



# MMSZ5221BS-AU SERIES

## SURFACE MOUNT SILICON ZENER DIODES

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

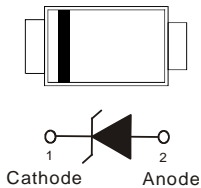
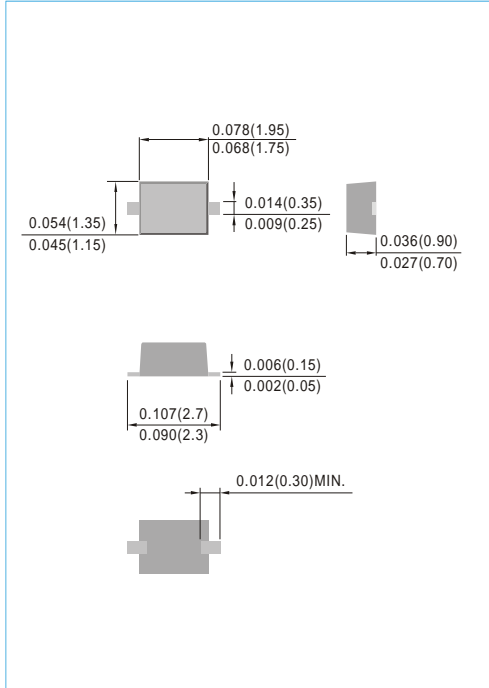
**SOD-323**      Unit : inch(mm)

### FEATURES

- Planar Die construction
- 200mW Power Dissipation
- Ideally Suited for Automated Assembly Processes
- Acquire quality system certificate : TS16949
- AEC-Q101 qualified
- 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 5.0mm<sup>2</sup>(.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>TT</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-AU	2.4	2.28	2.52	30	20.0	1200	0.25	100	1.0	C1
MMSZ5222BS-AU	2.5	2.38	2.63	30	20.0	1250	0.25	100	1.0	C2
MMSZ5223BS-AU	2.7	2.57	2.84	30	20.0	1300	0.25	75	1.0	C3
MMSZ5225BS-AU	3	2.85	3.15	30	20.0	1600	0.25	50	1.0	C5
MMSZ5226BS-AU	3.3	3.14	3.47	28	20.0	1600	0.25	25	1.0	D1
MMSZ5227BS-AU	3.6	3.42	3.78	24	20.0	1700	0.25	15	1.0	D2
MMSZ5228BS-AU	3.9	3.71	4.10	23	20.0	1900	0.25	10	1.0	D3
MMSZ5229BS-AU	4.3	4.09	4.52	22	20.0	2000	0.25	5.0	1.0	D4
MMSZ5230BS-AU	4.7	4.47	4.94	19	20.0	1900	0.25	5.0	2.0	D5
MMSZ5231BS-AU	5.1	4.85	5.36	17	20.0	1600	0.25	5.0	2.0	E1
MMSZ5232BS-AU	5.6	5.32	5.88	11	20.0	1600	0.25	5.0	3.0	E2
MMSZ5234BS-AU	6.2	5.89	6.51	7	20.0	1000	0.25	5.0	4.0	E4
MMSZ5235BS-AU	6.8	6.46	7.14	5	20.0	750	0.25	3.0	5.0	E5
MMSZ5236BS-AU	7.5	7.13	7.88	6	20.0	500	0.25	3.0	6.0	F1
MMSZ5237BS-AU	8.2	7.79	8.61	8	20.0	500	0.25	3.0	6.0	F2
MMSZ5238BS-AU	8.7	8.27	9.14	8	20.0	600	0.25	3.0	6.5	F3
MMSZ5239BS-AU	9.1	8.65	9.56	10	20.0	600	0.25	3.0	6.5	F4
MMSZ5240BS-AU	10	9.50	10.50	17	20.0	600	0.25	3.0	8.0	F5
MMSZ5241BS-AU	11	10.45	11.55	22	20.0	600	0.25	2.0	8.4	H1
MMSZ5242BS-AU	12	11.40	12.60	30	20.0	600	0.25	1.0	9.1	H2
MMSZ5243BS-AU	13	12.35	13.65	13	9.5	600	0.25	0.5	9.9	H3
MMSZ5244BS-AU	14	13.30	14.70	15	9.0	600	0.25	0.1	10.5	H4
MMSZ5245BS-AU	15	14.25	15.75	16	8.5	600	0.25	0.1	11.0	H5
MMSZ5246BS-AU	16	15.20	16.80	17	7.8	600	0.25	0.1	12.0	J1
MMSZ5247BS-AU	17	16.15	17.85	19	7.5	600	0.25	0.1	13.0	J2
MMSZ5248BS-AU	18	17.10	18.90	21	7.0	600	0.25	0.1	14.0	J3
MMSZ5250BS-AU	20	19.00	21.00	25	6.2	600	0.25	0.1	15.0	J5
MMSZ5251BS-AU	22	20.90	23.10	29	5.6	600	0.25	0.1	17.0	K1
MMSZ5252BS-AU	24	22.80	25.20	33	5.2	600	0.25	0.1	18.0	K2
MMSZ5254BS-AU	27	25.65	28.35	41	5.0	600	0.25	0.1	21.0	K4
MMSZ5255BS-AU	28	26.60	29.40	44	4.5	600	0.25	0.1	21.0	K5
MMSZ5256BS-AU	30	28.50	31.50	49	4.2	600	0.25	0.1	23.0	M1
MMSZ5257BS-AU	33	31.35	34.65	58	3.8	700	0.25	0.1	25.0	M2
MMSZ5258BS-AU	36	34.20	37.80	70	3.4	700	0.25	0.1	27.0	M3
MMSZ5259BS-AU	39	37.05	40.95	80	3.2	800	0.25	0.1	30.0	M4
MMSZ5260BS-AU	43	40.85	45.15	93	3.0	900	0.25	0.1	33.0	M5
MMSZ5261BS-AU	47	44.65	49.35	105	2.7	1000	0.25	0.1	36.0	N1
MMSZ5262BS-AU	51	48.45	53.55	125	2.5	1100	0.25	0.1	39.0	N2



