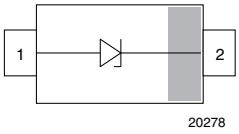
Small Signal Zener Diodes



FEATURES

- Silicon planar Zener diodes
- Standard Zener voltage tolerance is ± 5 % with a “B” suffix (e.g.: MMSZ5225B-G), suffix “C” is ± 2 % tolerance
- AEC-Q101 qualified available (part number on request)
- ESD capability according to AEC-Q101:
  Human body model > 8 kV
  Machine model > 800 V
- Base P/N-G3 - RoHS-compliant, commercial grade
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

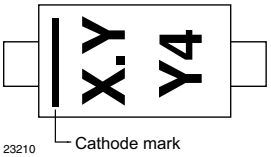
Pb-free

e3

RoHS COMPLIANT

HALOGEN FREE GREEN (5-2008)

MARKING (example only)



X.Y = type code
Y4 = date code

LINKS TO ADDITIONAL RESOURCES

3D Models

SPICE Models

PRIMARY CHARACTERISTICS		
PARAMETER	VALUE	UNIT
V_Z range nom.	3.0 to 75	V
Test current I_{ZT}	1.7 to 20	mA
V_Z specification	Thermal equilibrium	
Circuit configuration	Single	

ORDERING INFORMATION					
DEVICE NAME	ORDERING CODE	ZENER VOLTAGE TOLERANCE	AEC-Q101 QUALIFIED	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY
MMSZ5225 to MMSZ5267	MMSZ5225B-G3-08 to MMSZ5267B-G3-08	5 %	no	3000 (8 mm tape on 7" reel)	15 000/box
	MMSZ5225C-G3-08 to MMSZ5267C-G3-08	2 %	no		
	MMSZ5225B-G3-18 to MMSZ5267B-G3-18	5 %	no	10 000 (8 mm tape on 13" reel)	10 000/box
	MMSZ5225C-G3-18 to MMSZ5267C-G3-18	2 %	no		

PACKAGE				
PACKAGE NAME	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
SOD-123	10.6 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	Peak temperature max. 260 °C

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Power dissipation	R_{thJL} = 250 K/W	P_{tot}	500	mW
	On FR-4 board with recommended soldering footprint	P_{tot}	300	mW
Thermal resistance junction to lead		R_{thJL}	250	K/W
Thermal resistance junction to ambient	According to JEDEC® 51-3 on FR-4 board with recommended soldering footprint	R_{thJA}	420	K/W
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	-65 to +150	
Operating temperature range		T_{op}	-55 to +150	

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ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

