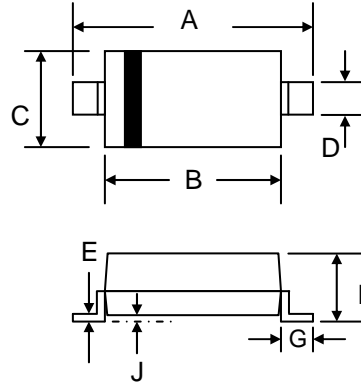


### Features

- Planar Die Construction
- 200mW Power Dissipation
- 2.4V – 51V Nominal Zener Voltage
- 5% Standard Vz Tolerance
- Designed for Surface Mount Application
- Plastic Material – UL Recognition Flammability Classification 94V-0



SOD-323		
Dim	Min	Max
A	2.30	2.75
B	1.60	1.80
C	1.15	1.35
D	0.25	0.40
E	0.09	0.18
G	0.20	0.40
H	0.80	1.00
J	—	0.12
All Dimensions in mm		

### Mechanical Data

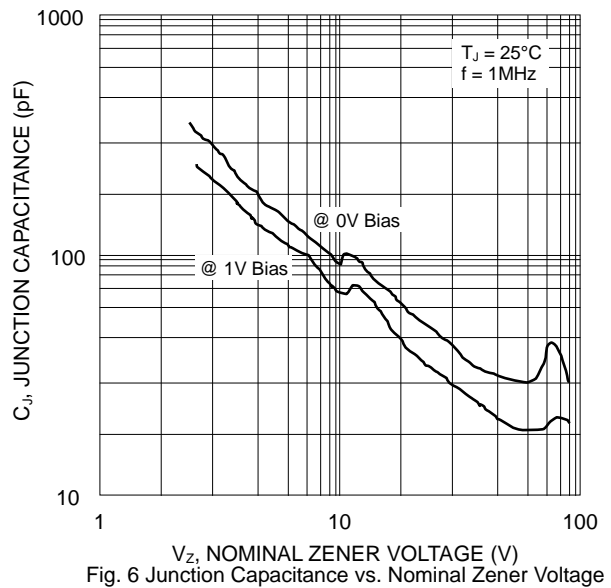
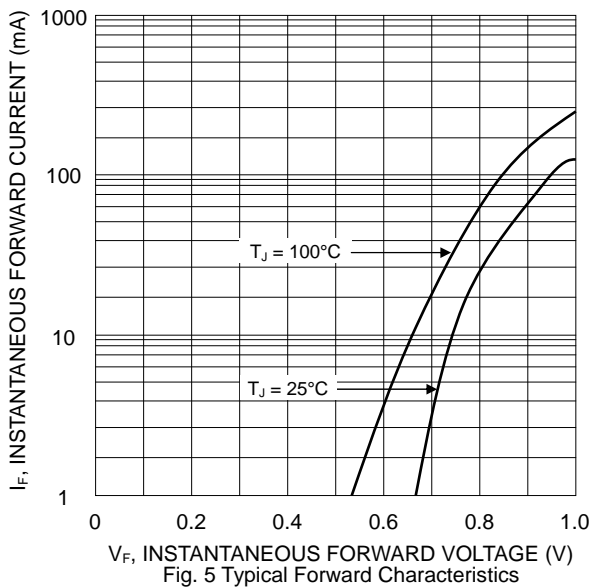
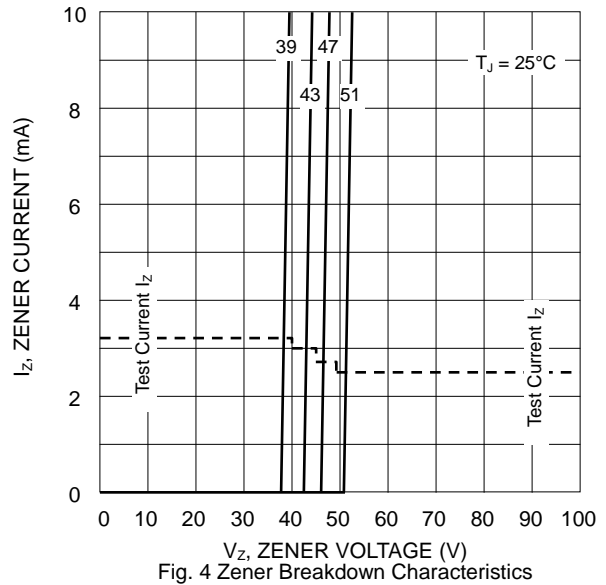
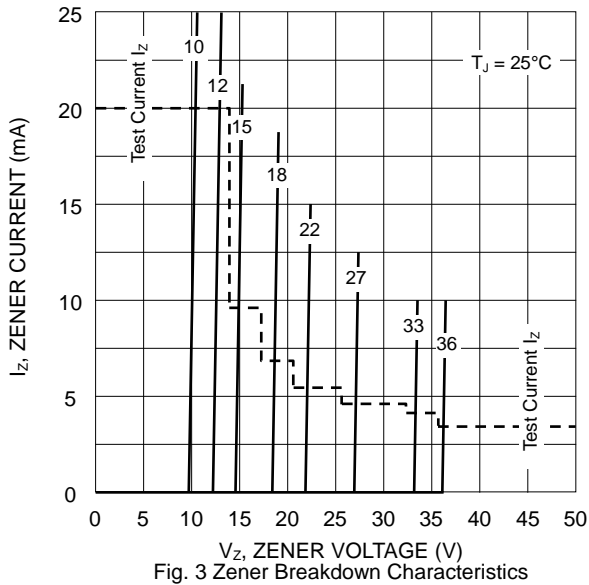
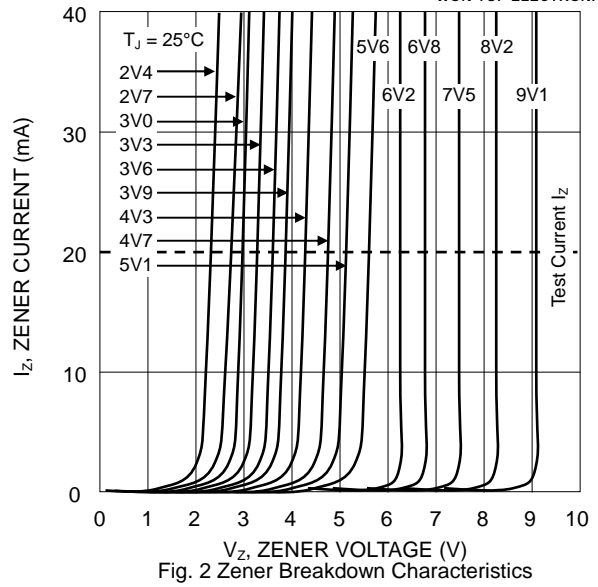
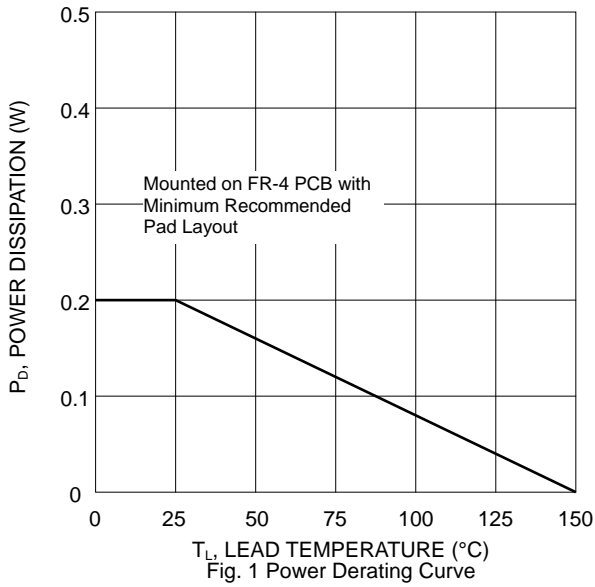
- Case: SOD-323, Molded Plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.004 grams (approx.)
- Marking: Device Code
- **Lead Free: For RoHS / Lead Free Version, Add “-LF” Suffix to Part Number, See Page 5**

### Maximum Ratings @ $T_A=25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Power Dissipation at $T_A = 25^\circ\text{C}$ (Note 1)	$P_D$	200	mW
Forward Voltage @ $I_F = 10\text{mA}$	$V_F$	0.9	V
Thermal Resistance, Junction to Ambient (Note 1, 2)	$R_{JA}$	625	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150	$^\circ\text{C}$

Note: 1. Mounted on FR-4 PCB with minimum recommended pad layout.  
2. Thermal resistance measurement obtained via infrared scan method.

