

# MMSZ52xxBS Series

Plastic-Encapsulate Zener Diodes

V<sub>Z</sub> Range: 2.4 to 39V Power Dissipation: 200mW

## Features

- Low zener impedance
- Power dissipation of 200mW
- High stability and high reliability



SOD-323

## Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Forward Voltage @ I <sub>F</sub> = 10mA	V <sub>F</sub>	0.9 <sup>2</sup>	V
Power Dissipation	P <sub>D</sub>	200 <sup>1</sup>	mW
Storage Temperature Range	T <sub>STG</sub>	-65 to +150	°C

- Notes: 1. Device mounted on ceramic PCB: 7.6mm x 9.4mm x 0.87mm with pad areas 25mm<sup>2</sup>  
 2. Short duration test pulse used to minimize self-heating effect  
 3. f=1KHz

## Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise specified, V<sub>F</sub>≤0.9V@I<sub>F</sub>=10mA)

Type Number	Type Code	Zener Voltage Range V <sub>Z</sub> @I <sub>ZT</sub>				Test Current Max	Maximum Zener Impedance Z <sub>ZK</sub>		Maximum Reverse Leakage Current I <sub>R</sub>	
		Min	Nom	Max	I <sub>ZT</sub>		Max	I <sub>ZK</sub>	Max	V <sub>R</sub>
		(V)	(V)	(V)	mA	Ω	Ω	mA	uA	V
MMSZ5221BS	C1	2.28	2.4	2.52	20	30	1200	0.25	100	1
MMSZ5223BS	C3	2.57	2.7	2.84	20	30	1300	0.25	75	1
MMSZ5225BS	C5	2.85	3.0	3.15	20	30	1600	0.25	50	1
MMSZ5226BS	G1	3.14	3.3	3.47	20	28	1600	0.25	25	1
MMSZ5227BS	G2	3.42	3.6	3.78	20	24	1700	0.25	15	1
MMSZ5228BS	G3	3.71	3.9	4.1	20	23	1900	0.25	10	1
MMSZ5229BS	G4	4.09	4.3	4.52	20	22	2000	0.25	5	1
MMSZ5230BS	G5	4.47	4.7	4.94	20	19	1900	0.25	5	2
MMSZ5231BS	E1	4.85	5.1	5.36	20	17	1600	0.25	5	2
MMSZ5232BS	E2	5.32	5.6	5.88	20	11	1600	0.25	5	3
MMSZ5233BS	E3	5.7	6.0	6.3	20	7	1600	0.25	5	3.5
MMSZ5234BS	E4	5.89	6.2	6.51	20	7	1000	0.25	5	4
MMSZ5235BS	E5	6.46	6.8	7.14	20	5	750	0.25	3	5