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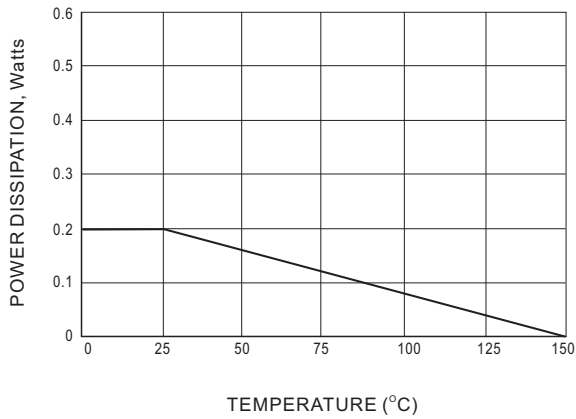


Fig.1 STEADY STATE POWER DERATING

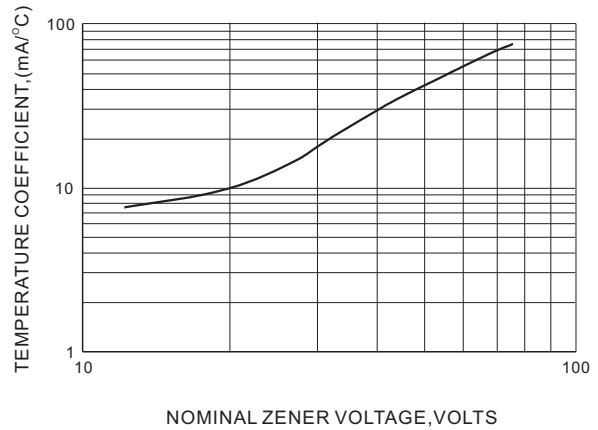


Fig.2 TEMPERATURE COEFFICIENTS

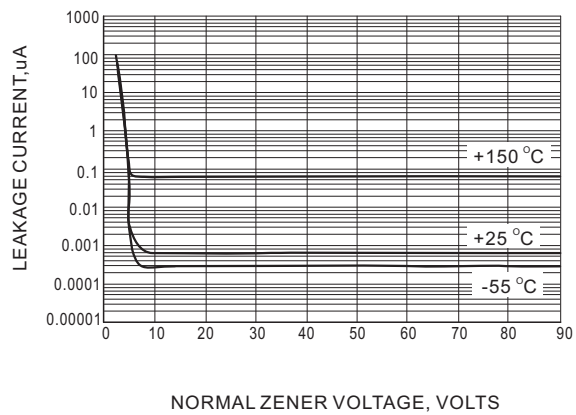


Fig.3 TYPICAL LEAKAGE CURRENT

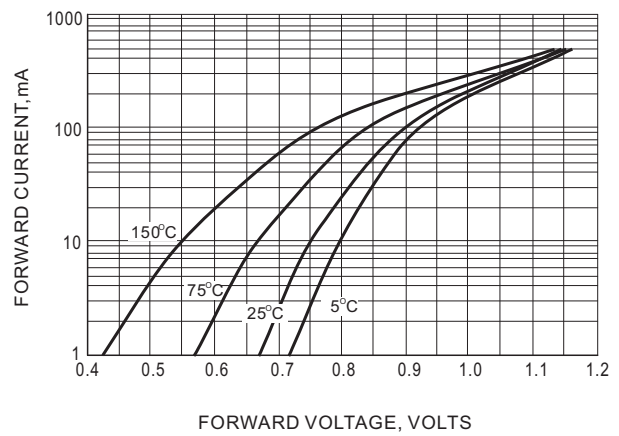
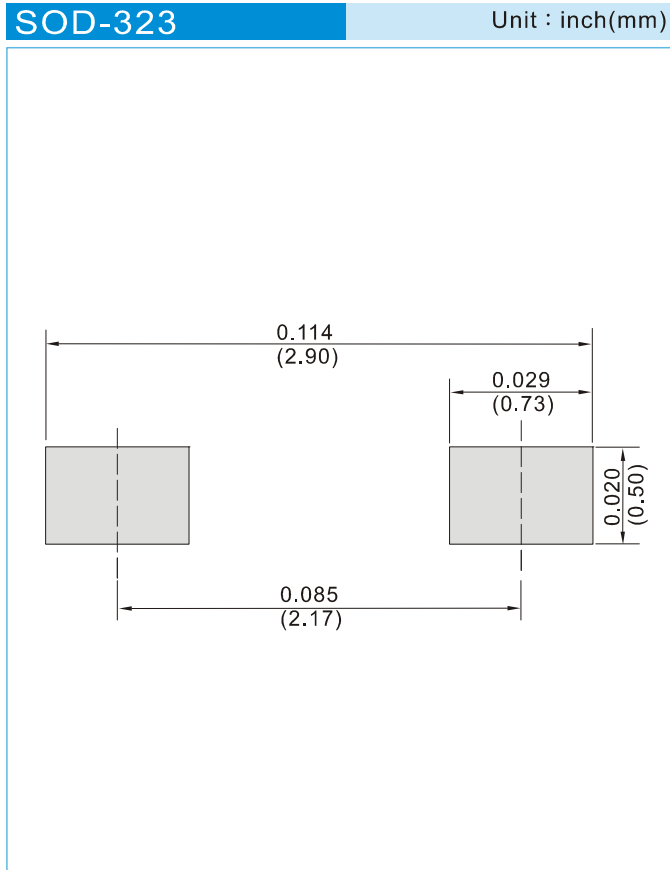


Fig.4 TYPICAL FORWARD VOLTAGE



## MMSZ5221BS-AU SERIES

### MOUNTING PAD LAYOUT



### ORDER INFORMATION

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



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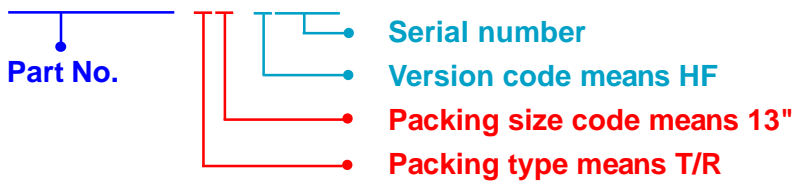
### Part No\_packing code\_Version

MMSZ5221BS-AU\_R1\_000A1

MMSZ5221BS-AU\_R2\_000A1

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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