

## DATA SHEET

### MMSZ5221BS SERIES

SURFACE MOUNT ZENER DIODE

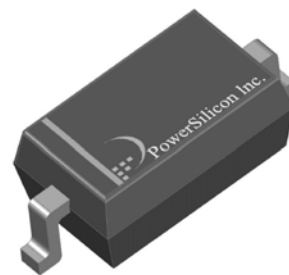
**VOLTAGE** 2.4~43 V **POWER** 200 mW

#### FEATURES

- PLANAR DIE CONSTRUCTION
- 200mW POWER DISSIPATION
- IDEALLY SUITED FOR AUTOMATED ASSEMBLY PROCESSES
- LEAD FREE AND HALOGEN-FREE

#### MECHANICAL DATA

- CASE: SOD-323, MOLDED PLASTIC
- TERMINALS: SOLDERABLE PER MIL-STD-202, METHOD 208
- POLARITY: SEE DIAGRAM BELOW
- APPROX. WEIGHT: 0.00436 GRAMS
- MOUNTING POSITION: ANY



CASE : SOD-323

#### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

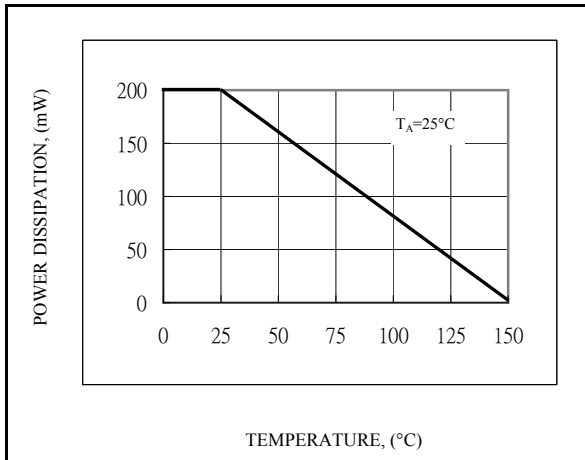
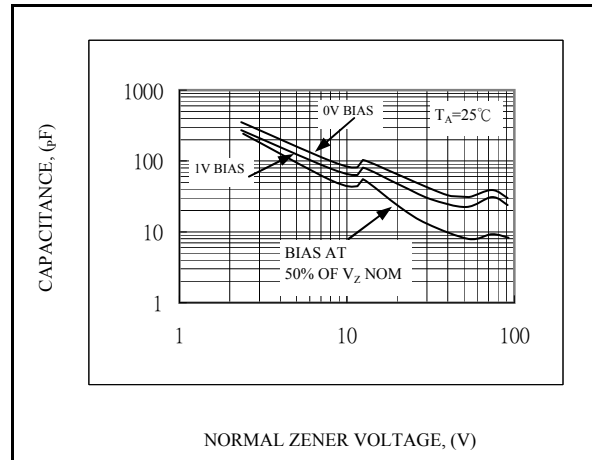
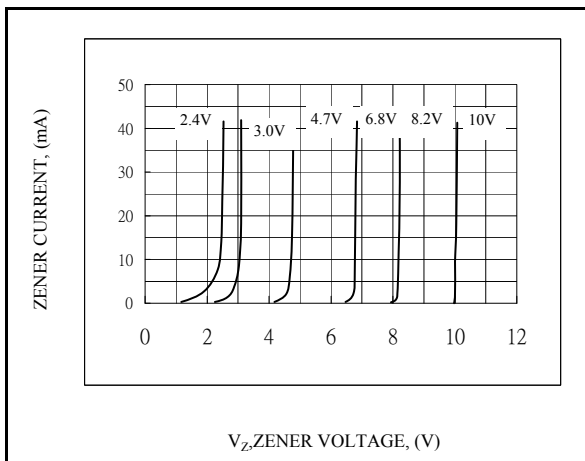
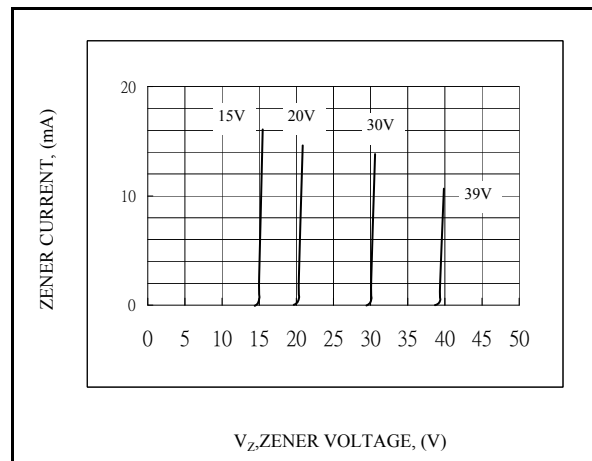
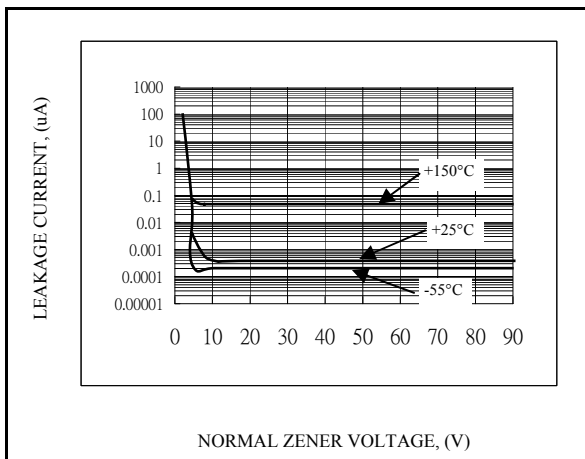
**RATINGS AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE SPECIFIED.**

