

## MMSZ5221B - MMSZ5272B

$V_Z$  : 2.4 to 110 V

$P_D$  : 500 mW

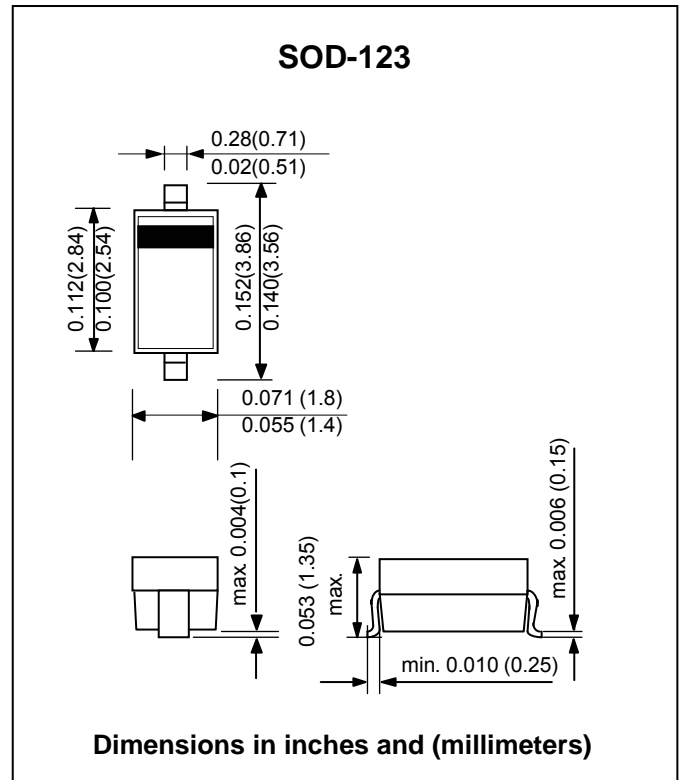
### FEATURES :

- \* Total Power Dissipation 500 mW on FR-4 or FR-5 Board
- \* Wide Zener Reverse Voltage Range 2.4 V to 110 V
- \* Package Designed for Optimal Automated Board Assembly
- \* Small Package Size for High Density Applications
- \* General Purpose, Medium Current
- \* Pb / RoHS Free

### MECHANICAL DATA :

- \* Case : SOD-123
- \* Weight : 0.01 gram (approximately)

## ZENER DIODES



### Maximum Ratings and Thermal Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Zener Current see Table "Characteristics"			
Total Power Dissipation on FR-5 Board, at $T_L = 75^\circ\text{C}$	$P_D$	500 <sup>(1)</sup>	mW
Derated above 75°C		6.7	mW/°C
Maximum Forward Voltage at $I_F = 10$ mA	$V_F$	0.9	V
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	340	°C/W
Junction and Storage Temperature Range	$T_J, T_S$	-55 to + 150	°C

