



# MMSZ5221B THRU MMSZ5259B

## Surface Mount Zener Diode



Voltage Range  
2.4 to 39 Volts  
500m Watts Power Dissipation

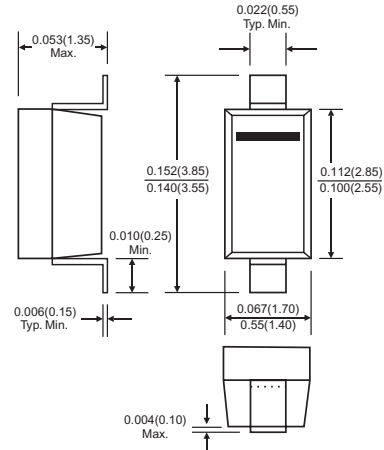
### Features

- ✧ Planar die construction
- ✧ 500 mW power dissipation
- ✧ Ideally suited for automated assembly processes
- ✧ General purpose, medium current
- ✧ Standard zener voltage tolerance is  $\pm 5\%$  tolerance with a "B" suffix

### Mechanical Data

- ✧ Case: SOD-123, Plastic
- ✧ Terminals: Solderable per MIL-STD-202, Method 208
- ✧ Polarity: Cathode band
- ✧ Marking: Date Code and Type Code  
Type Code: See table on Page 2
- ✧ Weight: 0.01 grams (approx.)

### SOD-123



Dimensions in inches and (millimeters)

### Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

#### Maximum Ratings

Type Number	Symbol	Value	Units
Forward Voltage @ IF = 10mA	V <sub>F</sub>	0.9	V
Power Dissipation (Note 1)	P <sub>d</sub>	500	mW
Thermal Resistance Junction to Ambient Air (Note 1)	R <sub>θJA</sub>	350	K/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

Notes: 1. Device Mounted on Ceramic PCB, 7.6mm x 9.4mm x 0.87mm with Pad Areas 25mm<sup>2</sup>  
2. Tested with PulsesTp ≤ 1.0ms.