PARAMETER	SYMBOL	VALUE	UNITS
MAXIMUM FORWARD VOLTAGE AT $I_F=10\text{mA}$	$V_F$	0.9	V
MAXIMUM POWER DISSIPATION AT 25°C (NOTE.1)	$P_D$	200	mW
OPERATING JUNCTION TEMPERATURE RANGE	$T_J$	-65 to +150	°C
STORAGE TEMPERATURE RANGE	$T_{STG}$	-65 to +150	°C
THERMAL RESISTANCE JUNCTION TO AMBIENT AIR	$R_{\theta JA}$	625	°C/W

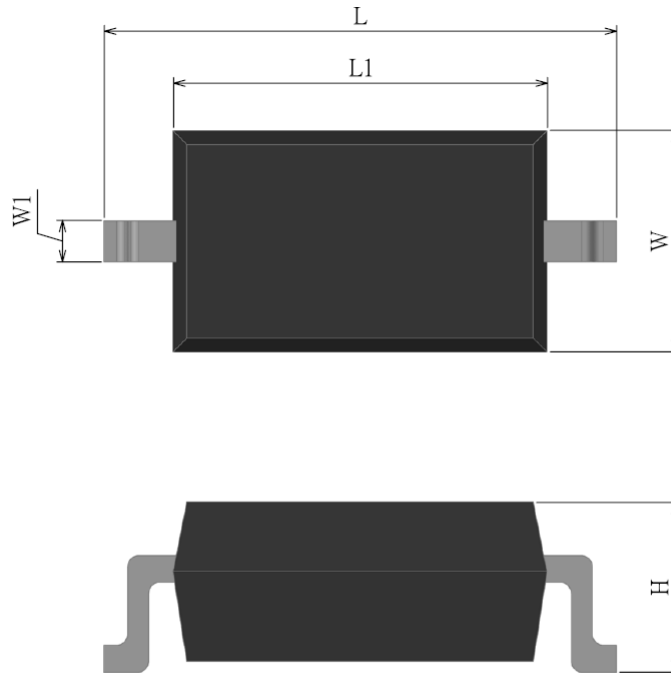
**NOTE:**

1. VALID PROVIDED THAT DEVICE TERMINALS ARE KEPT AT AMBIENT TEMPERATURE
2. TESTED WITH PULSES,  $T_p \leq 1.0\text{ms}$

Part Number	Nominal Zener Voltage			Max. Zener Impedance				Max Reverse Leakage Current	
	$V_Z @ I_{ZT}$			$Z_{ZT} @ I_{ZT}$		$Z_{ZK} @ I_{ZK}$		$I_R @ V_R$	
	Nom. V	Min. V	Max. V	$\Omega$	mA	$\Omega$	mA	$\mu A$	V
<b>200 mWatts Zener Diodes</b>									
MMSZ5221BS	2.4	2.28	2.52	30	20	1200	0.25	100	1
MMSZ5223BS	2.7	2.57	2.84	30	20	1300	0.25	75	1
MMSZ5225BS	3	2.85	3.15	30	20	1600	0.25	50	1
MMSZ5226BS	3.3	3.14	3.47	28	20	1600	0.25	25	1
MMSZ5227BS	3.6	3.42	3.78	24	20	1700	0.25	15	1
MMSZ5228BS	3.9	3.71	4.10	23	20	1900	0.25	10	1
MMSZ5229BS	4.3	4.09	4.52	22	20	2000	0.25	5.0	1
MMSZ5230BS	4.7	4.47	4.94	19	20	1900	0.25	5.0	2
MMSZ5231BS	5.1	4.85	5.36	17	20	1600	0.25	5.0	2
MMSZ5232BS	5.6	5.32	5.88	11	20	1600	0.25	5.0	3
MMSZ5233BS	6.0	5.70	6.30	7	20	1600	0.25	5.0	3.5
MMSZ5234BS	6.2	5.89	6.51	7	20	1000	0.25	5.0	4
MMSZ5235BS	6.8	6.46	7.14	5	20	750	0.25	3.0	5
MMSZ5236BS	7.5	7.13	7.88	6	20	500	0.25	3.0	6