# MMSZ5221BS – MMSZ5262BS



**Electrical Characteristics (@T<sub>A</sub>=25°C unless otherwise specified) Table 1**

Type Number (Note 1)	Device Marking Code (Note 2)		Zener Voltage Range (Note 3)			Maximum Zener Impedance (Note 4)				Max Reverse Leakage Current		Typical Temp. Coefficient of Zener Voltage
			V <sub>Z</sub> @ I <sub>ZT</sub>			Z <sub>ZT</sub> @ I <sub>ZT</sub>		Z <sub>ZK</sub> @ I <sub>ZK</sub>		I <sub>R</sub>	@ V <sub>R</sub>	
	TW	CN	Nom (V)	Min (V)	Max (V)	( )	(mA)	( )	(mA)	(μA)	(V)	(%/°C)
MMSZ5221BS	C1	C1	2.4	2.28	2.52	30	20	1200	0.25	100	1.0	-0.075
MMSZ5222BS	C2	C2	2.5	2.38	2.63	30	20	1250	0.25	100	1.0	-0.075
MMSZ5223BS	C3	C3	2.7	2.57	2.84	30	20	1300	0.25	75	1.0	-0.075
MMSZ5225BS	C5	C5	3.0	2.85	3.15	29	20	1600	0.25	50	1.0	-0.075
MMSZ5226BS	D1	G1	3.3	3.14	3.47	28	20	1600	0.25	25	1.0	-0.070
MMSZ5227BS	D2	G2	3.6	3.42	3.78	24	20	1700	0.25	15	1.0	-0.065
MMSZ5228BS	D3	G3	3.9	3.71	4.10	23	20	1900	0.25	10	1.0	-0.060
MMSZ5229BS	D4	G4	4.3	4.09	4.52	22	20	2000	0.25	5.0	1.0	-0.055
MMSZ5230BS	D5	G5	4.7	4.47	4.94	19	20	1900	0.25	5.0	2.0	±0.030
MMSZ5231BS	E1	E1	5.1	4.85	5.36	17	20	1600	0.25	5.0	2.0	±0.030
MMSZ5232BS	E2	E2	5.6	5.32	5.88	11	20	1600	0.25	5.0	3.0	+0.038
MMSZ5233BS	E3	E3	6.0	5.70	6.30	7.0	20	1600	0.25	5.0	3.5	+0.038
MMSZ5234BS	E4	E4	6.2	5.89	6.51	7.0	20	1000	0.25	5.0	4.0	+0.045
MMSZ5235BS	E5	E5	6.8	6.46	7.14	5.0	20	750	0.25	3.0	5.0	+0.050
MMSZ5236BS	F1	F1	7.5	7.13	7.88	6.0	20	500	0.25	3.0	6.0	+0.058
MMSZ5237BS	F2	F2	8.2	7.79	8.61	8.0	20	500	0.25	3.0	6.5	+0.062
MMSZ5238BS	F3	F3	8.7	8.27	9.14	8.0	20	600	0.25	3.0	6.5	+0.065
MMSZ5239BS	F4	F4	9.1	8.65	9.56	10	20	600	0.25	3.0	7.0	+0.068
MMSZ5240BS	F5	F5	10	9.50	10.50	17	20	600	0.25	3.0	8.0	+0.075
MMSZ5241BS	H1	H1	11	10.45	11.55	22	20	600	0.25	2.0	8.4	+0.076
MMSZ5242BS	H2	H2	12	11.40	12.60	30	20	600	0.25	1.0	9.1	+0.077
MMSZ5243BS	H3	H3	13	12.35	13.65	13	9.5	600	0.25	0.5	9.9	+0.079
MMSZ5245BS	H5	H5	15	14.25	15.75	16	8.5	600	0.25	0.1	11	+0.082
MMSZ5246BS	J1	J1	16	15.20	16.80	17	7.8	600	0.25	0.1	12	+0.083
MMSZ5248BS	J3	J3	18	17.10	18.90	21	7.0	600	0.25	0.1	14	+0.085
MMSZ5250BS	J5	J5	20	19.00	21.00	25	6.2	600	0.25	0.1	15	+0.086
MMSZ5251BS	K1	K1	22	20.90	23.10	29	5.6	600	0.25	0.1	17	+0.087
MMSZ5252BS	K2	K2	24	22.80	25.20	33	5.2	600	0.25	0.1	18	+0.087
MMSZ5254BS	K4	K4	27	25.65	28.35	41	4.6	600	0.25	0.1	21	+0.090
MMSZ5255BS	K5	K5	28	26.60	29.40	44	4.5	600	0.25	0.1	21	+0.091
MMSZ5256BS	M1	M1	30	28.50	31.50	49	4.2	600	0.25	0.1	23	+0.091
MMSZ5257BS	M2	M2	33	31.35	34.65	58	3.8	700	0.25	0.1	25	+0.092
MMSZ5258BS	M3	M3	36	34.20	37.80	70	3.4	700	0.25	0.1	27	+0.093
MMSZ5259BS	M4	M4	39	37.05	40.95	80	3.2	800	0.25	0.1	30	+0.094
MMSZ5260BS	M5	M5	43	40.85	45.15	93	3.0	900	0.25	0.1	33	+0.095
MMSZ5261BS	N1	N1	47	44.65	49.35	105	2.7	1000	0.25	0.1	36	+0.095
MMSZ5262BS	N2	N2	51	48.45	53.55	125	2.5	1100	0.25	0.1	39	+0.096