# MMSZ52xxBS Series

Plastic-Encapsulate Zener Diodes

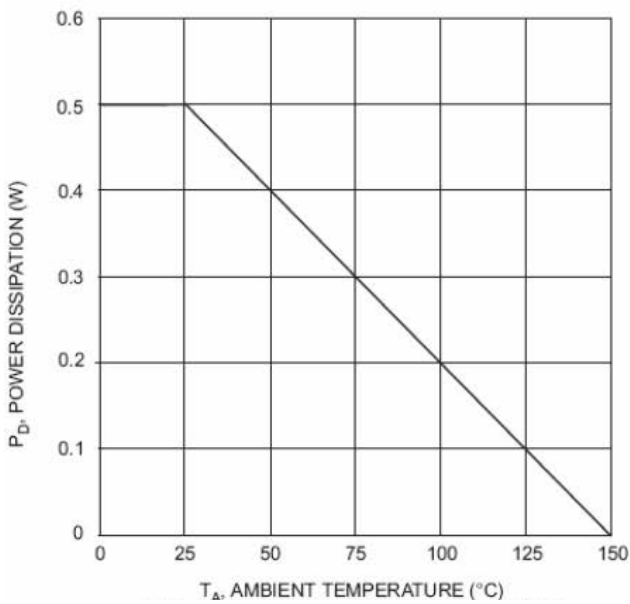
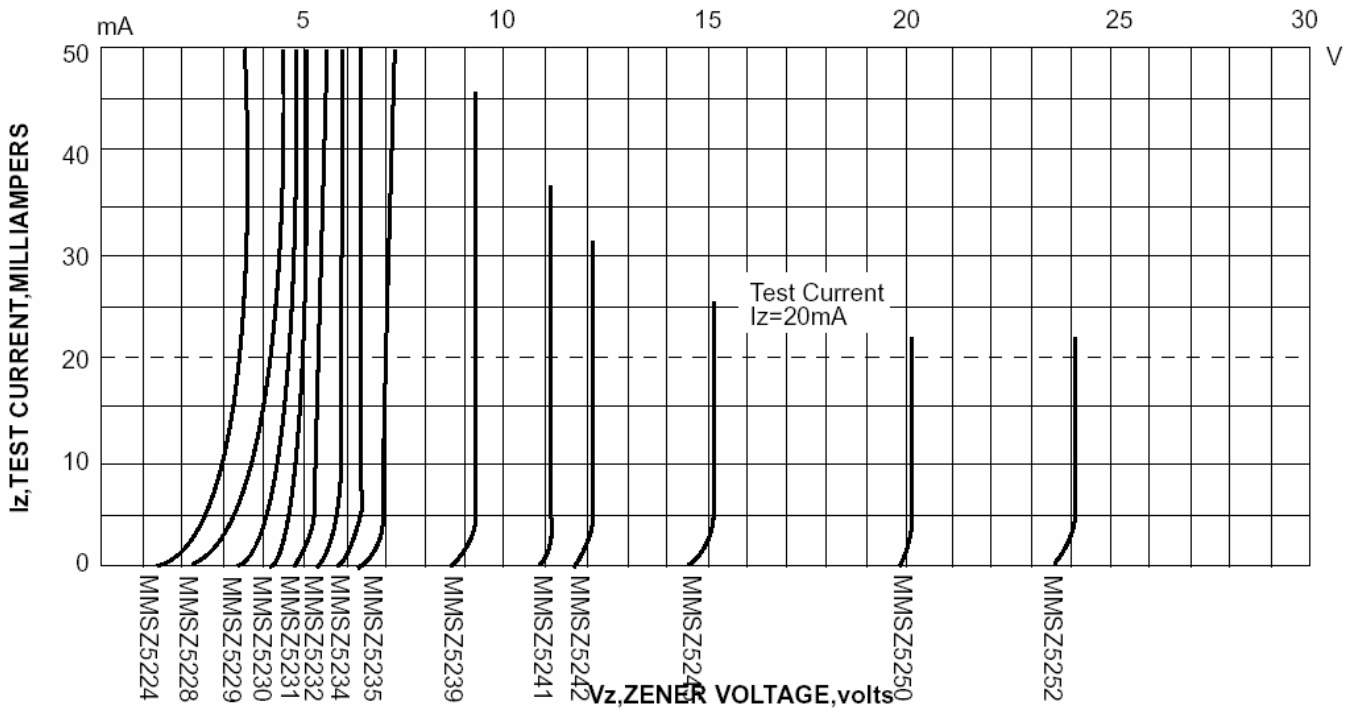
Vz Range: 2.4 to 39V Power Dissipation: 200mW

## Electrical Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise specified, $V_F\leq 0.9\text{V}@I_F=10\text{mA}$ )

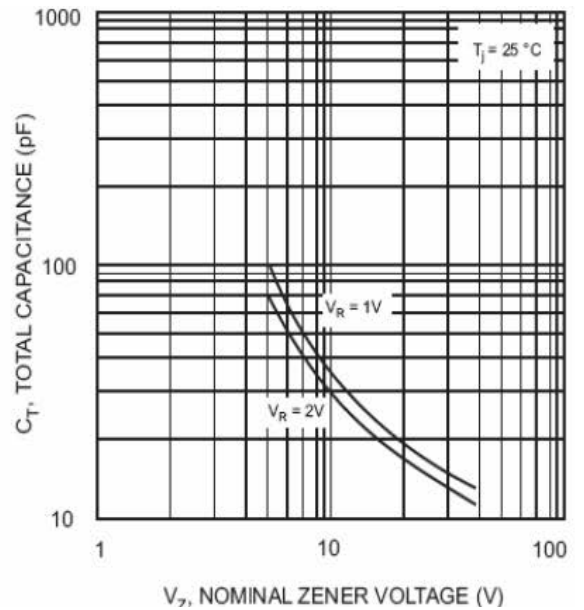
Type Number	Type Code	Zener Voltage Range $V_Z@I_{ZT}$				Test Current	Maximum Zener Impedance $Z_{ZK}$			Maximum Reverse Leakage Current $I_R$	
		Min	Nom	Max	$I_{ZT}$	Max	Max	$I_{ZK}$	Max	$V_R$	
		(V)	(V)	(V)	mA	$\Omega$	$\Omega$	mA	$\mu\text{A}$	V	
MMSZ5236BS	F1	7.13	7.5	7.88	20	6	500	0.25	3	6	
MMSZ5237BS	F2	7.79	8.2	8.61	20	8	500	0.25	3	6.5	
MMSZ5238BS	F3	8.27	8.7	9.14	20	8	600	0.25	3	6.5	
MMSZ5239BS	F4	8.65	9.1	9.56	20	10	600	0.25	3	7	
MMSZ5240BS	F5	9.5	10	10.5	20	17	600	0.25	3	8.0	
MMSZ5241BS	H1	10.45	11.0	11.55	20	22	600	0.25	2	8.4	
MMSZ5242BS	H2	11.4	12.0	12.6	20	30	600	0.25	1	9.1	
MMSZ5243BS	H3	12.35	13.0	13.65	9.5	13	600	0.25	0.5	9.9	
MMSZ5244BS	H4	13.3	14.0	14.7	9	15	600	0.25	0.1	10	
MMSZ5245BS	H5	14.25	15.0	15.75	8.5	16	600	0.25	0.1	11	
MMSZ5246BS	J1	15.2	16.0	16.8	7.8	17	600	0.25	0.1	12	
MMSZ5248BS	J3	17.1	18.0	18.9	7	21	600	0.25	0.1	14	
MMSZ5250BS	J5	19	20.0	21	6.2	25	600	0.25	0.1	15	
MMSZ5251BS	K1	20.9	22.0	23.1	5.6	29	600	0.25	0.1	17	
MMSZ5252BS	K2	22.8	24.0	25.2	5.2	33	600	0.25	0.1	18	
MMSZ5253BS	K3	23.75	25.0	26.25	5	35	600	0.25	0.1	19	
MMSZ5254BS	K4	25.65	27.0	28.35	5	41	600	0.25	0.1	21	
MMSZ5255BS	K5	26.6	28.0	29.4	4.5	44	600	0.25	0.1	21	
MMSZ5256BS	M1	28.5	30.0	31.5	4.2	49	600	0.25	0.1	23	
MMSZ5257BS	M2	31.35	33.0	34.65	3.8	58	700	0.25	0.1	25	
MMSZ5258BS	M3	34.2	36.0	37.8	3.4	70	700	0.25	0.1	27	
MMSZ5259BS	M4	37.05	39.0	40.95	3.2	80	800	0.25	0.1	30	