PART NUMBER	MARKING CODE		ZENER VOLTAGE RANGE (1)	TEST CURRENT		REVERSE LEAKAGE CURRENT		DYNAMIC RESISTANCE		TEMPERATURE COEFFICIENT
			V_Z at I_{ZT1}	I_{ZT1}	I_{ZT2}	I_R at V_R		Z_Z at I_{ZT1}	Z_{ZK} at I_{ZT2}	α_{VZ}
			V	mA		µA	V	Ω		%/°C
	± 2 %	± 5 %	NOM.			MAX.		MAX.	MAX.	TYP.
MMSZ5225-G	C.0	C0	3	20	0.25	50	1	30	1600	-0.06
MMSZ5226-G	D.6	D6	3.3	20	0.25	25	1	28	1600	-0.057
MMSZ5227-G	D.7	D7	3.6	20	0.25	15	1	24	1700	-0.056
MMSZ5228-G	D.8	D8	3.9	20	0.25	10	1	23	1900	-0.045
MMSZ5229-G	D.9	D9	4.3	20	0.25	5	1	22	2000	-0.029
MMSZ5230-G	D.0	D0	4.7	20	0.25	5	2	19	1900	0.00
MMSZ5231-G	E.6	E6	5.1	20	0.25	5	2	17	1600	0.00
MMSZ5232-G	E.7	E7	5.6	20	0.25	5	3	11	1600	0.032
MMSZ5233-G	E.8	E8	6	20	0.25	5	3.5	7	1600	0.035
MMSZ5234-G	E.9	E9	6.2	20	0.25	5	4	7	1000	0.039
MMSZ5235-G	E.0	E0	6.8	20	0.25	3	5	5	750	0.045
MMSZ5236-G	F.6	F6	7.5	20	0.25	3	6	6	500	0.052
MMSZ5237-G	F.7	F7	8.2	20	0.25	3	6.5	8	500	0.056
MMSZ5238-G	F.8	F8	8.7	20	0.25	3	6.5	8	600	0.058
MMSZ5239-G	F.9	F9	9.1	20	0.25	3	7	10	600	0.060
MMSZ5240-G	F.0	F0	10	20	0.25	3	8	17	600	0.064
MMSZ5241-G	H.6	H6	11	20	0.25	2	8.4	22	600	0.067
MMSZ5242-G	H.7	H7	12	20	0.25	1	9.1	30	600	0.070
MMSZ5243-G	H.8	H8	13	9.5	0.25	0.5	9.9	13	600	0.073
MMSZ5244-G	H.9	H9	14	9	0.25	0.1	10	15	600	0.076
MMSZ5245-G	H.0	H0	15	8.5	0.25	0.1	11	16	600	0.078
MMSZ5246-G	J.6	J6	16	7.8	0.25	0.1	12	17	600	0.080
MMSZ5247-G	J.7	J7	17	7.4	0.25	0.1	13	19	600	0.081
MMSZ5248-G	J.8	J8	18	7	0.25	0.1	14	21	600	0.082
MMSZ5249-G	J.9	J9	19	6.6	0.25	0.1	14	23	600	0.083
MMSZ5250-G	J.0	J0	20	6.2	0.25	0.1	15	25	600	0.084
MMSZ5251-G	K.6	K6	22	5.6	0.25	0.1	17	29	600	0.085
MMSZ5252-G	K.7	K7	24	5.2	0.25	0.1	18	33	600	0.087
MMSZ5253-G	K.8	K8	25	5	0.25	0.1	19	35	600	0.088
MMSZ5254-G	K.9	K9	27	4.6	0.25	0.1	21	41	600	0.09
MMSZ5255-G	K.0	K0	28	4.5	0.25	0.1	21	44	600	0.091
MMSZ5256-G	M.6	M6	30	4.2	0.25	0.1	23	49	600	0.092
MMSZ5257-G	M.7	M7	33	3.8	0.25	0.1	25	58	700	0.092
MMSZ5258-G	M.8	M8	36	3.4	0.25	0.1	27	70	700	0.093
MMSZ5259-G	M.9	M9	39	3.2	0.25	0.1	30	80	800	0.094
MMSZ5260-G	M.0	M0	43	3	0.25	0.1	33	93	900	0.095
MMSZ5261-G	N.6	N6	47	2.7	0.25	0.1	36	105	1000	0.095
MMSZ5262-G	N.7	N7	51	2.5	0.25	0.1	39	125	1100	0.096
MMSZ5263-G	N.8	N8	56	2.2	0.25	0.1	43	150	1300	0.096
MMSZ5264-G	N.9	N9	60	2.1	0.25	0.1	46	170	1400	0.097
MMSZ5265-G	N.0	N0	62	2	0.25	0.1	47	185	1400	0.097
MMSZ5266-G	P.6	P6	68	1.8	0.25	0.1	52	230	1600	0.097
MMSZ5267-G	P.7	P7	75	1.7	0.25	0.1	56	270	1700	0.098

Notes

- Maximum V_F = 0.9 V, at I_F = 10 mA

(1) Measured with device junction in thermal equilibrium with typ. R_{thJA} of 370 K/W

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TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

