

FEATURES

| Low Zener Impedance

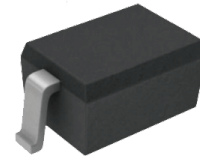
| Power Dissipation of 500mW

| High Stability and High Reliability

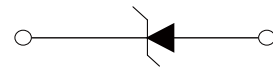
| Polarity: Color band denotes cathode end

| Epoxy UL: 94V-0

| Mounting Position: Any



SOD-123



Schematic Symbol

APPROVALS

RoHS Compliance with 2011/65/EU

HF Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

Parameter	Symbo	Value	Unit
Power Dissipation	P_D	500 ¹⁾	mW
Forward Voltage@ $I_F=10\text{mA}$	V_F	0.9 ²⁾	V
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	340 ³⁾	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction-to-Lead	$R_{\theta JL}$	150 ³⁾	$^\circ\text{C}/\text{W}$
Storage temperature range	T_S	-65 to +150	$^\circ\text{C}$

Note:

1) Device mounted on ceramic PCB: 7.6mm x 9.4mm x 0.87mm with pad areas 25mm²

2) Short duration test pulse used to minimize self-heating effect

3) Thermal Resistance measurement obtained via infrared Scan Method

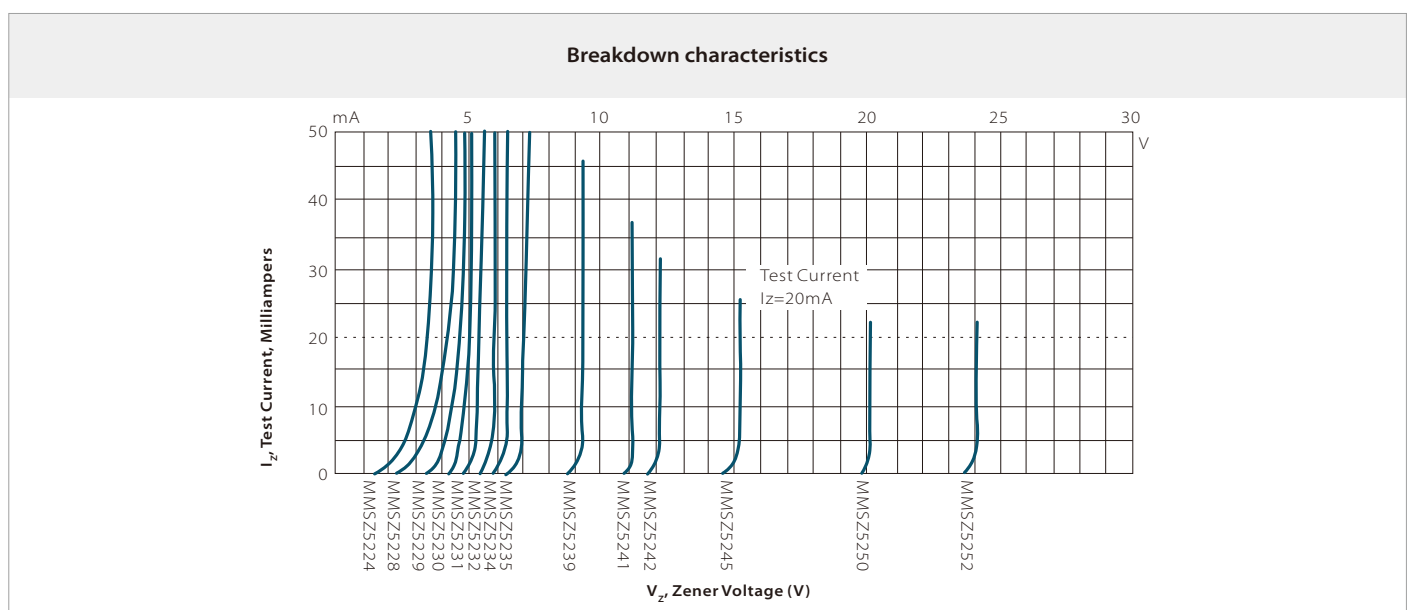
4) f=1KHz

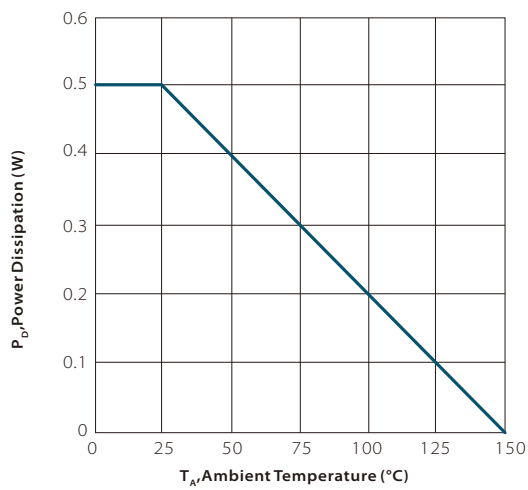
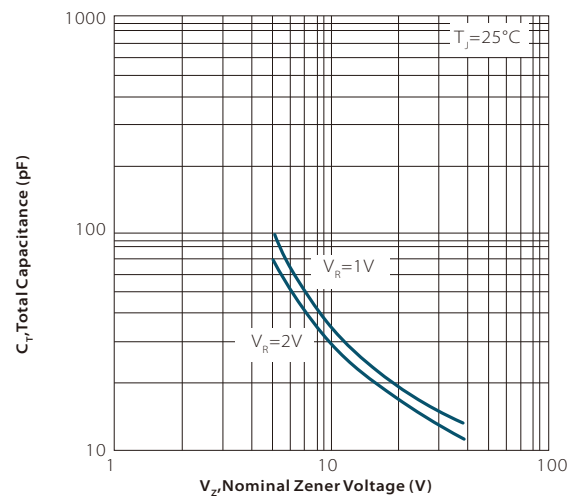
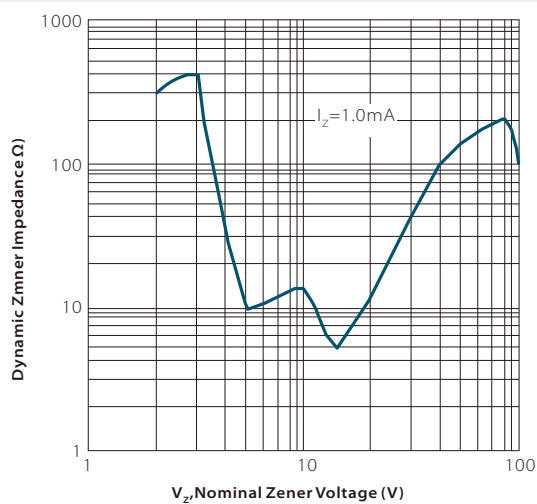
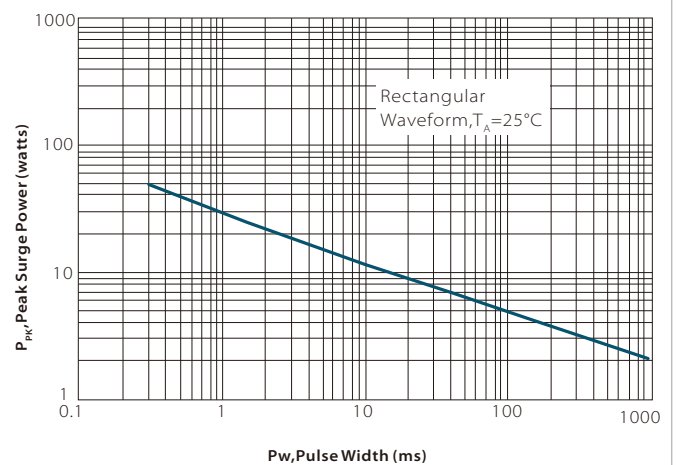
ELECTRICAL CHARACTERISTICS

