C
Storage temperature range	T <sub>STG</sub>	-65 to +150	°C

Notes: 1. Device mounted on ceramic PCB; 7.6 mm x 9.4 mm x 0.87 mm with pad areas 25 mm<sup>2</sup>.  
 2. Tested with pulses T<sub>p</sub> ≤ 1.0ms.

## Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise specified)

Type Number	Type Code	Zener Voltage Range			Test Current	Maximum Zener Impedance		Maximum Reverse Leakage Current	
		V <sub>Z</sub> @I <sub>ZT</sub>			I <sub>ZT</sub>	Z <sub>ZT</sub> @I <sub>ZT</sub>	Z <sub>ZK</sub> @I <sub>ZK</sub> =0.25mA	I <sub>R</sub>	@V <sub>R</sub>
		Nom(V)	Min(V)	Max(V)	mA	Ω		μA	
MMSZ5221B	C1	2.4	2.28	2.52	20	30	1200	100	1.0
MMSZ5223B	C3	2.7	2.57	2.84	20	30	1300	75	1.0
MMSZ5225B	C5	3.0	2.85	3.15	20	30	1600	50	1.0
MMSZ5226B	G1	3.3	3.14	3.47	20	28	1600	25	1.0
MMSZ5227B	G2	3.6	3.42	3.78	20	24	1700	15	1.0
MMSZ5228B	G3	3.9	3.71	4.10	20	23	1900	10	1.0
MMSZ5229B	G4	4.3	4.09	4.52	20	22	2000	5.0	1.0
MMSZ5230B	G5	4.7	4.47	4.94	20	19	1900	5.0	2.0
MMSZ5231B	E1	5.1	4.85	5.36	20	17	1600	5.0	2.0
MMSZ5232B	E2	5.6	5.32	5.88	20	11	1600	5.0	3.0
MMSZ5233B	E3	6.0	5.70	6.30	20	7	1600	5.0	3.5
MMSZ5234B	E4	6.2	5.89	6.51	20	7	1000	5.0	4.0
MMSZ5235B	E5	6.8	6.46	7.14	20	5	750	3.0	5.0
MMSZ5236B	F1	7.5	7.13	7.88	20	6	500	3.0	6.0
MMSZ5237B	F2	8.2	7.79	8.61	20	8	500	3.0	6.5
MMSZ5238B	F3	8.7	8.27	9.14	20	8	600	3.0	6.5
MMSZ5239B	F4	9.1	8.65	9.56	20	10	600	3.0	7.0
MMSZ5240B	F5	10	9.50	10.50	20	17	600	3.0	8.0
MMSZ5241B	H1	11	10.45	11.55	20	22	600	2.0	8.4
MMSZ5242B	H2	12	11.40	12.60	20	30	600	1.0	9.1
MMSZ5243B	H3	13	12.35	13.65	9.5	13	600	0.5	9.9
MMSZ5245B	H5	15	14.25	15.75	8.5	16	600	0.1	11
MMSZ5246B	J1	16	15.20	16.80	7.8	17	600	0.1	12
MMSZ5247B	J2	17	16.15	17.85	7.5	19	600	0.1	13
MMSZ5248B	J3	18	17.10	18.90	7.0	21	600	0.1	14
MMSZ5250B	J5	20	19.00	21.00	6.2	25	600	0.1	15
MMSZ5251B	K1	22	20.90	23.10	5.6	29	600	0.1	17
MMSZ5252B	K2	24	22.80	25.20	5.2	33	600	0.1	18
MMSZ5254B	K4	27	25.65	28.35	5.0	41	600	0.1	21
MMSZ5255B	K5	28	26.60	29.40	4.5	44	600	0.1	21
MMSZ5256B	M1	30	28.50	31.5	4.2	49	600	0.1	23
MMSZ5257B	M2	33	31.35	34.65	3.8	58	700	0.1	25
MMSZ5258B	M3	36	34.20	37.80	3.4	70	700	0.1	27
MMSZ5259B	M4	39	37.05	40.95	3.2	80	800	0.1	30
MMSZ5260B	M5	43	40.85	45.15	3.0	93	900	0.1	33

