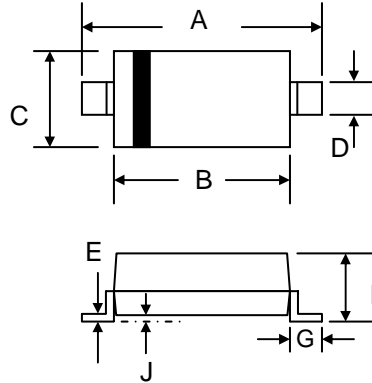


## 200mW SURFACE MOUNT ZENER DIODE

### Features

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



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, See Page 2
- **Lead Free: For RoHS / Lead Free Version, Add “-LF” Suffix to Part Number, See Page 4**

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

Characteristic	Symbol	Value	Unit
Peak Pulse 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)	$R_{\theta JA}$	625	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_j, T_{STG}$	-65 to +150	$^\circ\text{C}$

Note: 1. Valid provided that device terminals are kept at ambient temperature.

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

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)	(Ω)	(mA)	(Ω)	(mA)	(μA)	(V)	(%/K)
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	30	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	5.0	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 pulses  $t_p = 1\text{ms}$ .

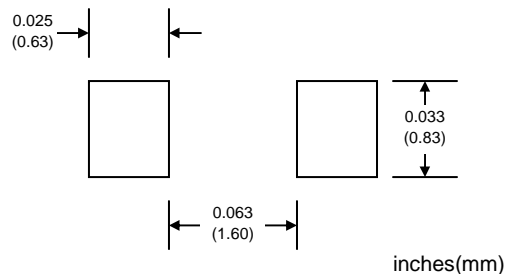
4.  $f = 1\text{KHz}$

## MARKING INFORMATION



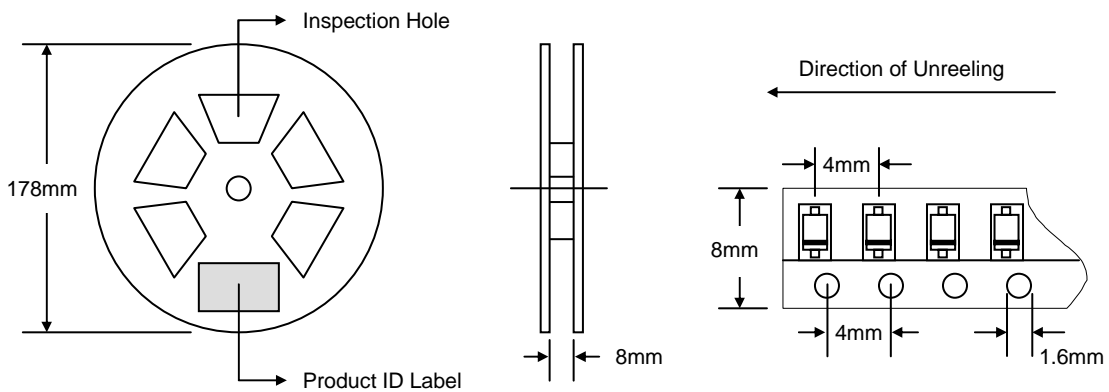
Cathode = Polarity Band  
xx = Device Code, See Page 2

## 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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