



# MMSZ5221B THRU MMSZ5263B

Surface Mount Zener Diode

## Features

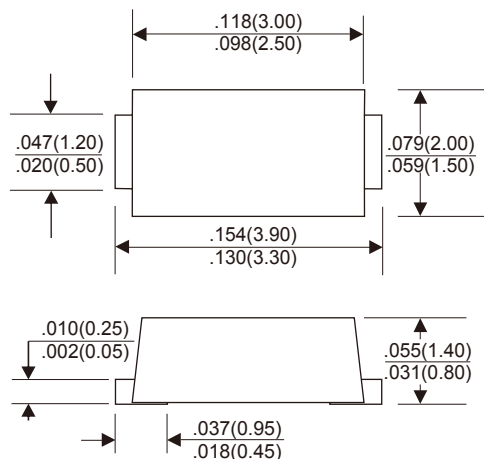
- ★ Ideally Suited for Automated Assembly Processes
- ★ High reliability
- ★ Zener voltage tolerance is  $\pm 5\%$

## Mechanical Data

- ★ Case: Molded plastic SOD-123FL
- ★ Epoxy: UL 94V-0 rate flame retardant
- ★ Terminals: Solderable per MIL-STD-750 method 2026
- ★ Polarity: Color band denotes cathode end
- ★ Mounting position: Any

**Zener Voltage 2.4 to 56 V**  
**Power Dissipation 500 mW**

### SOD-123FL



Dimensions in inches and (millimeters)

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified.

PARAMETER	SYMBOL	VALUE	UNIT
Power Dissipation	$P_D$	500	mW
Maximum Instantaneous Forward Voltage @ $I_F=10\text{mA}$	$V_F$	0.9	V
Operating Junction Temperature Range	$T_J$	-65 to +150	°C
Storage Temperature Range	$T_{STG}$	-65 to +150	°C

# MMSZ5221B THRU MMSZ5263B

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

Part Number	Device Marking Code	Nominal Zener Voltage $V_Z@I_{ZT}$			Maximum Zener Impedance			Maximum Reverse Leakage Current $I_R@V_R$	
		Min(V)	Max(V)	$I_{ZT}$ (mA)	$Z_{ZT}@I_{ZT}$ ( $\Omega$ )	$Z_{ZK}@I_{ZK}$ ( $\Omega$ )	$I_{ZK}$ (mA)	$I_R$ ( $\mu\text{A}$ )	$V_R$ (V)
MMSZ5221B	Z2V4	2.28	2.52	20	30	1200	0.25	100	1
MMSZ5222B	Z2V5	2.38	2.63	20	30	1250	0.25	100	1
MMSZ5223B	Z2V7	2.57	2.84	20	30	1300	0.25	75	1
MMSZ5224B	Z2V8	2.66	2.94	20	30	1400	0.25	75	1
MMSZ5225B	Z3V0	2.85	3.15	20	29	1600	0.25	50	1
MMSZ5226B	Z3V3	3.14	3.47	20	28	1600	0.25	25	1
MMSZ5227B	Z3V6	3.42	3.78	20	24	1700	0.25	15	1
MMSZ5228B	Z3V9	3.71	4.10	20	23	1900	0.25	10	1
MMSZ5229B	Z4V3	4.09	4.52	20	22	2000	0.25	5	1
MMSZ5230B	Z4V7	4.47	4.94	20	19	1900	0.25	5	2
MMSZ5231B	Z5V1	4.85	5.36	20	17	1600	0.25	5	2
MMSZ5232B	Z5V6	5.32	5.88	20	11	1600	0.25	5	3
MMSZ5233B	Z6V0	5.70	6.30	20	7	1600	0.25	5	3.5
MMSZ5234B	Z6V2	5.89	6.51	20	7	1000	0.25	5	4
MMSZ5235B	Z6V8	6.46	7.14	20	5	750	0.25	3	5
MMSZ5236B	Z7V5	7.13	7.88	20	6	500	0.25	3	6
MMSZ5237B	Z8V2	7.79	8.61	20	8	500	0.25	3	6.5
MMSZ5238B	Z8V7	8.27	9.14	20	8	600	0.25	3	6.5
MMSZ5239B	Z9V1	8.65	9.56	20	10	600	0.25	3	7
MMSZ5240B	Z10V	9.50	10.50	20	17	600	0.25	3	8
MMSZ5241B	Z11V	10.45	11.55	20	22	600	0.25	2	8.4
MMSZ5242B	Z12V	11.40	12.60	20	30	600	0.25	1	9.1
MMSZ5243B	Z13V	12.35	13.65	9.5	13	600	0.25	0.5	9.9
MMSZ5244B	Z14V	13.30	14.70	9.0	15	600	0.25	0.1	10
MMSZ5245B	Z15V	14.25	15.75	8.5	16	600	0.25	0.1	11
MMSZ5246B	Z16V	15.20	16.80	7.8	17	600	0.25	0.1	12
MMSZ5247B	Z17V	16.15	17.85	7.4	19	600	0.25	0.1	13
MMSZ5248B	Z18V	17.10	18.90	7.0	21	600	0.25	0.1	14
MMSZ5249B	Z19V	18.05	19.95	6.6	23	600	0.25	0.1	14
MMSZ5250B	Z20V	19.00	21.00	6.2	25	600	0.25	0.1	15
MMSZ5251B	Z22V	20.90	23.10	5.6	29	600	0.25	0.1	17
MMSZ5252B	Z24V	22.80	25.20	5.2	33	600	0.25	0.1	18
MMSZ5253B	Z25V	23.75	26.25	5.0	35	600	0.25	0.1	19
MMSZ5254B	Z27V	25.65	28.35	4.6	41	600	0.25	0.1	21
MMSZ5255B	Z28V	26.60	29.40	4.5	44	600	0.25	0.1	21
MMSZ5256B	Z30V	28.50	31.50	4.2	49	600	0.25	0.1	23
MMSZ5257B	Z33V	31.35	34.65	3.8	58	700	0.25	0.1	25
MMSZ5258B	Z36V	34.20	37.80	3.4	70	700	0.25	0.1	27
MMSZ5259B	Z39V	37.05	40.95	3.2	80	800	0.25	0.1	30
MMSZ5260B	Z43V	40.85	45.15	3.0	93	900	0.25	0.1	33
MMSZ5261B	Z47V	44.65	49.35	2.7	105	1000	0.25	0.1	36
MMSZ5262B	Z51V	48.45	53.55	2.5	125	1100	0.25	0.1	39
MMSZ5263B	Z56V	53.20	58.80	2.2	150	1300	0.25	0.1	43

