500mW, 2.4V - 75V Surface Mount Zener Diode

FEATURES

- AEC-Q101 qualified
- Zener voltage range selection: 2.4V to 75V
- V_Z tolerance selection of ± 5%
- Ideally suited for automated assembly processes
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free

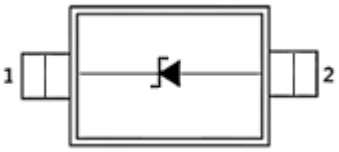
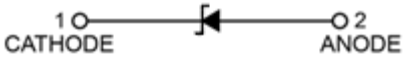
KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
P_D	500	mW
V_Z	2.4 - 75	V
$T_{J\ MAX}$	150	°C
V_F at I_F=10mA	0.9	V
Configuration	Single die	

APPLICATIONS

- General regulation functions

MECHANICAL DATA

- Case: SOD-123
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 10.97mg (approximately)

PACKAGE: SOD-123	PIN CONFIGURATION	CIRCUIT DIAGRAM
		

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Power dissipation(1)	P_D	500	mW
Forward voltage @ I_F=10mA	V_F	0.9	V
Junction temperature	T_J	-55 to +150	°C
Storage temperature	T_{STG}	-55 to +150	°C

Note:

1. Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated, 3.9 x 5.9 inches pad

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance(1)	$R_{\Theta JA}$	250	°C/W

Thermal Performance Note:

1. Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated, 3.9 x 5.9 inches pad

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PART NUMBER	DEVICE MARKING	ZENER VOLTAGE			TEST CURRENT	REGULAR IMPEDANCE		TEST CURRENT	LEAKAGE CURRENT	
		V_Z @ I_{ZT}			I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}	I_{ZK}	I_R @ V_R	
		V			mA	Ω	Ω	mA	μA	V
		Min	Nom	Max		Max	Max		Max	
MMSZ5221BH	C1	2.28	2.4	2.52	20	30	1200	0.25	100	1.0
MMSZ5222BH	C2	2.38	2.5	2.63	20	30	1200	0.25	100	1.0
MMSZ5223BH	C3	2.57	2.7	2.84	20	30	1300	0.25	75	1.0
MMSZ5225BH	C5	2.85	3.0	3.15	20	30	1600	0.25	50	1.0
MMSZ5226BH	G1	3.14	3.3	3.47	20	28	1600	0.25	25	1.0
MMSZ5227BH	G2	3.42	3.6	3.78	20	24	1700	0.25	15	1.0
MMSZ5228BH	G3	3.71	3.9	4.10	20	23	1900	0.25	10	1.0
MMSZ5229BH	G4	4.09	4.3	4.52	20	22	2000	0.25	5	1.0
MMSZ5230BH	G5	4.47	4.7	4.94	20	19	1900	0.25	5	2.0
MMSZ5231BH	E1	4.85	5.1	5.36	20	17	1600	0.25	5	2.0
MMSZ5232BH	E2	5.32	5.6	5.88	20	11	1600	0.25	5	3.0
MMSZ5233BH	E3	5.70	6.0	6.30	20	7	1600	0.25	5	3.5
MMSZ5234BH	E4	5.89	6.2	6.51	20	7	1000	0.25	5	4.0
MMSZ5235BH	E5	6.46	6.8	7.14	20	5	750	0.25	3	5.0
MMSZ5236BH	F1	7.13	7.5	7.88	20	6	500	0.25	3	6.0
MMSZ5237BH	F2	7.79	8.2	8.61	20	8	500	0.25	3	6.5
MMSZ5238BH	F3	8.27	8.7	9.14	20	8	600	0.25	3	6.5
MMSZ5239BH	F4	8.65	9.1	9.56	20	10	600	0.25	3	7.0
MMSZ5240BH	F5	9.50	10	10.50	20	17	600	0.25	3	8.0
MMSZ5241BH	H1	10.45	11	11.55	20	22	600	0.25	2	8.4
MMSZ5242BH	H2	11.40	12	12.60	20	30	600	0.25	1	9.1
MMSZ5243BH	H3	12.35	13	13.65	9.5	13	600	0.25	0.5	9.9
MMSZ5244BH	H4	13.30	14	14.70	9.0	15	600	0.25	0.1	10
MMSZ5245BH	H5	14.25	15	15.75	8.5	16	600	0.25	0.1	11
MMSZ5246BH	J1	15.20	16	16.80	7.8	17	600	0.25	0.1	12
MMSZ5247BH	J2	16.15	17	17.85	7.4	19	600	0.25	0.1	13
MMSZ5248BH	J3	17.10	18	18.90	7.0	21	600	0.25	0.1	14
MMSZ5250BH	J5	19.00	20	21.00	6.2	25	600	0.25	0.1	15
MMSZ5251BH	K1	20.90	22	23.10	5.6	29	600	0.25	0.1	17
MMSZ5252BH	K2	22.80	24	25.20	5.2	33	600	0.25	0.1	18
MMSZ5253BH	K3	23.75	25	26.25	5.0	35	600	0.25	0.1	19
MMSZ5254BH	K4	25.65	27	28.35	5.0	41	600	0.25	0.1	21
MMSZ5255BH	K5	26.60	28	29.40	4.5	44	600	0.25	0.1	21
MMSZ5256BH	M1	28.50	30	31.50	4.2	49	600	0.25	0.1	23
MMSZ5257BH	M2	31.35	33	34.65	3.8	58	700	0.25	0.1	25
MMSZ5258BH	M3	34.20	36	37.80	3.4	70	700	0.25	0.1	27
MMSZ5259BH	M4	37.05	39	40.95	3.2	80	800	0.25	0.1	30
MMSZ5260BH	M5	40.85	43	45.15	3.0	93	900	0.25	0.1	33