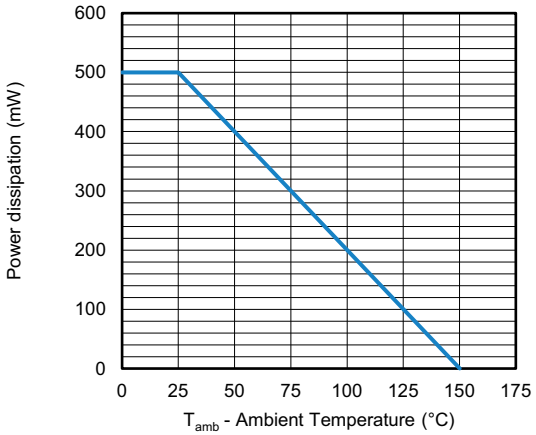

Fig. 1 - Admissible Power Dissipation vs. Ambient Temperature

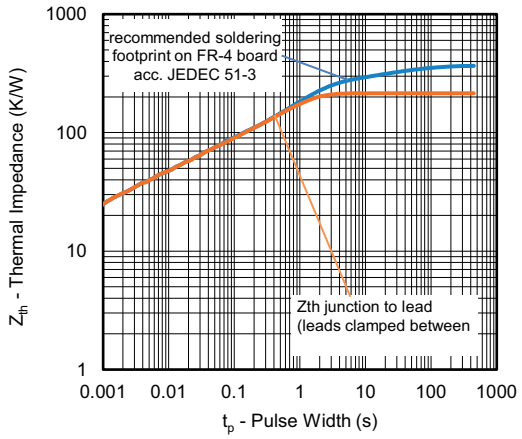

Fig. 2 - Thermal Impedance vs. Time

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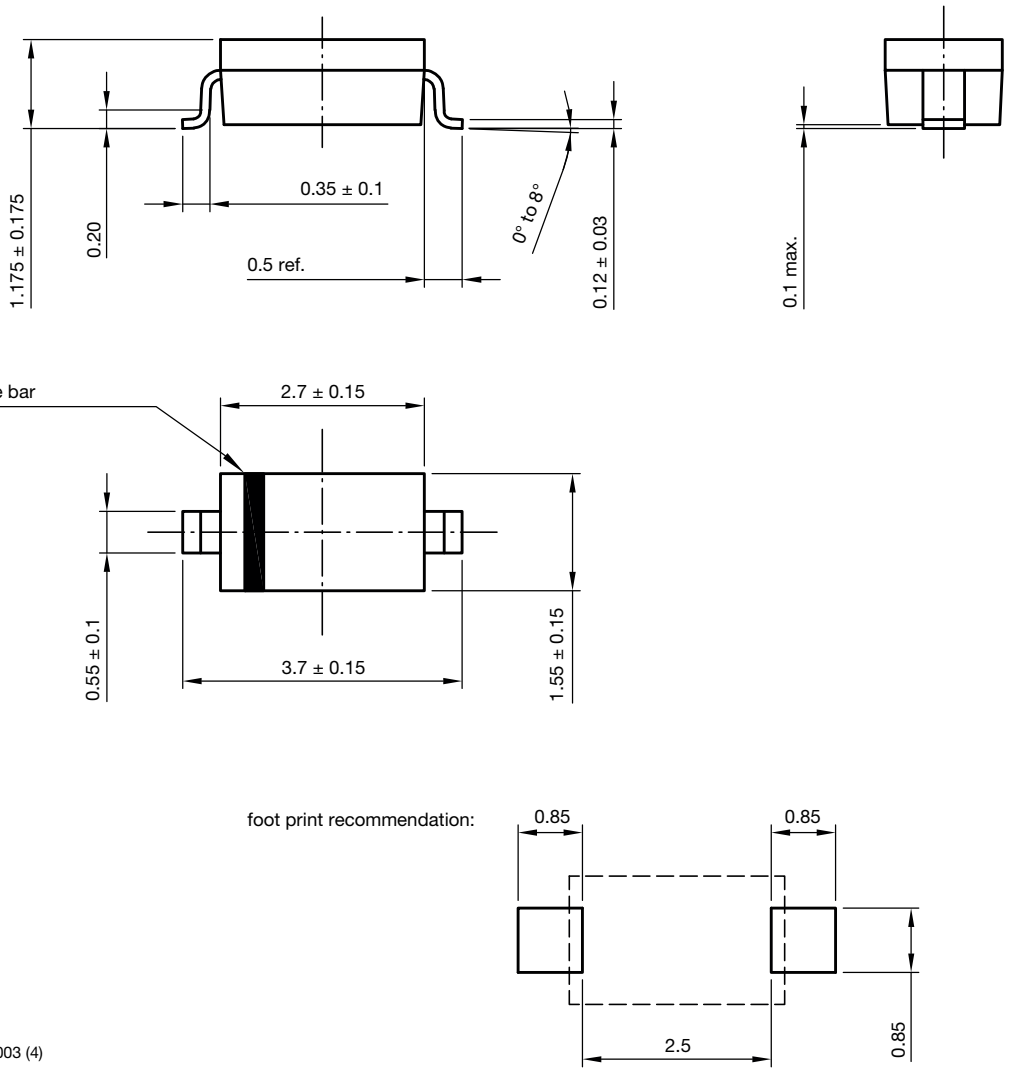
PACKAGE DIMENSIONS in millimeters (inches): **SOD-123**