Part Number	Device Marking Code	Zener Voltage Range			Maximum Zener Impedance			Maximum Reverse Current	
		$V_Z@I_{ZT}$		$I_{ZT}(mA)$	$Z_{ZT}@I_{ZT}$	$Z_{ZK}@I_{ZK}$	I_{ZK}	I_R	V_R
		Min.(V)	Max.(V)	mA	Max.(Ω)	Max.(Ω)	mA	uA	V
MMSZ5221B	C1	2.28	2.52	20	30	1200	0.25	100	1.0
MMSZ5222B	C2	2.38	2.63	20	30	1250	0.25	100	1.0
MMSZ5223B	C3	2.57	2.84	20	30	1300	0.25	75	1.0
MMSZ5224B	C4	2.66	2.94	20	30	1400	0.25	75	1.0
MMSZ5225B	C5	2.85	3.15	20	30	1600	0.25	50	1.0
MMSZ5226B	G1	3.14	3.47	20	28	1600	0.25	25	1.0
MMSZ5227B	G2	3.42	3.78	20	24	1700	0.25	15	1.0
MMSZ5228B	G3	3.71	4.10	20	23	1900	0.25	10	1.0
MMSZ5229B	G4	4.09	4.52	20	22	2000	0.25	5.0	1.0
MMSZ5230B	G5	4.47	4.94	20	19	1900	0.25	5.0	2.0
MMSZ5231B	E1	4.85	5.36	20	17	1600	0.25	5.0	2.0
MMSZ5232B	E2	5.32	5.88	20	11	1600	0.25	5.0	3.0
MMSZ5233B	E3	5.70	6.30	20	7	1600	0.25	5.0	3.5
MMSZ5234B	E4	5.89	6.51	20	7	1000	0.25	5.0	4.0
MMSZ5235B	E5	6.46	7.14	20	5	750	0.25	3	5.0
MMSZ5236B	F1	7.13	7.88	20	6	500	0.25	3	6.0
MMSZ5237B	F2	7.79	8.61	20	8	500	0.25	3	6.5
MMSZ5238B	F3	8.27	9.14	20	8	600	0.25	3	6.5
MMSZ5239B	F4	8.65	9.56	20	10	600	0.25	3	7.0
MMSZ5240B	F5	9.50	10.50	20	17	600	0.25	3	8.0
MMSZ5241B	H1	10.45	11.55	20	22	600	0.25	2.0	8.4
MMSZ5242B	H2	11.40	12.60	20	30	600	0.25	1.0	9.1
MMSZ5243B	H3	12.35	13.65	9.5	13	600	0.25	0.5	9.9
MMSZ5244B	H4	13.30	14.70	9.0	15	600	0.25	0.1	10
MMSZ5245B	H5	14.25	15.75	8.5	16	600	0.25	0.1	11
MMSZ5246B	J1	15.20	16.80	7.8	17	600	0.25	0.1	12
MMSZ5247B	J2	16.15	17.85	7.5	19	600	0.25	0.1	13
MMSZ5248B	J3	17.10	18.90	7.0	21	600	0.25	0.1	14
MMSZ5249B	J4	18.05	19.95	6.6	23	600	0.25	0.1	14
MMSZ5250B	J5	19.00	21.00	6.2	25	600	0.25	0.1	15
MMSZ5251B	K1	20.90	23.10	5.6	29	600	0.25	0.1	17
MMSZ5252B	K2	22.80	25.20	5.2	33	600	0.25	0.1	18
MMSZ5253B	K3	23.75	26.25	5.0	35	600	0.25	0.1	19

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		$V_Z@I_{ZT}$		$I_{ZT}(mA)$	$Z_{ZT}@I_{ZT}$	$Z_{ZK}@I_{ZK}$	I_{ZK}	I_R	V_R
		Min.(V)	Max.(V)	mA	Max.(Ω)	Max.(Ω)	mA	μA	V
MMSZ5254B	K4	25.65	28.35	5.0	41	600	0.25	0.1	21
MMSZ5255B	K5	26.60	29.40	4.5	44	600	0.25	0.1	21
MMSZ5256B	M1	28.50	31.50	4.2	49	600	0.25	0.1	23
MMSZ5257B	M2	31.35	34.65	3.8	58	700	0.25	0.1	25
MMSZ5258B	M3	34.20	37.80	3.4	70	700	0.25	0.1	27
MMSZ5259B	M4	37.05	40.95	3.2	80	800	0.25	0.1	30
MMSZ5260B	M5	40.85	45.15	3.0	93	900	0.25	0.1	33
MMSZ5261B	N1	44.65	49.35	2.7	105	1000	0.25	0.1	36
MMSZ5262B	N2	48.45	53.55	2.5	125	1100	0.25	0.1	39
MMSZ5263B	N3	53.20	58.80	2.2	150	1300	0.25	0.1	43
MMSZ5264B	N4	57.00	63.00	2.1	170	1400	0.25	0.1	46
MMSZ5265B	N5	58.90	65.10	2.0	185	1400	0.25	0.1	47
MMSZ5266B	P1	64.60	71.40	1.8	230	1600	0.25	0.1	52
MMSZ5267B	P2	71.25	78.75	1.7	270	1700	0.25	0.1	56