MMSZ5261BH	N1	44.65	47	49.35	2.7	105	1000	0.25	0.1	36
MMSZ5262BH	N2	48.45	51	53.55	2.5	125	1100	0.25	0.1	39
MMSZ5263BH	M8	53.20	56	58.80	2.2	150	1300	0.25	0.1	43
MMSZ5265BH	N5	58.90	62	65.10	2.0	185	1400	0.25	0.1	47
MMSZ5267BH	P2	71.25	75	78.75	1.7	270	1700	0.25	0.1	56

ORDERING INFORMATION

ORDERING CODE[1]	PACKAGE	PACKING
MMSZ52xxBH RHG	SOD-123	3,000 / 7" Tape & Reel

Notes:

1. "xx" defines voltage from 2.4V(MMSZ5221BH) to 75V(MMSZ5267BH)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Power Dissipation Curve

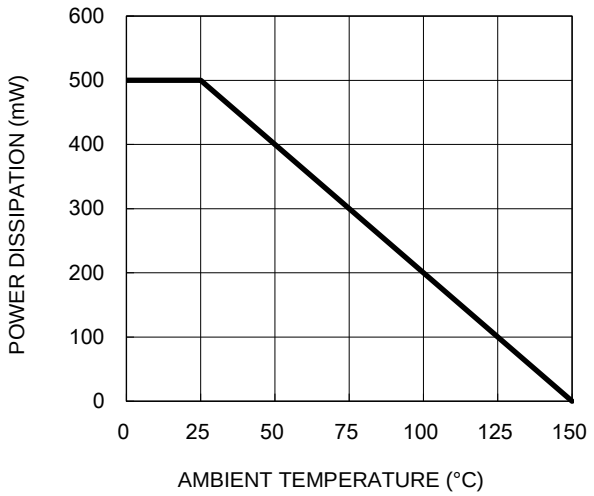


Fig.2 Zener Breakdown Characteristics

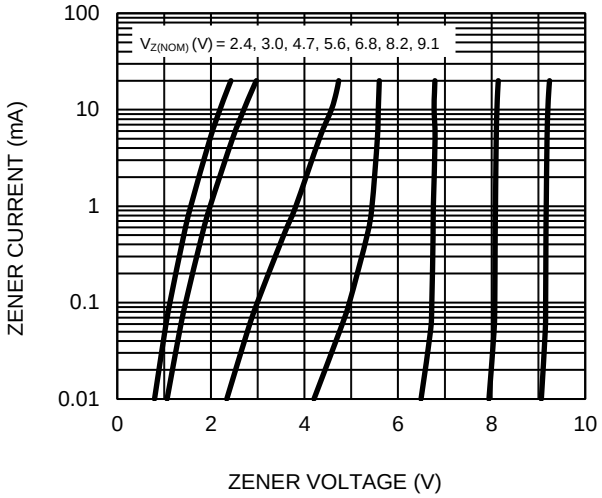


Fig.3 Zener Breakdown Characteristics

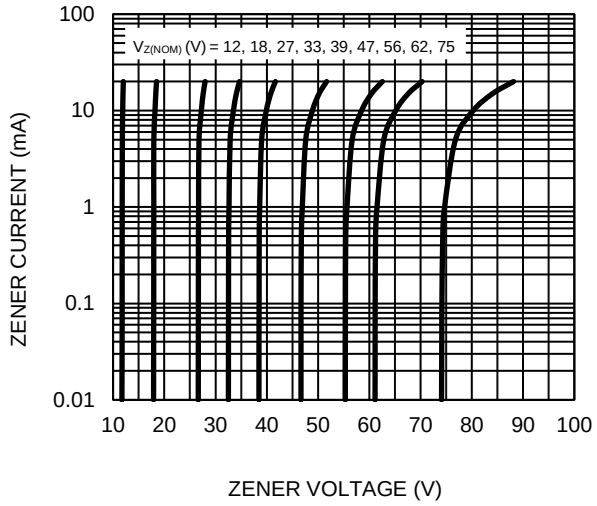


Fig.4 Typical Junction Capacitance

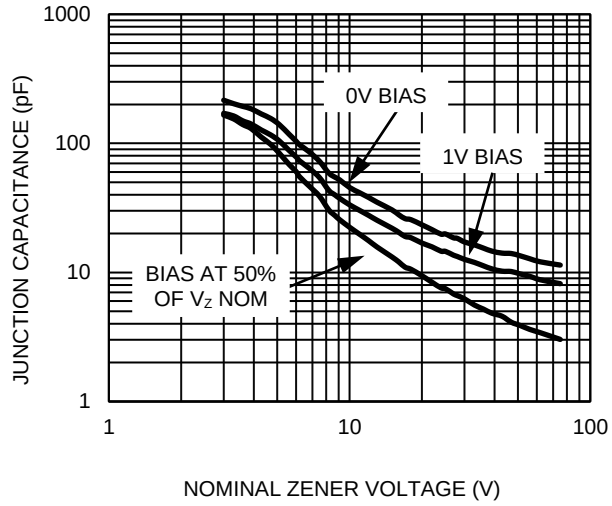
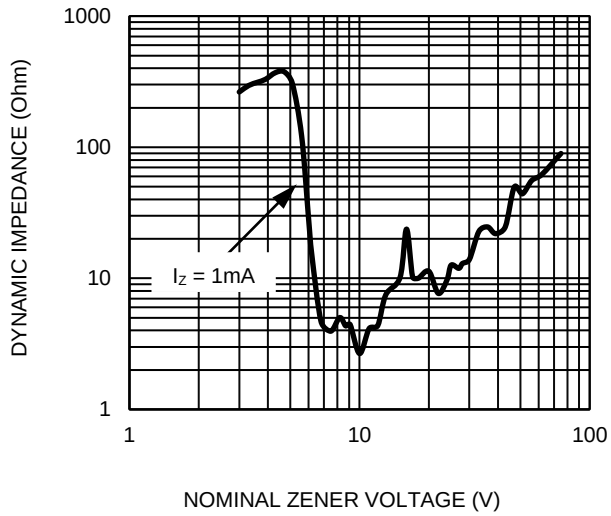
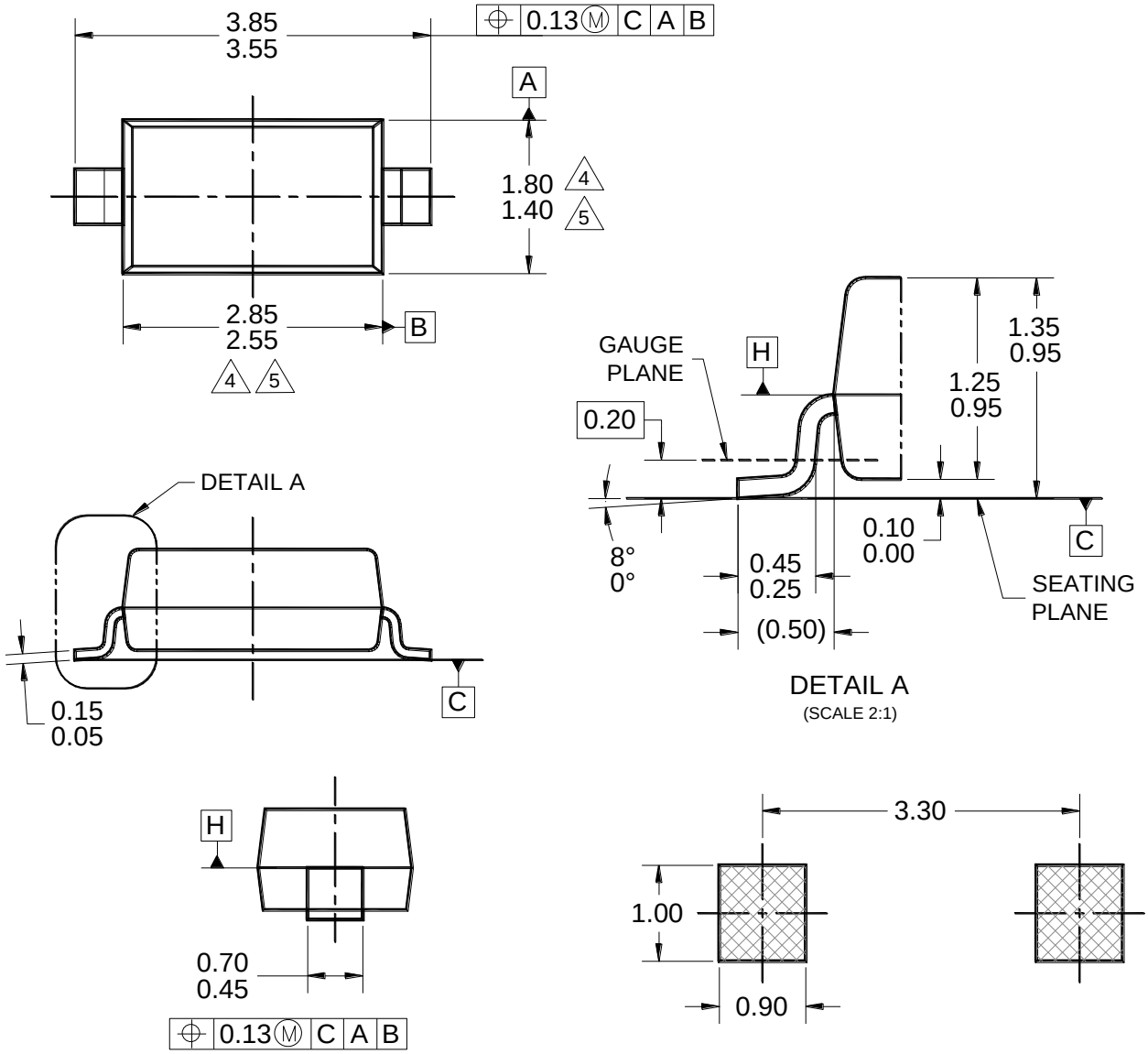


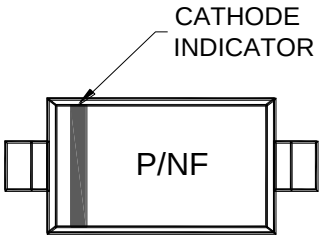
Fig.5 Effect of Zener Voltage on Impedance



PACKAGE OUTLINE DIMENSION

SOD-123





P/N = Device marking
F = Factory code

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: JEDEC DO-215, VARIATION AD, ISSUE D.

4 MOLDED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH.

5 MOLDED PLASTIC BODY LATERAL DIMENSIONS TO BE DETERMINED AT DATUM PLANE H.

6. DWG NO. REF: HQ2SD07-SOD123-046 REV A.

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