## Typical Characteristics Curves

### Breakdown characteristics

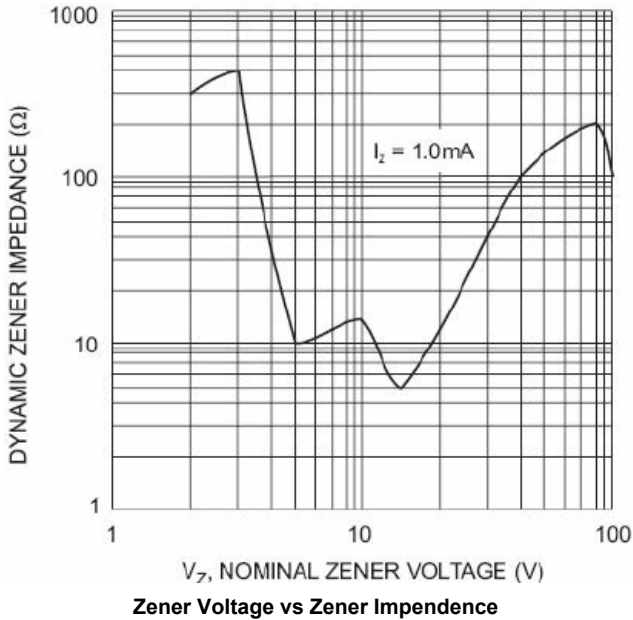


Power Dissipation vs Ambient Temperature

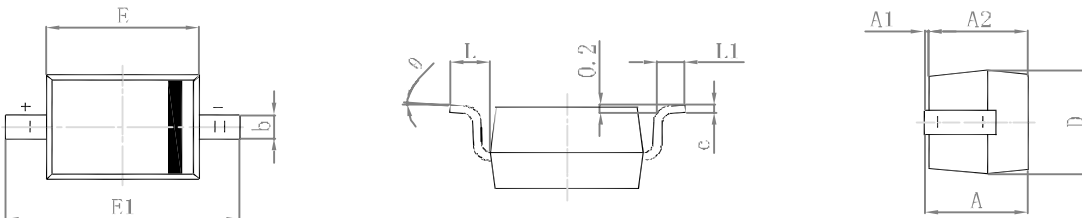


Total Capacitance vs Nomina Zener Voltage

## Typical Characteristics Curves



## Package Outline Dimensions SOD-323



Symbol	Min.(mm)	Max.(mm)
<b>A</b>	--	1.000
<b>A1</b>	0.000	0.100
<b>A2</b>	0.800	0.900
<b>b</b>	0.250	0.350
<b>c</b>	0.080	0.150
<b>D</b>	1.200	1.400
<b>E</b>	1.600	1.800
<b>E1</b>	2.500	2.700
<b>L</b>	0.475REF	
<b>L1</b>	0.250	0.400
<b>θ</b>	0°	8°