MMSZ5237BS	8.2	7.79	8.61	8	20	500	0.25	3.0	6.5
MMSZ5238BS	8.7	8.27	9.14	8	20	600	0.25	3.0	6.5
MMSZ5239BS	9.1	8.65	9.56	10	20	600	0.25	3.0	7
MMSZ5240BS	10	9.50	10.50	17	20	600	0.25	3.0	8
MMSZ5241BS	11	10.45	11.55	22	20	600	0.25	2.0	8.4
MMSZ5242BS	12	11.40	12.60	30	20	600	0.25	1.0	9.1
MMSZ5243BS	13	12.35	13.65	13	9.5	600	0.25	0.5	9.9
MMSZ5245BS	15	14.25	15.75	16	8.5	600	0.25	0.1	11
MMSZ5246BS	16	15.20	16.80	17	7.8	600	0.25	0.1	12
MMSZ5248BS	18	17.10	18.90	21	7.0	600	0.25	0.1	14
MMSZ5250BS	20	19.00	21.00	25	6.2	600	0.25	0.1	15
MMSZ5251BS	22	20.90	23.10	29	5.6	600	0.25	0.1	17
MMSZ5252BS	24	22.80	25.20	33	5.2	600	0.25	0.1	18
MMSZ5254BS	27	25.65	28.35	41	5.0	600	0.25	0.1	21
MMSZ5255BS	28	26.60	29.40	44	4.5	600	0.25	0.1	21
MMSZ5256BS	30	28.50	31.50	49	4.2	600	0.25	0.1	23
MMSZ5257BS	33	31.35	34.65	58	3.8	700	0.25	0.1	25
MMSZ5258BS	36	34.20	37.80	70	3.4	700	0.25	0.1	27
MMSZ5259BS	39	37.05	40.95	80	3.2	800	0.25	0.1	30
MMSZ5260BS	43	40.85	45.15	93	3.0	900	0.25	0.1	33


**Fig.1-STEADY STATE POWER DERATING**

**Fig.2-TYPICAL CAPACITANCE**

**Fig.3- $V_Z=2.4$  THRU 10 VOLTS**

**Fig.4- $V_Z=15$  THRU 39 VOLTS**

**Fig.5-TYPICAL LEAKAGE CURRENT**

## SOD-323 DIMENSION



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
L	2.50	2.70	0.098	0.106
L1	1.60	1.80	0.063	0.071
W	1.20	1.40	0.047	0.055
W1	0.25	0.35	0.010	0.014
H	0.80	1.00	0.031	0.039