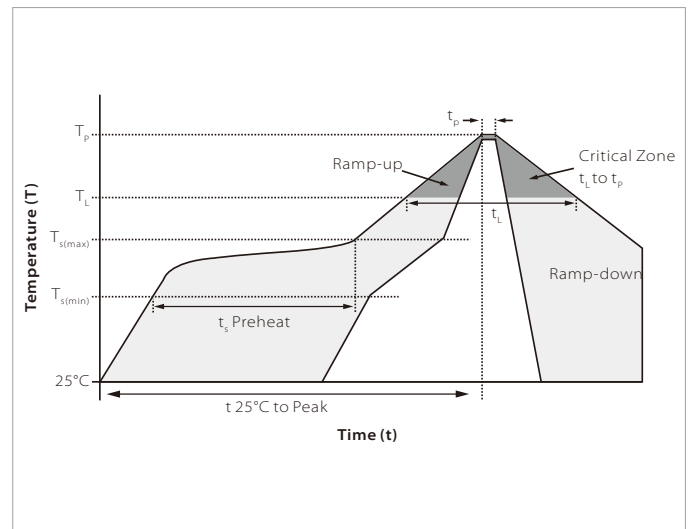
CHARACTERISTIC CURVES



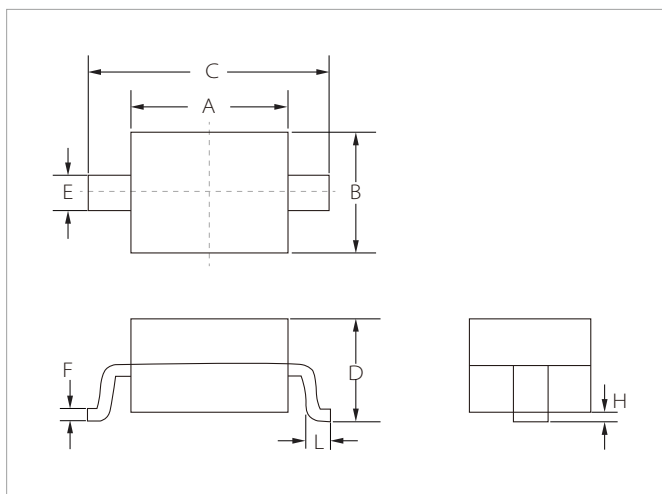
Power Dissipation vs Ambient Temperature

Total Capacitance vs Nominal Zener Voltage

Zener Voltage vs. Zener Impedance

Maximum Nonrepetitive Surge Power


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_p)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_r)	60 – 150 seconds
Peak Temperature (T_p)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C

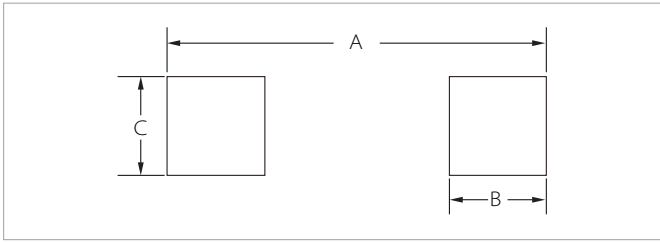


SOD-123 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.60	2.80	0.102	0.110
B	1.50	1.70	0.059	0.067
C	3.55	3.85	0.140	0.152
D	1.05	1.25	0.041	0.049
E	0.45	0.65	0.018	0.026
F	0.08	0.15	0.003	0.006
H	0.00	0.10	0.000	0.004
L	0.25	0.45	0.010	0.018

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.00	4.30	0.157	0.169
B	0.75	0.85	0.030	0.033
C	0.95	1.05	0.037	0.041

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
MMSE5221B-MMSZ5267B	SOD-123	3000PCS	7"

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