### RATINGS AND CHARACTERISTIC CURVES (MMSZ5221B THRU MMSZ5259B)

FIG.1- POWER DISSIPATION VS AMBIENT TEMPERATURE

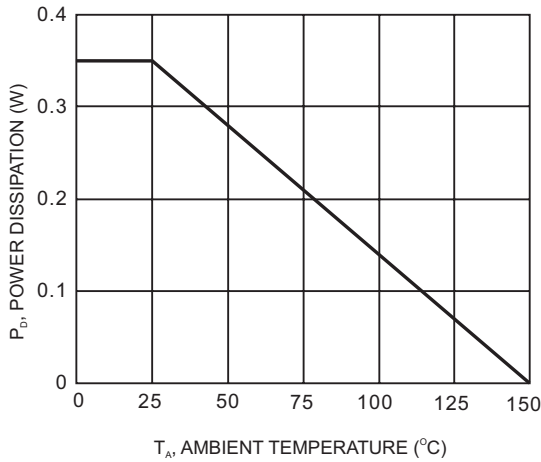


FIG.2- STEADY STATE POWER DERATING

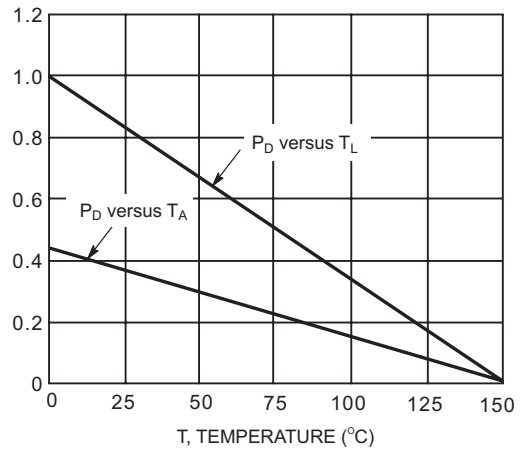


FIG.3- MAXIMUM NONREPETITIVE SURGE POWER DERATING

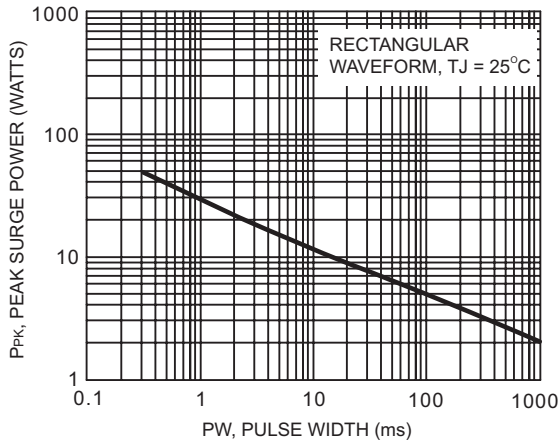
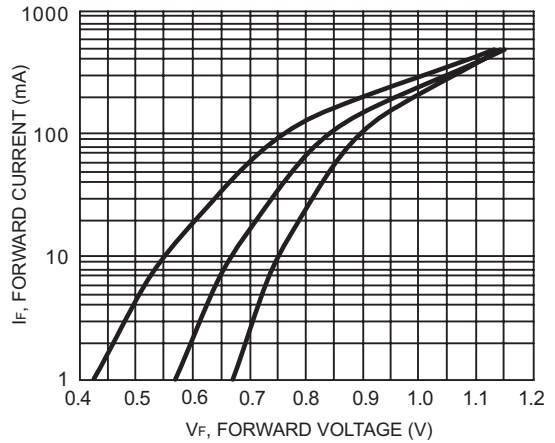


FIG.4- TYPICAL FORWARD VOLTAGE



ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

Device (Note 1)	Device Marking Code	Zener Voltage Range (Note 2)				Maximum Zener Impedance		Maximum Reverse Leakage Current	
		Vz @ IzT			IzT	ZzT @ IzT = 0.25mA	ZzK @ IzK	IR @ VR	
		Nom (V)	Min (V)	Max (V)	mA			Ohms	Ohms
MMSZ5221B	C1	2.4	2.28	2.52	20	30	1200	100	1.0
MMSZ5223B	C3	2.7	2.57	2.84	20	30	1300	75	1.0
MMSZ5225B	C5	3.0	2.85	3.15	20	30	1600	50	1.0
MMSZ5226B	D1	3.3	3.14	3.47	20	28	1600	25	1.0
MMSZ5227B	D2	3.6	3.42	3.78	20	24	1700	15	1.0
MMSZ5228B	D3	3.9	3.71	4.10	20	23	1900	10	1.0
MMSZ5229B	D4	4.3	4.09	4.52	20	22	2000	5.0	1.0
MMSZ5230B	D5	4.7	4.47	4.94	20	19	1900	5.0	2.0
MMSZ5231B	E1	5.1	4.85	5.36	20	17	1600	5.0	2.0
MMSZ5232B	E2	5.6	5.32	5.88	20	11	1600	5.0	3.0
MMSZ5233B	E3	6.0	5.70	6.30	20	7	1600	5.0	3.5
MMSZ5234B	E4	6.2	5.89	6.51	20	7	1000	5.0	4.0
MMSZ5235B	E5	6.8	6.46	7.14	20	5	750	3.0	5.0
MMSZ5236B	F1	7.5	7.13	7.88	20	6	500	3.0	6.0
MMSZ5237B	F2	8.2	7.79	8.61	20	8	500	3.0	6.5
MMSZ5238B	F3	8.7	8.27	9.14	20	8	600	3.0	6.5
MMSZ5239B	F4	9.1	8.65	9.56	20	10	600	3.0	7.0
MMSZ5240B	F5	10	9.50	10.50	20	17	600	3.0	8.0
MMSZ5241B	H1	11	10.45	11.55	20	22	600	2.0	8.4
MMSZ5242B	H2	12	11.40	12.60	20	30	600	1.0	9.1
MMSZ5243B	H3	13	12.35	13.65	9.5	13	600	0.5	9.9
MMSZ5245B	H5	15	14.25	15.75	8.5	16	600	0.1	11
MMSZ5246B	J1	16	15.20	16.80	7.8	17	600	0.1	12
MMSZ5248B	J3	18	17.10	18.90	7.0	21	600	0.1	14
MMSZ5250B	J5	20	19.00	21.00	6.2	25	600	0.1	15
MMSZ5251B	K1	22	20.90	23.10	5.6	29	600	0.1	17
MMSZ5252B	K2	24	22.80	25.20	5.2	33	600	0.1	18
MMSZ5254B	K4	27	25.65	28.35	5.0	41	600	0.1	21
MMSZ5255B	K5	28	26.60	29.40	4.5	44	600	0.1	21
MMSZ5256B	M1	30	28.50	31.50	4.2	49	600	0.1	23
MMSZ5257B	M2	33	31.35	34.65	3.8	58	700	0.1	25
MMSZ5258B	M3	36	34.20	37.80	3.4	70	700	0.1	27
MMSZ5259B	M4	39	37.05	40.95	3.2	80	800	0.1	30

Notes: 1: Valid provided that device terminals are kept at ambient temperature.

2. Tested with pulses, Tp ≤ 1.0ms.