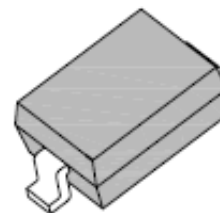


500mW Two Terminals SMD Zener Diodes

Features

- Silicon Planar Zener Construction
- 500mW Power Dissipation
- Zener Breakdown Voltage Range 2.4v to 110v
- Standard Zener Voltage Tolerance is $\pm 5\%$ with a "B" suffix
- Ideal Suited for Automated Assembly Processes
- Ideal for Surface Mounted Application
- RoHS Compliance



SOD-123



Mechanical Data

Case:	SOD-123, molded plastic
Epoxy:	Plastic package has UL flammability classification 94V-0
Terminals:	Solderable per MIL-STD-202, Method 208
Polarity:	Color band denotes the cathode end
Approx. Weight:	0.01 grams

Maximum Ratings ($T_{Ambient}=25^{\circ}C$ unless noted otherwise)

Symbol	Description	Value	Unit	Conditions
P_{tot}	Total Power Dissipation on FR-5 Board at $T_L=75^{\circ}C$	500	mW	Note 1
R_{thJA}	Thermal Resistance Junction to Ambient Air	340	$^{\circ}C/W$	Note 2
V_F	Forward Voltage	0.9	V	I _F =10mA
T_J, T_{STG}	Operating Junction and Storage Temperature Range	-65 to +150	$^{\circ}C$	

- Note:** 1. FR-5=3.5x1.5", using the on minimum recommended footprint.
2. Thermal resistance measurement obtained via infrared scan method.

500mW Two Terminals SMD Zener Diodes

MMSZ5221B - MMSZ5272B

Electrical Characteristics ($T_{Ambient}=25^{\circ}C$ unless noted otherwise)

Part NO.	Marking Code	Nominal Zener Voltage @ I_{ZT}			Test Current $I_{ZT}(mA)$	Max. Zener impedance			Max. Reverse Leakage Current $I_R @ V_R$	
		$V_Z(V)$				$Z_{ZT} @ I_{ZT}$	$Z_{zk} @ I_{zk}$			
		Nom.	Min.	Max.	Ω	Ω	mA	$I_R(\mu A)$	$V_R(V)$	
MMSZ5221B	C1	2.4	2.28	2.52	20	30	1200	0.25	100	1.0
MMSZ5222B	C2	2.5	2.38	2.63	20	30	1250	0.25	100	1.0
MMSZ5223B	C3	2.7	2.57	2.84	20	30	1300	0.25	75	1.0
MMSZ5224B	C4	2.8	2.66	2.94	20	30	1400	0.25	75	1.0
MMSZ5225B	C5	3.0	2.85	3.15	20	30	1600	0.25	50	1.0
MMSZ5226B	D1	3.3	3.14	3.47	20	28	1600	0.25	25	1.0
MMSZ5227B	D2	3.6	3.42	3.78	20	24	1700	0.25	15	1.0
MMSZ5228B	D3	3.9	3.71	4.10	20	23	1900	0.25	10	1.0
MMSZ5229B	D4	4.3	4.09	4.52	20	22	2000	0.25	5.0	1.0
MMSZ5230B	D5	4.7	4.47	4.94	20	19	1900	0.25	5.0	2.0
MMSZ5231B	E1	5.1	4.85	5.36	20	17	1600	0.25	5.0	2.0
MMSZ5232B	E2	5.6	5.32	5.88	20	11	1600	0.25	5.0	3.0
MMSZ5233B	E3	6.0	5.70	6.30	20	7	1600	0.25	5.0	3.5
MMSZ5234B	E4	6.2	5.89	6.51	20	7	1000	0.25	5.0	4.0
MMSZ5235B	E5	6.8	6.46	7.14	20	5	750	0.25	3.0	5.0
MMSZ5236B	F1	7.5	7.13	7.88	20	6	500	0.25	3.0	6.0
MMSZ5237B	F2	8.2	7.79	8.61	20	8	500	0.25	3.0	6.5
MMSZ5238B	F3	8.7	8.27	9.14	20	8	600	0.25	3.0	6.5
MMSZ5239B	F4	9.1	8.65	9.56	20	10	600	0.25	3.0	7.0
MMSZ5240B	F5	10	9.50	10.50	20	17	600	0.25	3.0	8.0
MMSZ5241B	H1	11	10.45	11.55	20	22	600	0.25	2.0	8.4
MMSZ5242B	H2	12	11.40	12.60	20	30	600	0.25	1.0	9.1
MMSZ5243B	H3	13	12.35	13.65	9.5	13	600	0.25	0.5	9.9
MMSZ5244B	H4	14	13.30	14.70	9.0	15	600	0.25	0.1	10
MMSZ5245B	H5	15	14.25	15.75	8.5	16	600	0.25	0.1	11
MMSZ5246B	J1	16	15.20	16.80	7.8	17	600	0.25	0.1	12
MMSZ5247B	J2	17	16.15	17.85	7.4	19	600	0.25	0.1	13
MMSZ5248B	J3	18	17.10	18.90	7.0	21	600	0.25	0.1	14
MMSZ5249B	J4	19	18.05	19.95	6.6	23	600	0.25	0.1	14
MMSZ5250B	J5	20	19.00	21.00	6.2	25	600	0.25	0.1	15
MMSZ5251B	K1	22	20.90	23.10	5.6	29	600	0.25	0.1	17
MMSZ5252B	K2	24	22.80	25.20	5.2	33	600	0.25	0.1	18