NOTES: (1)The Zener Voltage ( $V_Z$ ) is tested under pulse condition of 10ms.

(2)The device numbers listed have a standard tolerance on the nominal zener voltage of  $\pm 5\%$ .

(3)The zener impedance is derived from the 60-cycle ac voltage, which results when an ac current having an rms value equal to 10% of the dc zener current ( $I_{ZT}$  or  $I_{ZK}$ ) is superimposed to  $I_{ZT}$  or  $I_{ZK}$ .

# RATINGS AND CHARACTERISTIC CURVES MMSZ5221B THRU MMSZ5263B

FIG.1 - POWER DERATING CURVE

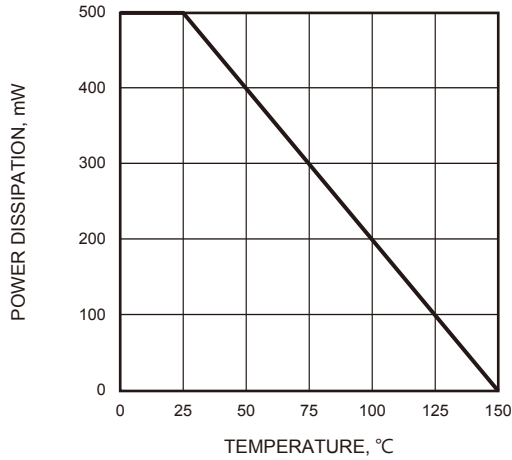


FIG.2 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

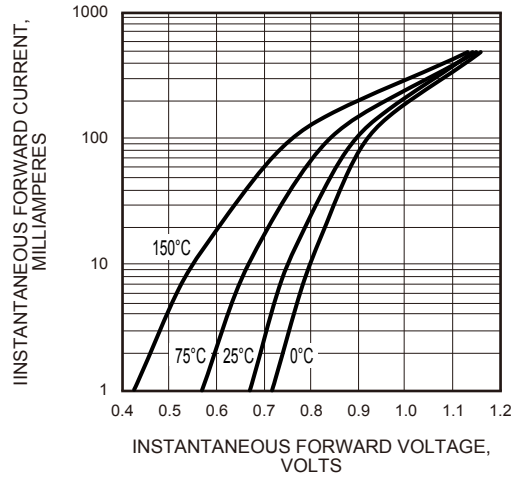


FIG.3 - EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

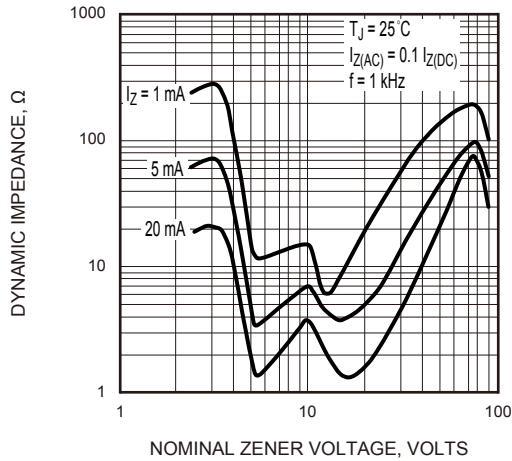


FIG.4 - TYPICAL CAPACITANCE

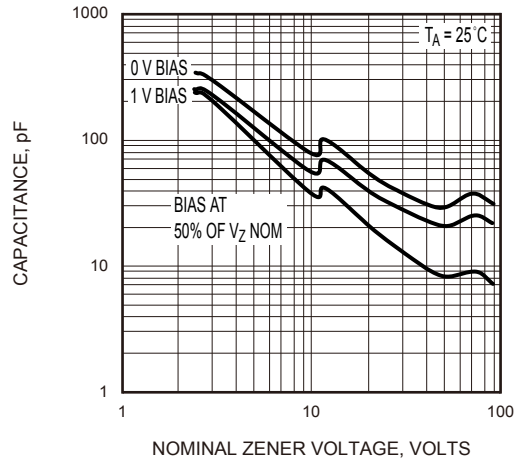


FIG.5 - TYPICAL LEAKAGE CURRENT

