



DATA SHEET

MMSZ5221BS SERIES

SURFACE MOUNT SILICON ZENER DIODES

VOLTAGE 2.4 to 39 Volts

POWER 200 mWatts

SOD-323

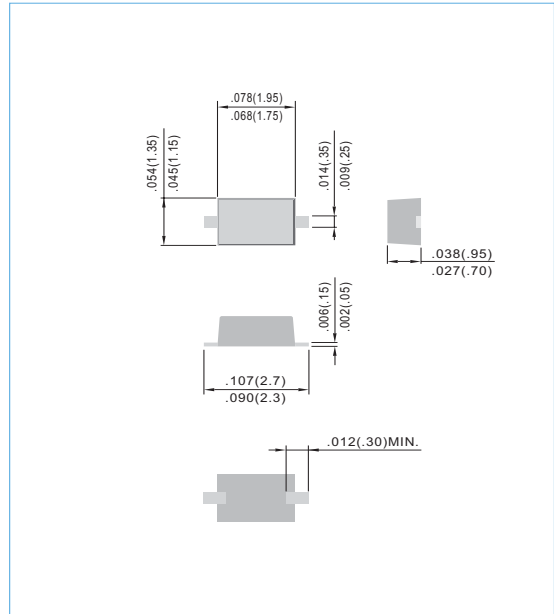
Unit: inch (mm)

FEATURES

- Planar Die construction
- 200mW Power Dissipation
- Ideally Suited for Automated Assembly Processes
- Pb free product are available : 99% Sn above can meet Rohs environment substance directive request

MECHANICAL DATA

- Case: SOD-323, Molded Plastic
- Terminals: Solderable per MIL-STD-202G, Method 208
- Polarity: See Diagram Below
- Approx. Weight: 0.008 grams
- Mounting Position: Any



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Value	Units
Maximum Forward Voltage Drop at IF=100mA	V _F	1.0	V
Maximum Power Dissipation (Notes A) at 25°C	P _D	200	mW
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method) (Notes B)	I _{FSM}	4.0	Amps
Operating Junction and Storage Temperature Range	T _J	-55 to +150	°C

NOTES:

- Mounted on 5.0mm²(.013mm thick) land areas.
- Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.



