



# MMSZ5221BS SERIES

## SURFACE MOUNT SILICON ZENER DIODES

**VOLTAGE** 2.4 to 51 Volt    **POWER** 200 mWatt

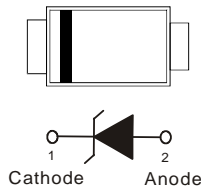
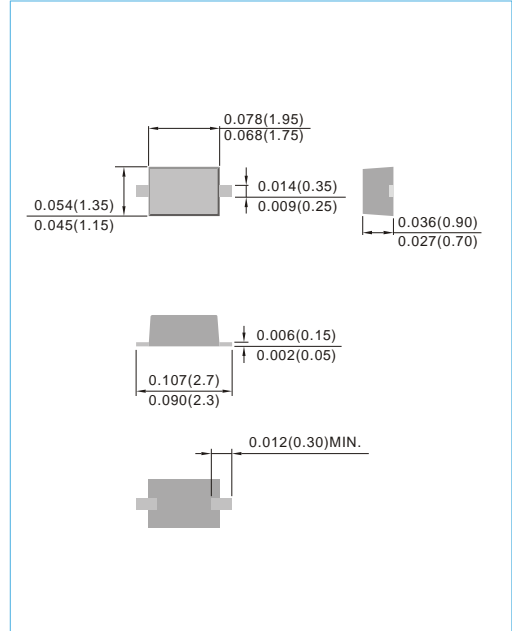
**SOD-323**    Unit : inch(mm)

### FEATURES

- Planar Die construction
- 200mW Power Dissipation
- Ideally Suited for Automated Assembly Processes
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Green molding compound as per IEC61249 Std. . (Halogen Free)

### MECHANICAL DATA

- Case: SOD-323, Molded Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Appox Weight: 0.00014 ounces, 0.0041 grams



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Value	Units
Power Dissipation @ $T_A=25^{\circ}\text{C}$ (Note A)	$P_D$	200	mW
Operating Junction and Storage Temperature Range	$T_J$	-55 to +150	$^{\circ}\text{C}$

**NOTE :**

A. Mounted on 5mm<sup>2</sup>(0.013mm thick) land areas.



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Part Number	Nominal Zener Voltage			Max. Zener Impedance				Max Reverse Leakage Current		Marking Code
	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>		
	Nom. V	Min. V	Max. V	Ω	mA	Ω	mA	μA	V	
<b>200 mWatts Zener Diodes</b>										
MMSZ5221BS	2.4	2.28	2.52	30	20.0	1200	0.25	100	1.0	C1
MMSZ5222BS	2.5	2.38	2.63	30	20.0	1250	0.25	100	1.0	C2
MMSZ5223BS	2.7	2.57	2.84	30	20.0	1300	0.25	75	1.0	C3
MMSZ5225BS	3	2.85	3.15	30	20.0	1600	0.25	50	1.0	C5
MMSZ5226BS	3.3	3.14	3.47	28	20.0	1600	0.25	25	1.0	D1
MMSZ5227BS	3.6	3.42	3.78	24	20.0	1700	0.25	15	1.0	D2
MMSZ5228BS	3.9	3.71	4.10	23	20.0	1900	0.25	10	1.0	D3
MMSZ5229BS	4.3	4.09	4.52	22	20.0	2000	0.25	5.0	1.0	D4
MMSZ5230BS	4.7	4.47	4.94	19	20.0	1900	0.25	5.0	2.0	D5
MMSZ5231BS	5.1	4.85	5.36	17	20.0	1600	0.25	5.0	2.0	E1
MMSZ5232BS	5.6	5.32	5.88	11	20.0	1600	0.25	5.0	3.0	E2
MMSZ5234BS	6.2	5.89	6.51	7	20.0	1000	0.25	5.0	4.0	E4
MMSZ5235BS	6.8	6.46	7.14	5	20.0	750	0.25	3.0	5.0	E5
MMSZ5236BS	7.5	7.13	7.88	6	20.0	500	0.25	3.0	6.0	F1
MMSZ5237BS	8.2	7.79	8.61	8	20.0	500	0.25	3.0	6.0	F2
MMSZ5238BS	8.7	8.27	9.14	8	20.0	600	0.25	3.0	6.5	F3
MMSZ5239BS	9.1	8.65	9.56	10	20.0	600	0.25	3.0	6.5	F4
MMSZ5240BS	10	9.50	10.50	17	20.0	600	0.25	3.0	8.0	F5
MMSZ5241BS	11	10.45	11.55	22	20.0	600	0.25	2.0	8.4	H1
MMSZ5242BS	12	11.40	12.60	30	20.0	600	0.25	1.0	9.1	H2
MMSZ5243BS	13	12.35	13.65	13	9.5	600	0.25	0.5	9.9	H3
MMSZ5244BS	14	13.30	14.70	15	9.0	600	0.25	0.1	10.5	H4
MMSZ5245BS	15	14.25	15.75	16	8.5	600	0.25	0.1	11.0	H5
MMSZ5246BS	16	15.20	16.80	17	7.8	600	0.25	0.1	12.0	J1
MMSZ5247BS	17	16.15	17.85	19	7.5	600	0.25	0.1	13.0	J2
MMSZ5248BS	18	17.10	18.90	21	7.0	600	0.25	0.1	14.0	J3
MMSZ5250BS	20	19.00	21.00	25	6.2	600	0.25	0.1	15.0	J5
MMSZ5251BS	22	20.90	23.10	29	5.6	600	0.25	0.1	17.0	K1
MMSZ5252BS	24	22.80	25.20	33	5.2	600	0.25	0.1	18.0	K2
MMSZ5254BS	27	25.65	28.35	41	5.0	600	0.25	0.1	21.0	K4
MMSZ5255BS	28	26.60	29.40	44	4.5	600	0.25	0.1	21.0	K5
MMSZ5256BS	30	28.50	31.50	49	4.2	600	0.25	0.1	23.0	M1
MMSZ5257BS	33	31.35	34.65	58	3.8	700	0.25	0.1	25.0	M2
MMSZ5258BS	36	34.20	37.80	70	3.4	700	0.25	0.1	27.0	M3
MMSZ5259BS	39	37.05	40.95	80	3.2	800	0.25	0.1	30.0	M4
MMSZ5260BS	43	40.85	45.15	93	3.0	900	0.25	0.1	33.0	M5
MMSZ5261BS	47	44.65	49.35	105	2.7	1000	0.25	0.1	36.0	N1
MMSZ5262BS	51	48.45	53.55	125	2.5	1100	0.25	0.1	39.0	N2