#### Note :

(1) FR-5 = 3.5 x 1.5 inches, using the minimum recommended footprint

## ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specific

Type No.	Marking	Zener Voltage <sup>(1,2)</sup>			Test Current	Maximum Zener Impedance <sup>(3)</sup>		Test Current	Maximum Reverse Leakage Current	
		V <sub>Z</sub> @ I <sub>ZT</sub> (V)			I <sub>ZT</sub>	Z <sub>ZT</sub> @ I <sub>ZT</sub>	Z <sub>ZT</sub> @ I <sub>ZK</sub>	I <sub>ZK</sub>	I <sub>R</sub> @	V <sub>R</sub>
		Min.	Nom.	Max.	(mA)	(Ω)	(Ω)	(mA)	(μA)	(V)
MMSZ 5221B	C1	2.28	2.4	2.52	20	30	1200	0.25	100	1.0
MMSZ 5222B	C2	2.38	2.5	2.63	20	30	1250	0.25	100	1.0
MMSZ 5223B	C3	2.57	2.7	2.84	20	30	1300	0.25	75	1.0
MMSZ 5224B	C4	2.66	2.8	2.94	20	30	1400	0.25	75	1.0
MMSZ 5225B	C5	2.85	3.0	3.15	20	29	1600	0.25	50	1.0
MMSZ 5226B	D1	3.14	3.3	3.47	20	28	1600	0.25	25	1.0
MMSZ 5227B	D2	3.42	3.6	3.78	20	24	1700	0.25	15	1.0
MMSZ 5228B	D3	3.71	3.9	4.10	20	23	1900	0.25	10	1.0
MMSZ 5229B	D4	4.09	4.3	4.52	20	22	2000	0.25	5	1.0
MMSZ 5230B	D5	4.47	4.7	4.94	20	19	1900	0.25	5	2.0
MMSZ 5231B	E1	4.85	5.1	5.36	20	17	1600	0.25	5	2.0
MMSZ 5232B	E2	5.32	5.6	5.88	20	11	1600	0.25	5	3.0
MMSZ 5233B	E3	5.70	6.0	6.30	20	7	1600	0.25	5	3.5
MMSZ 5234B	E4	5.89	6.2	6.51	20	7	1000	0.25	5	4.0
MMSZ 5235B	E5	6.46	6.8	7.14	20	5	750	0.25	3	5.0
MMSZ 5236B	F1	7.13	7.5	7.88	20	6	500	0.25	3	6.0
MMSZ 5237B	F2	7.79	8.2	8.61	20	8	500	0.25	3	6.5
MMSZ 5238B	F3	8.27	8.7	9.14	20	8	600	0.25	3	6.5
MMSZ 5239B	F4	8.65	9.1	9.56	20	10	600	0.25	3	7.0
MMSZ 5240B	F5	9.50	10	10.50	20	17	600	0.25	3	8.0
MMSZ 5241B	H1	10.45	11	11.50	20	22	600	0.25	2	8.4
MMSZ 5242B	H2	11.40	12	12.60	20	30	600	0.25	1	9.1
MMSZ 5243B	H3	12.35	13	13.65	9.5	13	600	0.25	0.5	9.9
MMSZ 5244B	H4	13.30	14	14.70	9.0	15	600	0.25	0.1	10
MMSZ 5245B	H5	14.25	15	15.75	8.5	16	600	0.25	0.1	11
MMSZ 5246B	J1	15.20	16	16.80	7.8	17	600	0.25	0.1	12
MMSZ 5247B	J2	16.15	17	17.85	7.4	19	600	0.25	0.1	13
MMSZ 5248B	J3	17.10	18	18.90	7.0	21	600	0.25	0.1	14
MMSZ 5250B	J5	19.00	20	21.00	6.2	25	600	0.25	0.1	15
MMSZ 5251B	K1	20.90	22	23.10	5.6	29	600	0.25	0.1	17
MMSZ 5252B	K2	22.80	24	25.20	5.2	33	600	0.25	0.1	18
MMSZ 5253B	K3	23.75	25	26.25	5	35	600	0.25	0.1	19
MMSZ 5254B	K4	25.65	27	28.35	4.6	41	600	0.25	0.1	21
MMSZ 5255B	K5	26.60	28	29.40	4.5	44	600	0.25	0.1	21
MMSZ 5256B	M1	28.50	30	31.50	4.2	49	600	0.25	0.1	23
MMSZ 5257B	M2	31.35	33	34.65	3.8	58	700	0.25	0.1	25
MMSZ 5258B	M3	34.20	36	37.80	3.4	70	700	0.25	0.1	27
MMSZ 5259B	M4	37.05	39	40.95	3.2	80	800	0.25	0.1	30
MMSZ 5260B	M5	40.85	43	45.15	3.0	93	900	0.25	0.1	33
MMSZ 5261B	N1	44.65	47	49.35	2.7	105	1000	0.25	0.1	36
MMSZ 5262B	N2	48.45	51	53.55	2.5	125	1100	0.25	0.1	39
MMSZ 5263B	N3	53.20	56	58.80	2.2	150	1300	0.25	0.1	43
MMSZ 5264B	N4	57.00	60	63.00	2.1	170	1400	0.25	0.1	46
MMSZ 5265B	N5	58.90	62	65.10	2.0	185	1400	0.25	0.1	47
MMSZ 5266B	P1	64.60	68	71.40	1.8	230	1600	0.25	0.1	52
MMSZ 5267B	P2	71.25	75	78.75	1.7	270	1700	0.25	0.1	56
MMSZ 5268B	P3	77.90	82	86.10	1.5	330	2000	0.25	0.1	62
MMSZ 5269B	P4	82.65	87	91.35	1.4	370	2200	0.25	0.1	68
MMSZ 5270B	P5	86.45	91	95.55	1.4	400	2300	0.25	0.1	69
MMSZ 5272B	R2	104.50	110	115.50	1.1	750	3000	0.25	0.1	84

**Notes :**

- (1) The type numbers shown have a standard tolerance of ± 5% on the nominal Zener voltage.
- (2) Nominal Zener voltage is measured with the device junction in thermal equilibrium at T<sub>J</sub> = 30°C ± 1°C
- (3) Z<sub>ZT</sub> and Z<sub>ZK</sub> are measured by device drop across the device by the AC current apply  
The specified limits are for I<sub>Z(AC)</sub> = 0.1 I<sub>Z(DC)</sub> with the AC frequency 1 KHz