500mW Two Terminals SMD Zener Diodes

MMSZ5221B – MMSZ5272B

Electrical Characteristics ($T_{Ambient}=25^{\circ}\text{C}$ unless noted otherwise)

Part NO.	Marking Code	Nominal Zener Voltage @ I_{ZT}			Test Current	Max. Zener impedance			Max. Reverse Leakage Current I_R @ V_R	
		$V_Z(V)$				$I_{ZT}(mA)$	Z_{ZT} @ I_{ZT}	Z_{zk} @ I_{zk}		
		Nom.	Min.	Max.	Ω		Ω	mA	$I_R(\mu A)$	$V_R(V)$
MMSZ5253B	K3	25	23.75	26.25	5.0	35	600	0.25	0.1	19
MMSZ5254B	K4	27	25.65	28.35	4.6	41	600	0.25	0.1	21
MMSZ5255B	K5	28	26.60	29.40	4.5	44	600	0.25	0.1	21
MMSZ5256B	M1	30	28.50	31.50	4.2	49	600	0.25	0.1	23
MMSZ5257B	M2	33	31.35	34.65	3.8	58	700	0.25	0.1	25
MMSZ5258B	M3	36	34.20	37.80	3.4	70	700	0.25	0.1	27
MMSZ5259B	M4	39	37.05	40.95	3.2	80	800	0.25	0.1	30
MMSZ5260B	M5	43	40.85	45.15	3.0	93	900	0.25	0.1	33
MMSZ5261B	N1	47	44.65	49.35	2.7	105	1000	0.25	0.1	36
MMSZ5262B	N2	51	48.45	53.55	2.5	125	1100	0.25	0.1	39
MMSZ5263B	N3	56	53.20	58.80	2.2	150	1300	0.25	0.1	43
MMSZ5264B	N4	60	57.00	63.00	2.1	170	1400	0.25	0.1	46
MMSZ5265B	N5	62	58.90	65.10	2.0	185	1400	0.25	0.1	47
MMSZ5266B	P1	68	64.60	71.40	1.8	230	1600	0.25	0.1	52
MMSZ5267B	P2	75	71.25	78.75	1.7	270	1700	0.25	0.1	56
MMSZ5268B	P3	82	77.90	86.10	1.5	330	2000	0.25	0.1	62
MMSZ5269B	P4	87	82.65	91.35	1.4	370	2200	0.25	0.1	68
MMSZ5270B	P5	91	86.45	95.55	1.4	400	2300	0.25	0.1	69
MMSZ5272B	R2	110	104.5	115.5	1.1	750	3000	0.25	0.1	84