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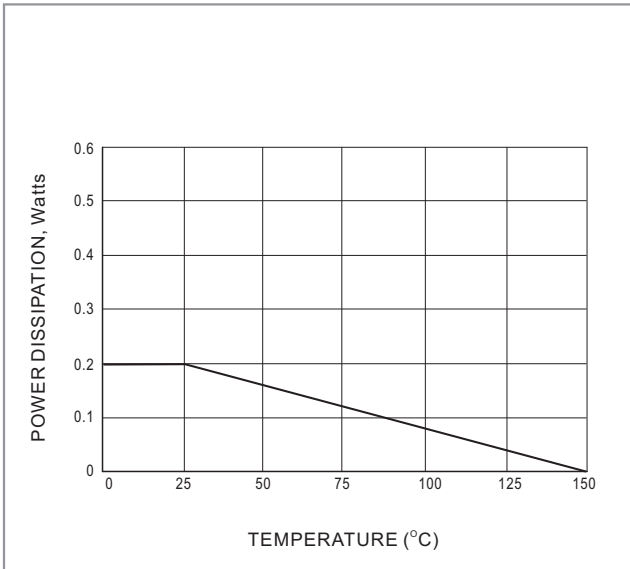


Fig.1 STEADY STATE POWER DERATING

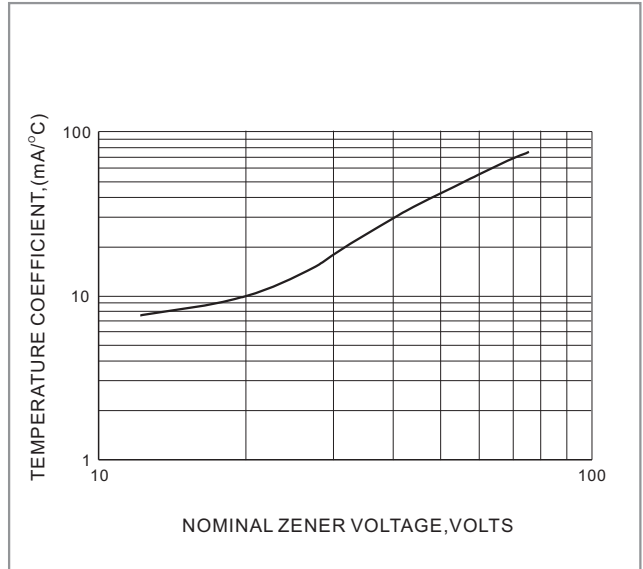


Fig.2 TEMPERATURE COEFFICIENTS

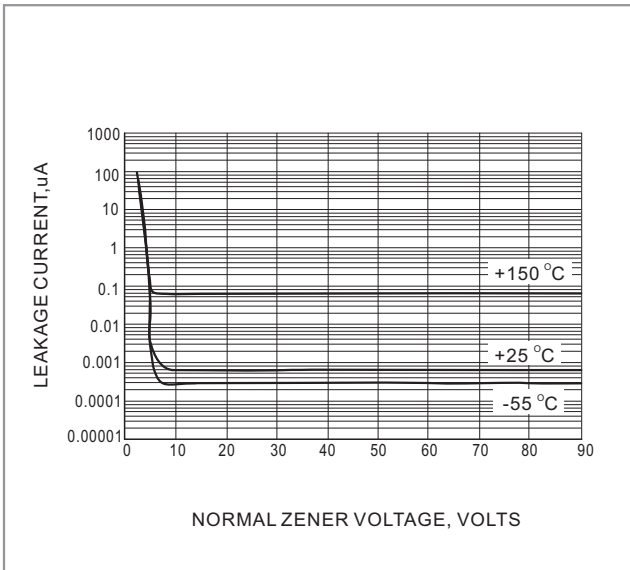


Fig.3 TYPICAL LEAKAGE CURRENT

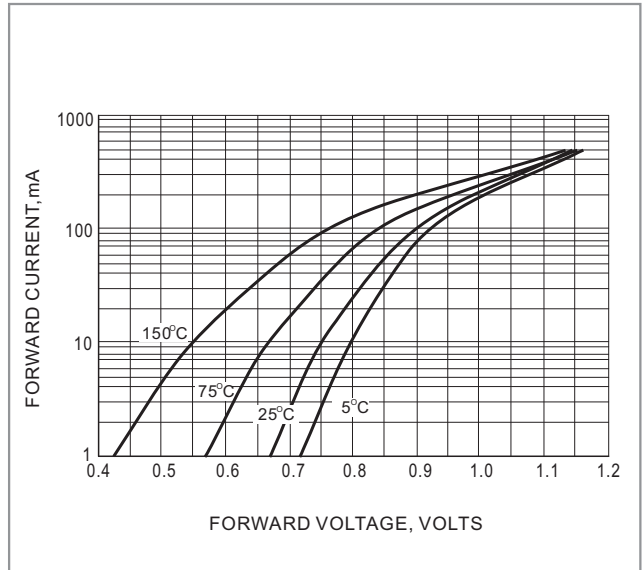


Fig.4 TYPICAL FORWARD VOLTAGE

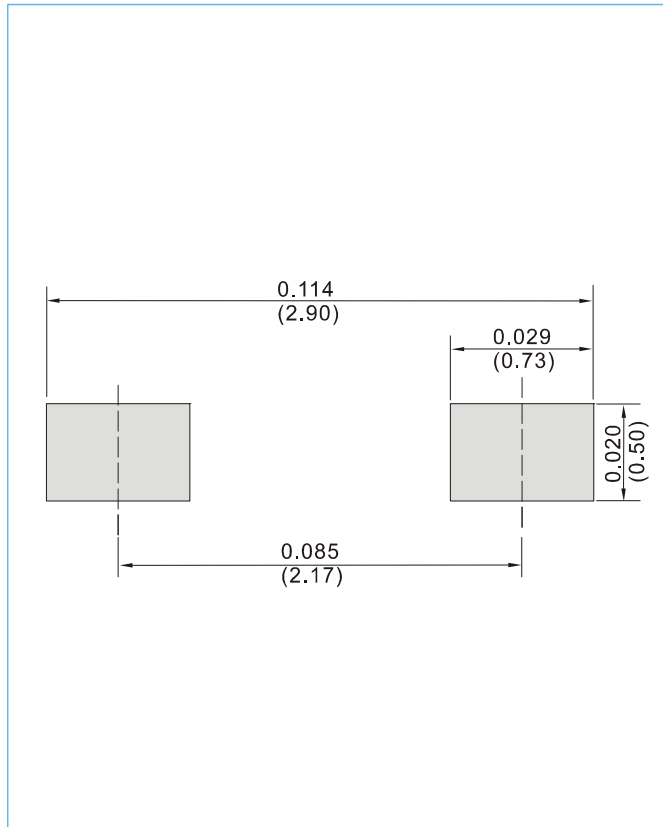


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### MOUNTING PAD LAYOUT

SOD-323

Unit : inch(mm)



### ORDER INFORMATION

- Packing information  
T/R - 12K per 13" plastic Reel  
T/R - 5K per 7" plastic Reel



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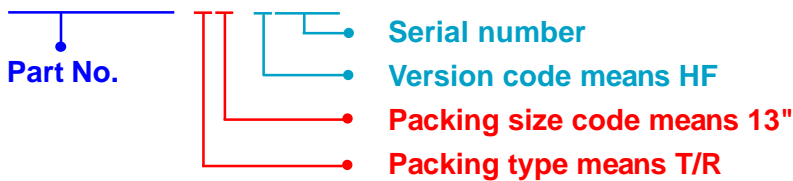
### Part No\_packing code\_Version

MMSZ5221BS\_R1\_00001

MMSZ5221BS\_R2\_00001

For example :

**RB500V-40** **R2** **00001**



Packing Code <b>XX</b>				Version Code <b>XXXXX</b>		
Packing type	1 <sup>st</sup> Code	Packing size code	2 <sup>nd</sup> Code	HF or RoHS	1 <sup>st</sup> Code	2 <sup>nd</sup> ~5 <sup>th</sup> Code
Tape and Ammunition Box (T/B)	A	N/A	0	HF	0	serial number
Tape and Reel (T/R)	R	7"	1	RoHS	1	serial number
Bulk Packing (B/P)	B	13"	2			
Tube Packing (T/P)	T	26mm	X			
Tape and Reel (Right Oriented) (TRR)	S	52mm	Y			
Tape and Reel (Left Oriented) (TRL)	L	PANASERT T/B CATHODE UP (PBCU)	U			
FORMING	F	PANASERT T/B CATHODE DOWN (PBCD)	D			



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