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

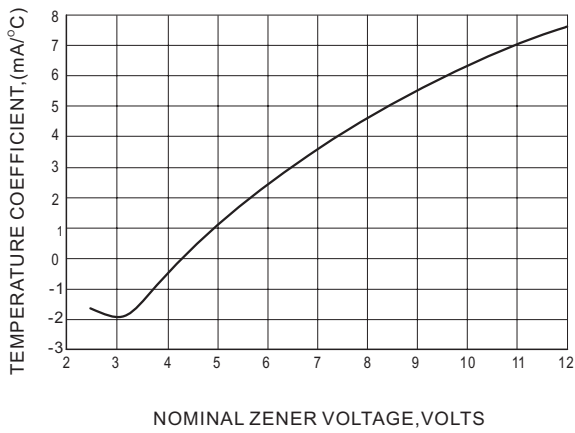


Fig. 1 TEMPERATURE COEFFICIENTS

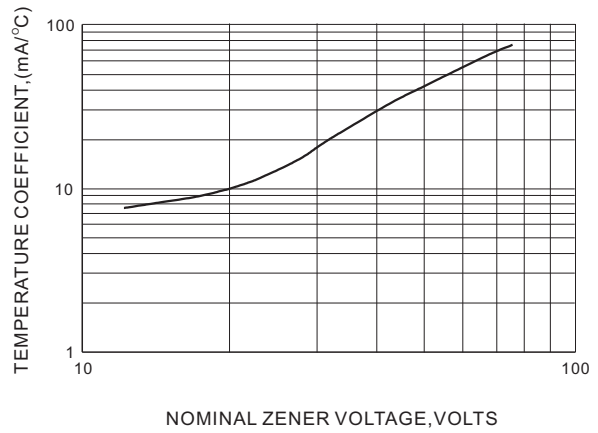


Fig. 2 TEMPERATURE COEFFICIENTS

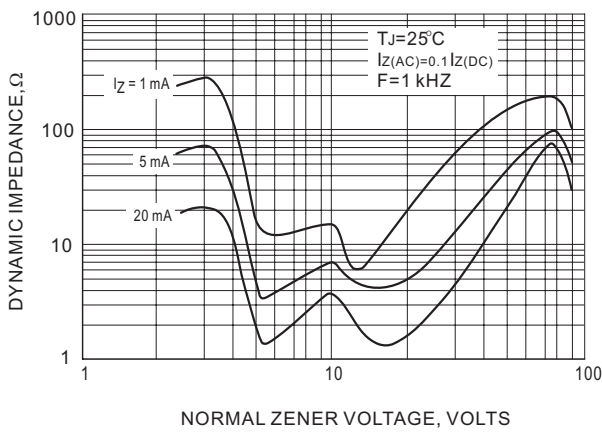


Fig. 3 EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

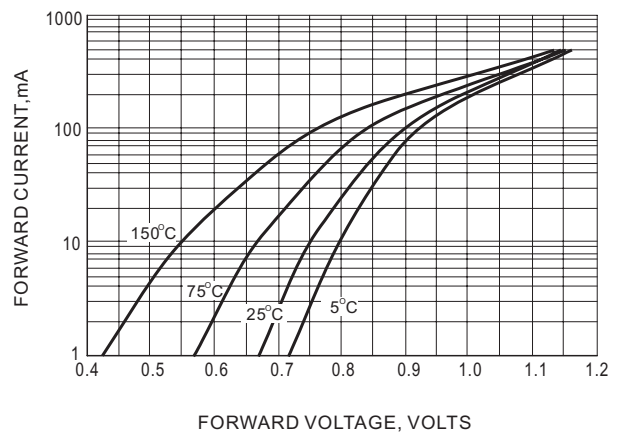


Fig. 4 TYPICAL FORWARD VOLTAGE

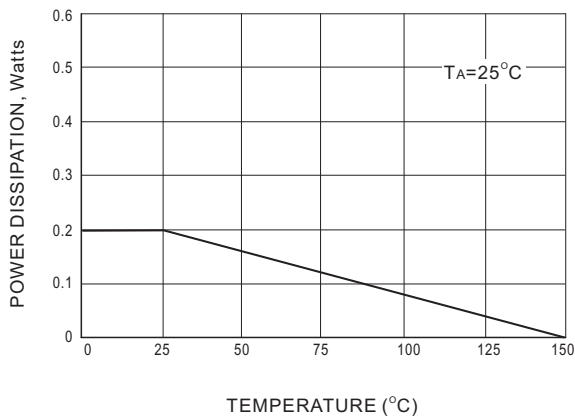


Fig. 5 STEADY STATE POWER DERATING

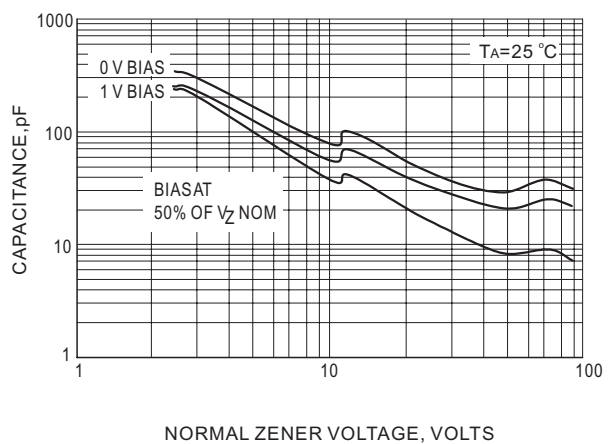


Fig. 6 TYPICAL CAPACITANCE

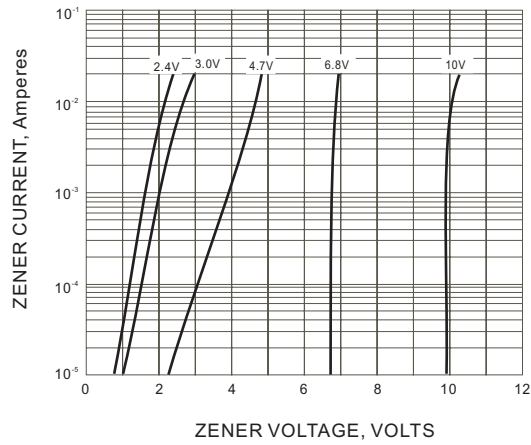


Fig.7 ZENER VOLTAGE VERSUS ZENER CURRENT

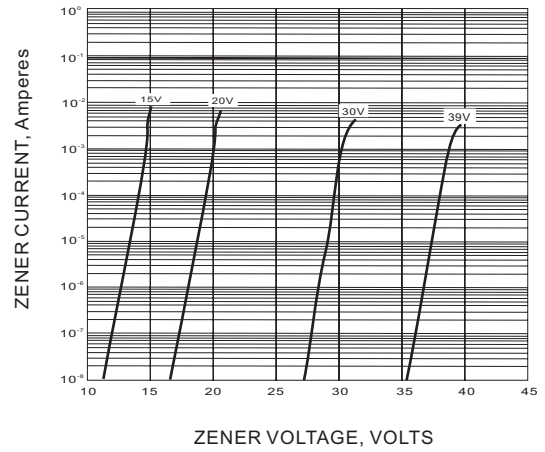


Fig.8 ZENER VOLTAGE VERSUS ZENER CURRENT

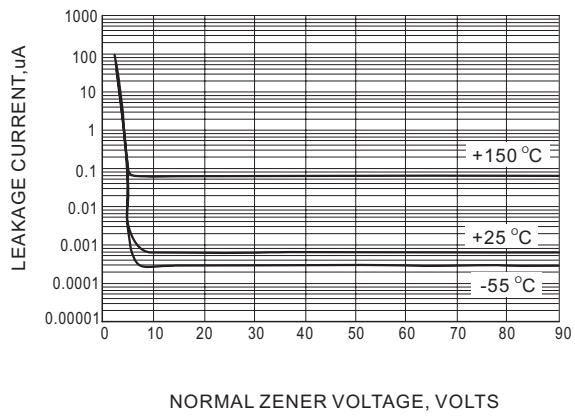


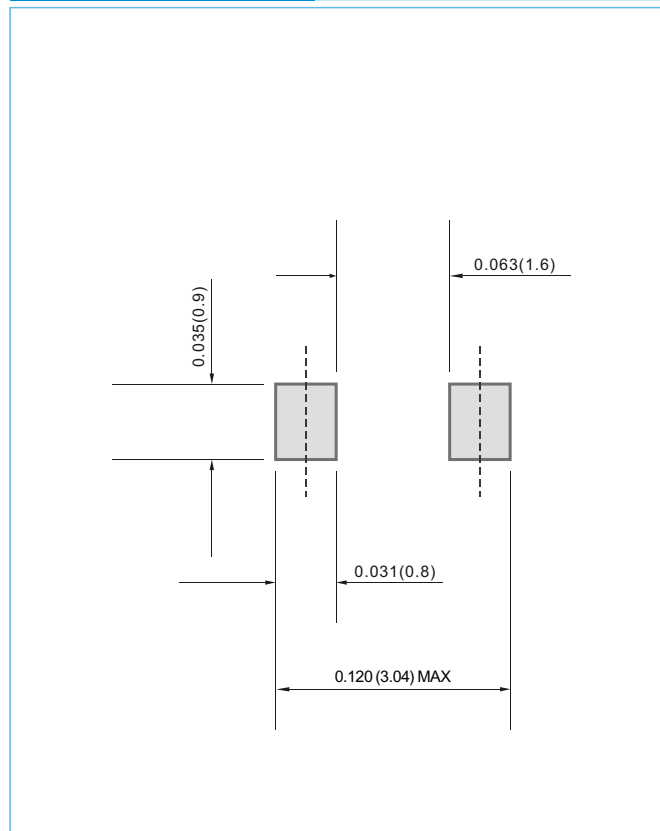
Fig.9 TYPICAL LEAKAGE CURRENT



MOUNTING PAD LAYOUT

SOD-323

Unit: inch (mm)



ORDER INFORMATION

- Packing information
 - T/R - 12K per 13" plastic Reel
 - T/R - 5.0K per 7" plastic Reel

LEGAL STATEMENT

IMPORTANT NOTICE

This information is intended to unambiguously characterize the product in order to facilitate the customer's evaluation of the device in the application. The information will help the customer's technical experts determine that the device is compatible and interchangeable with similar devices made by other vendors. The information in this data sheet is believed to be reliable and accurate. The specifications and information herein are subject to change without notice. New products and improvements in products and product characterization are constantly in process. Therefore, the factory should be consulted for the most recent information and for any special characteristics not described or specified.

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