500mW Two Terminals SMD Zener Diodes

MMSZ5221B – MMSZ5272B

Typical Characteristics Curves

Fig.1- Temperature Coefficients

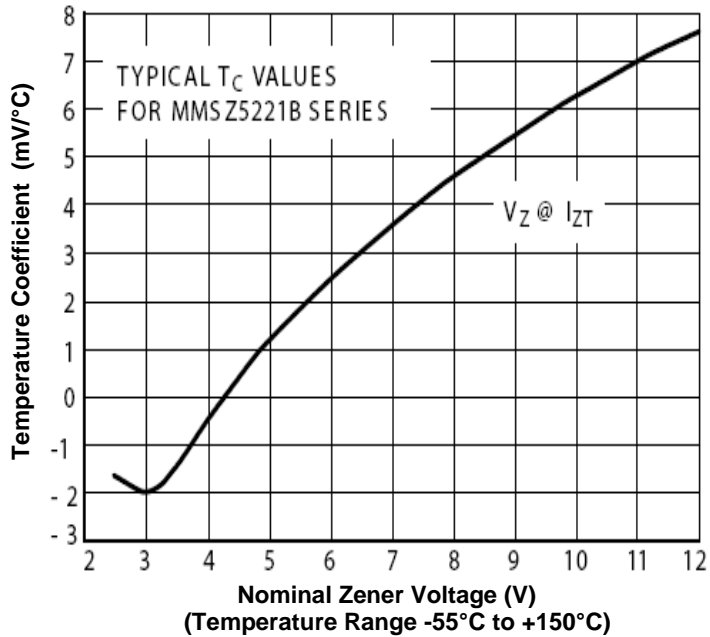