## Typical Characteristic Curves

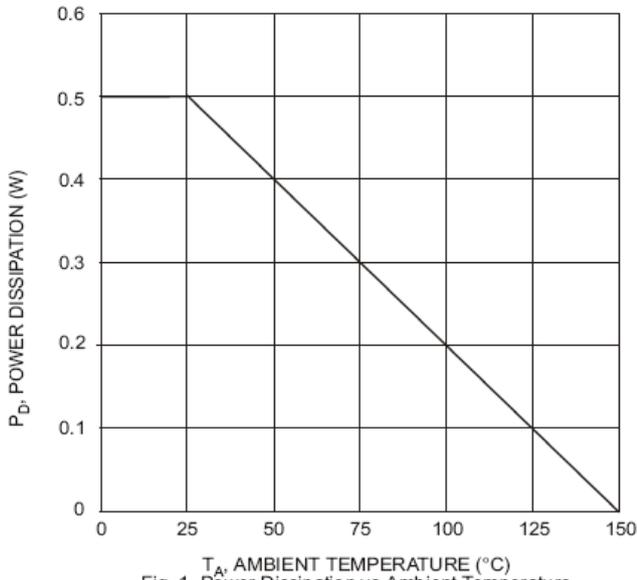


Fig. 1 Power Dissipation vs Ambient Temperature

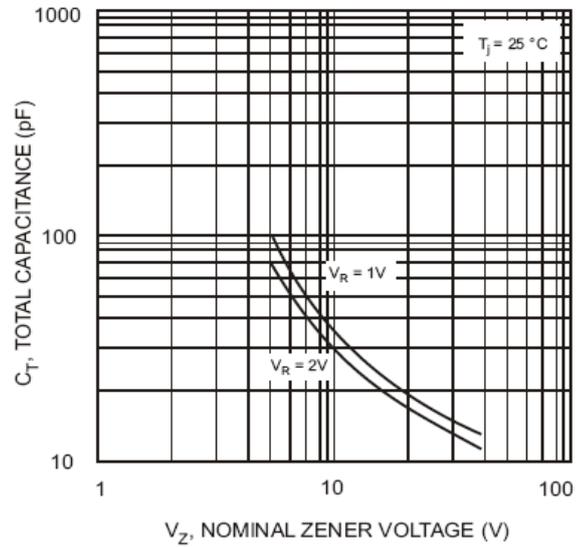


Fig. 2 Total Capacitance vs Nominal Zener Voltage

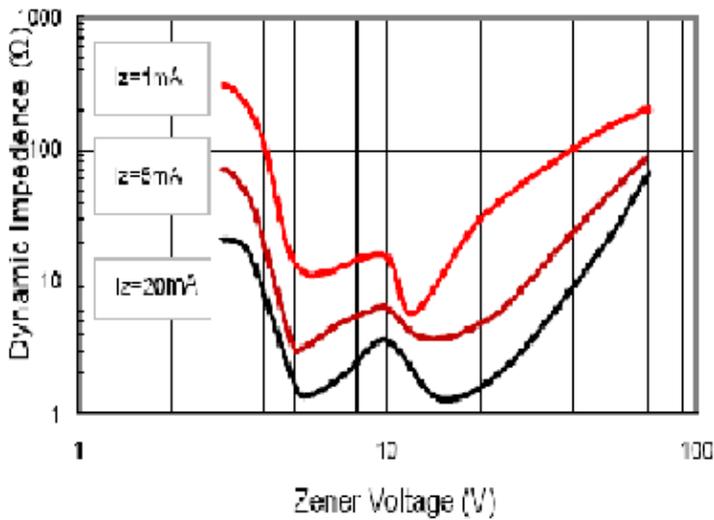


Fig. 3 Effect of Zener Voltage on Impedance

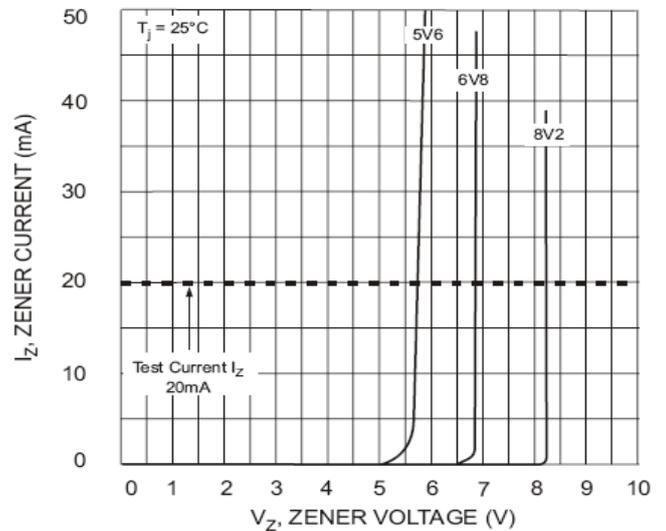


Fig. 4 Zener Breakdown Characteristics

## Typical Characteristic Curves

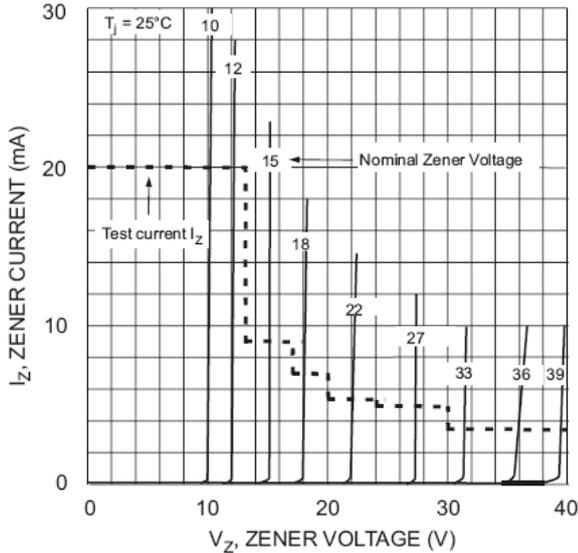


Fig. 5 Zener Breakdown Characteristics

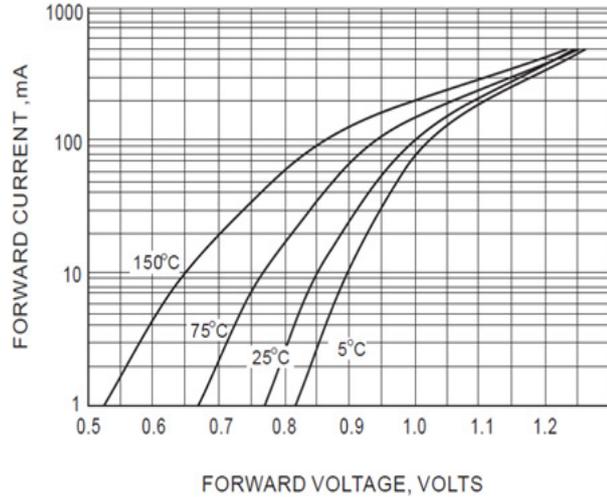