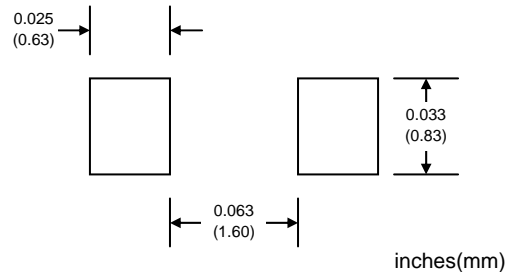
- Note: 1. Type numbers listed have standard tolerance on the nominal zener voltage of ±5%.  
 2. TW: Marking code for Taiwan plant. CN: Marking code for China plant.  
 3. Measured with device junction in thermal equilibrium.  
 4. f = 1KHz

## MARKING INFORMATION



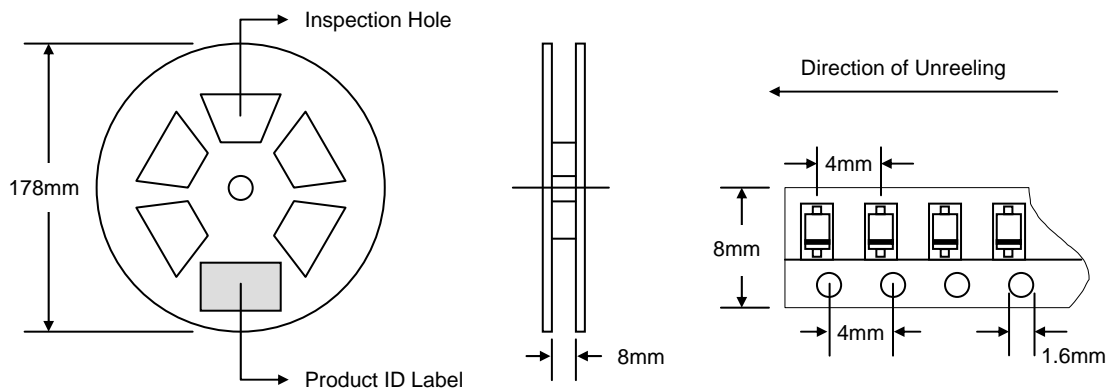
Cathode = Polarity Band  
xx = Device Code, Table 1

## RECOMMENDED FOOTPRINT



## PACKAGING INFORMATION

### TAPE & REEL




Reel Diameter (mm)	Quantity (PCS)	Inner Box Size L x W x H (mm)	Quantity (PCS)	Carton Size L x W x H (mm)	Quantity (PCS)	Approx. Gross Weight (KG)
178	3,000	187 x 187 x 65	15,000	390 x 240 x 420	150,000	7.0

**Note:** 1. Anti-static plastic reel, white, water clear or blue color. Inspection hole might be varied in different alignment.  
2. Components are packed in accordance with EIA standard 481-1 and 481-2.

## ORDERING INFORMATION

Product No.	Package Type	Shipping Quantity
MMSZ52xxBS-T1	SOD-323	3000/Tape & Reel

1. Shipping quantity given is for minimum packing quantity only. For minimum order quantity, please consult the Sales Department.
2. **To order RoHS / Lead Free version (with Lead Free finish), add "-LF" suffix to part number above. For example, MMSZ5221BS-T1-LF.**

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**Internet:** <http://www.wontop.com>

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