Fig.2- Temperature Coefficients

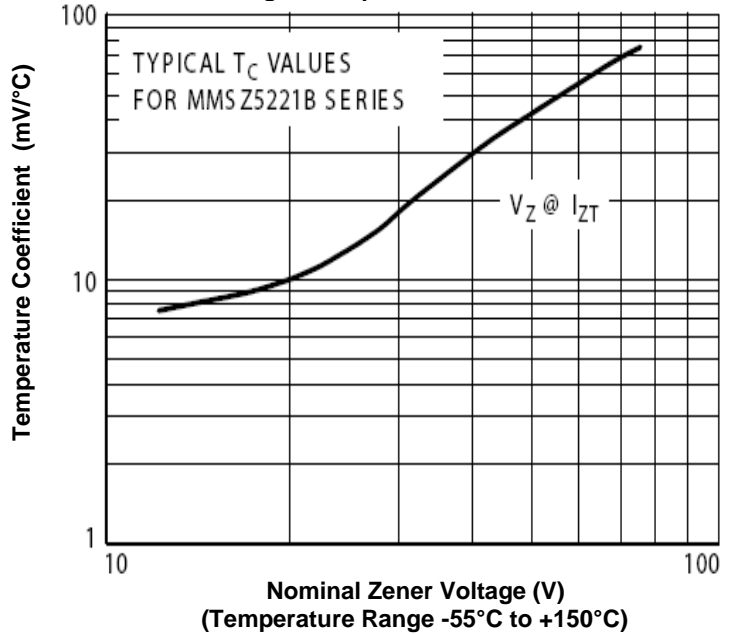


Fig.3- Steady State Power Derating Curve

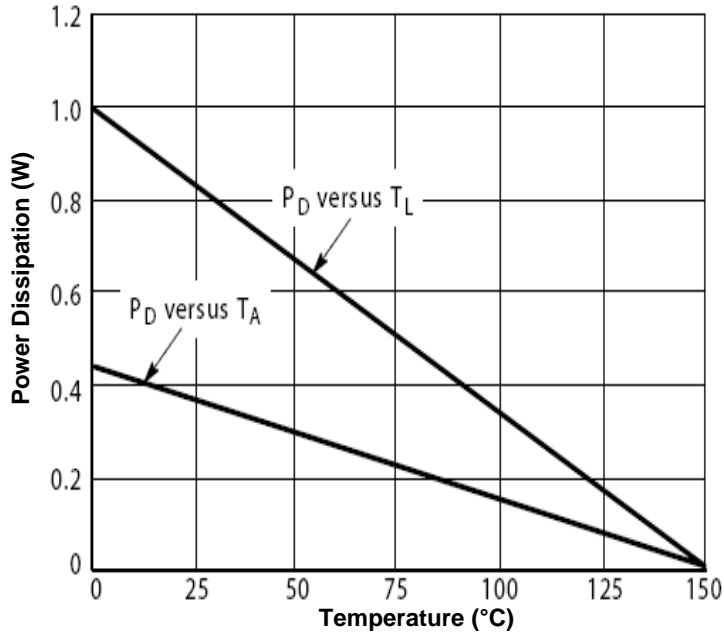
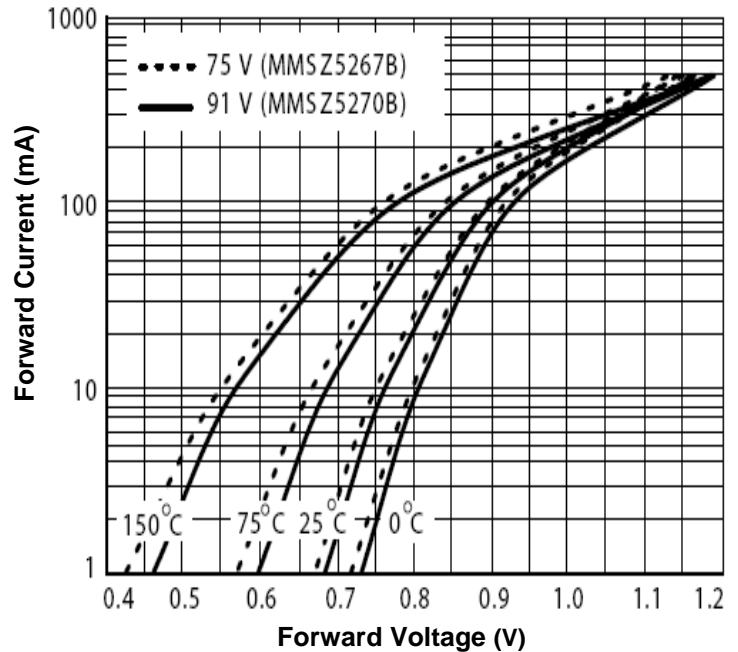