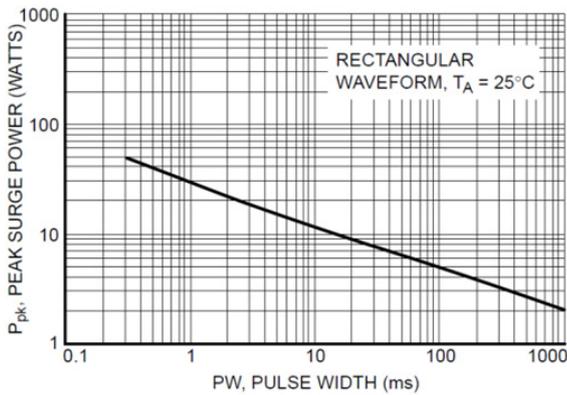


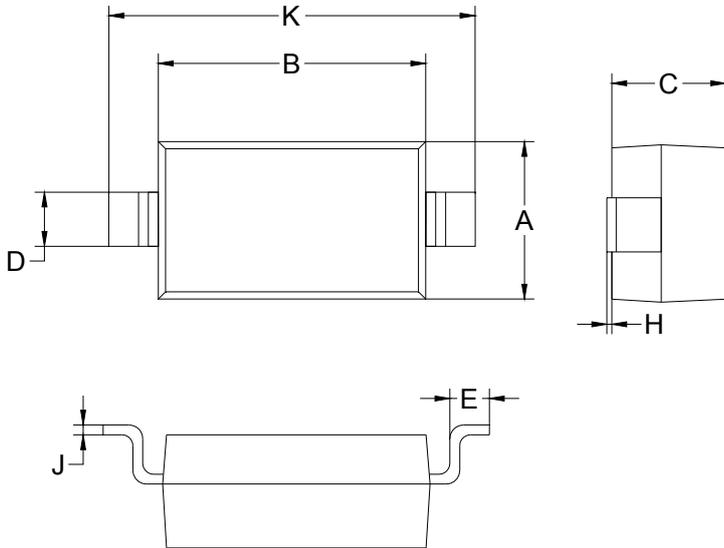
Fig. 6 Forward voltages vs. forward currents chart with multiple temperature curves (example shown below)



### Maximum Nonrepetitive Surge Power

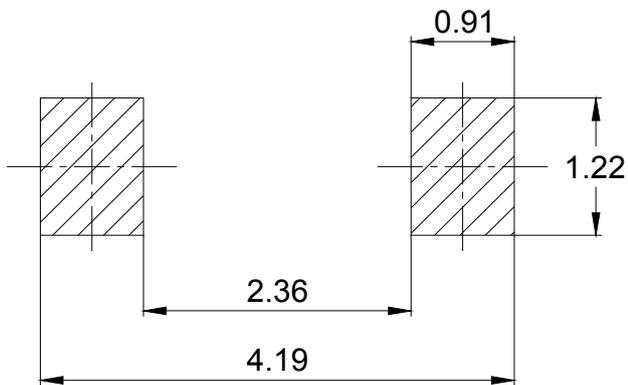
Fig. 7 Non-repetitive surge power vs. pulse duration chart @ 25°C (example shown below)

## Package Outline Dimensions SOD-123



SOD-123		
Dim	M	Max
A	1.4	1.75
B	2.5	2.85
C	1.15 Typical	
D	0.55 Typical	
E	0.2	0.45
H	0.0	0.10
J	0.1 Typical	
K	3.5	3.85
All Dimensions in mm		

## Recommended Pad Layout



Unit: mm