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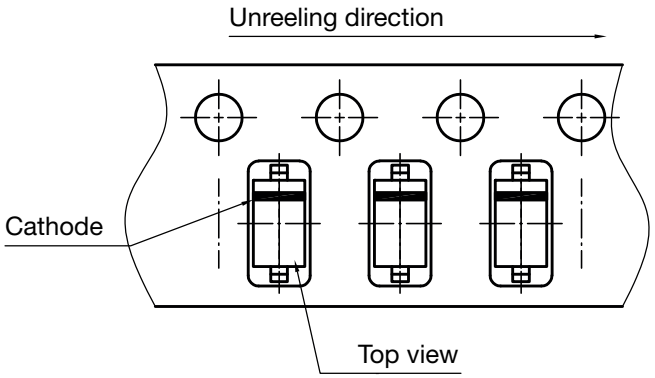
ORIENTATION IN CARRIER TAPE



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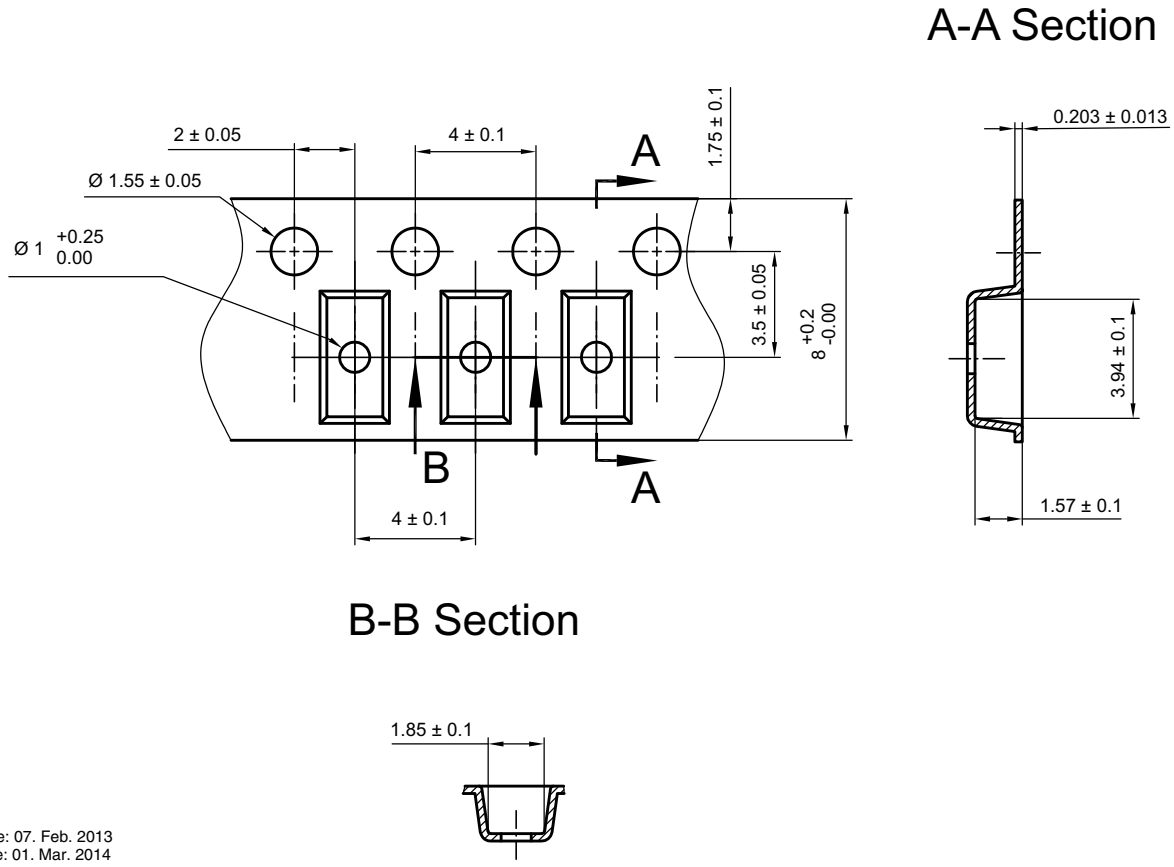

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