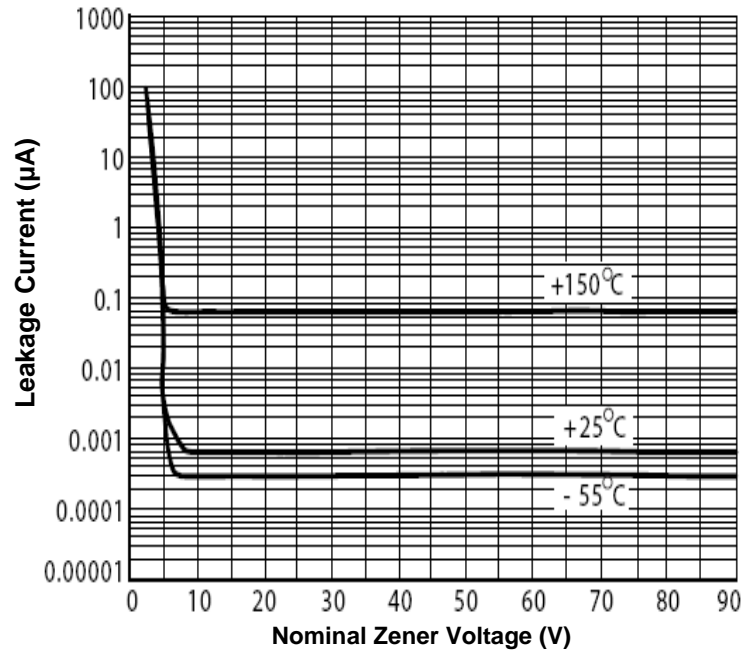
Fig.4- Typical Forward Voltage



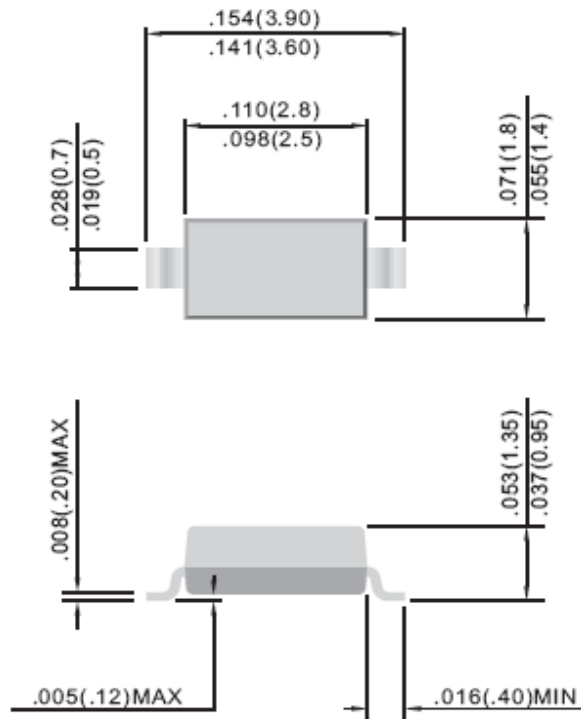
500mW Two Terminals SMD Zener Diodes

MMSZ5221B - MMSZ5272B

Fig.5- Typical Leakage Current



Dimensions in inch (mm)

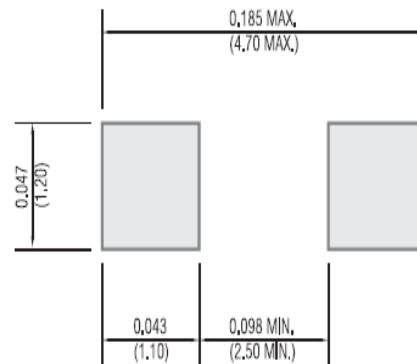


SOD-123

500mW Two Terminals SMD Zener Diodes

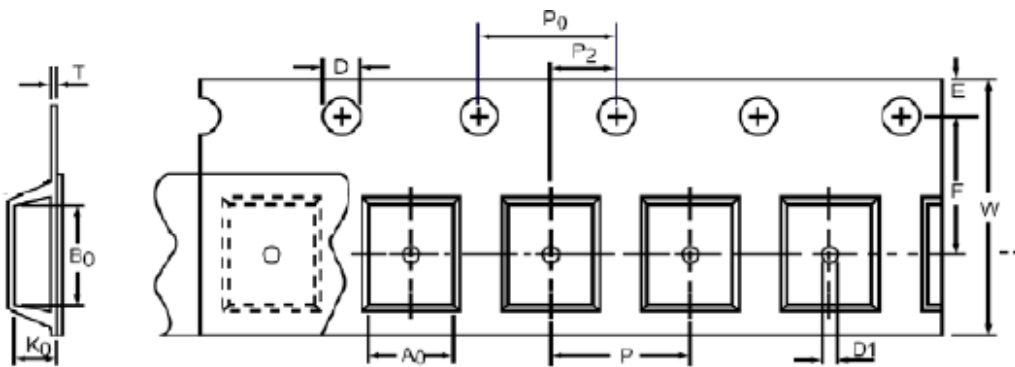
MMSZ5221B – MMSZ5272B

Mounting Pad Layout in inch (mm)



Packing Information:

Carrier Tape Dimensions (in mm)



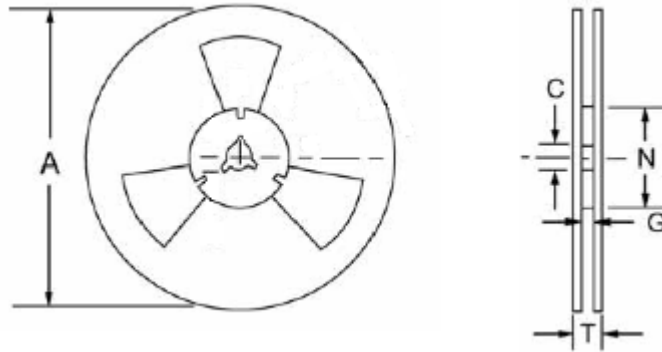
Product Type	A0	B0	K0	D	P0	P
	See Note			1.55±0.05	4.0±0.1	4.0±0.1
SOD-123	W	E	T	D1	F	P2
	8.0+0.15/-0.3	1.75±0.10	0.20±0.05	1.0±0.1	3.5±0.05	2.0±0.05

Note: Symbol A0, B0, K0 are determined by the maximum dimensions of the component size.
The clearance between the component and the cavity must be within 0.05 mm (0.002") min. to 0.50 mm (0.02") max. for 8 mm tape.

500mW Two Terminals SMD Zener Diodes

MMSZ5221B – MMSZ5272B

Reel Dimensions (in mm)



A	C	G	N	T
178.0±2.0	13.5±1.0	9.9 max.	50 min.	14.4 max.

Packing Quantity Information:

Quantity	PCS per Inner Box	PCS per Carton
TR70 Tape & Reel	3000/Reel	240000

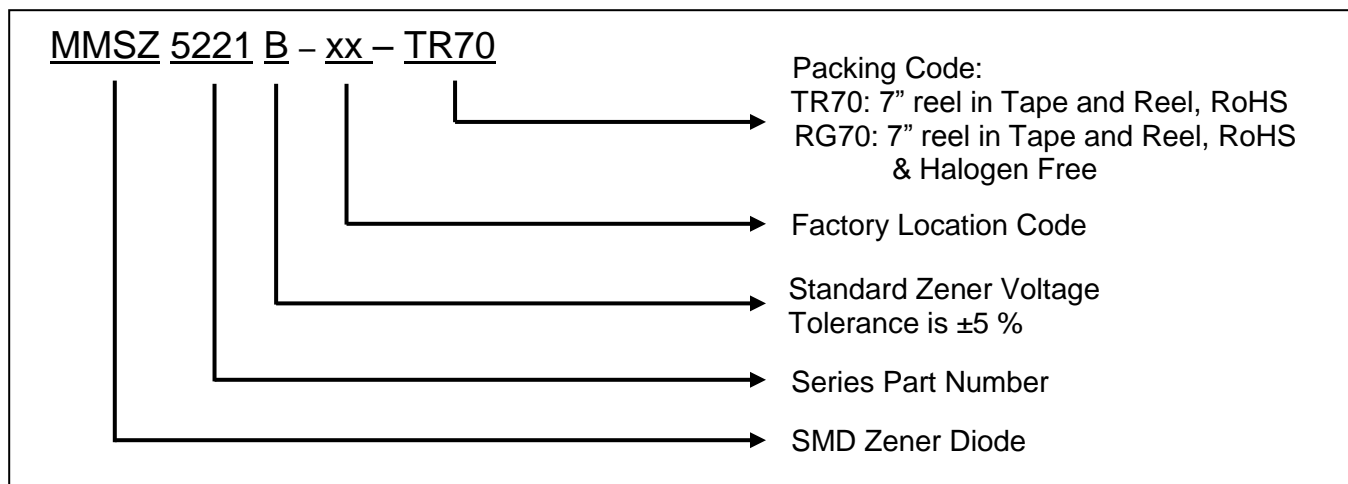
Carton Size Information:

Cartoon Size
390X270X400 (in mm)

500mW Two Terminals SMD Zener Diodes

MMSZ5221B – MMSZ5272B

Ordering Information



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