MMSZ5221B thru MMSZ5259B

SURFACE MOUNT SILICON ZENER DIODES

VOLTAGE 2.4 to 39 Volts **POWER** 500 mWatts

FEATURES

- Planar Die construction
- 500mW Power Dissipation
- Zener Voltages from 2.4V - 39V
- Ideally Suited for Automated Assembly Processes

SOD-123

MECHANICAL DATA

- Case: SOD-123, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram Below
- Approx. Weight: 0.008 grams
- Mounting Position: Any

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Value	Units
Power Dissipation (Notes A) at 75°C	P_D	500	mW
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method) (Notes B)	I_{FSM}	4.0	Amps
Operating Junction and StorageTemperature Range	T_J	-55 to +150	°C

NOTES:

A. Mounted on 5.0mm²(.013mm thick) land areas.

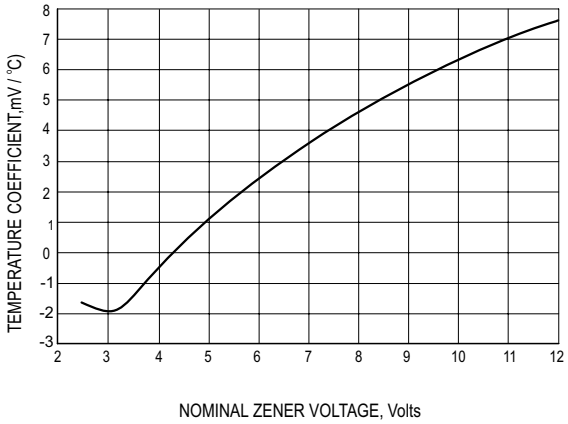
B. Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted) V_F=1.2V max, I_F=100mA for all types.

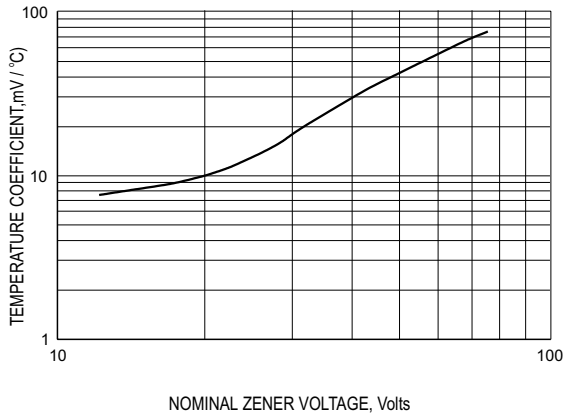
Part Number	Nominal Zener Voltage			Max. Zener Impedance				Max Reverse Leakage Current		Max. Zener Current	Package
	V_Z @ I_{ZT}			Z_{ZT} @ I_{ZT}		Z_{ZK} @ I_{ZK}		I_R @ V_R		I_{ZM}@Ta	
	Nom. V	Min. V	Max. V	Ω	mA	Ω	mA	nA	V	mA	
500 mWatts Zener Diodes											
MMSZ5221B	2.4	2.28	2.52	30	20	1200	0.25	100	1.0	188	SOD-123
MMSZ5222B	2.5	2.38	2.63	30	20	1250	0.25	100	1.0	180	SOD-123
MMSZ5223B	2.7	2.57	2.84	30	20	1300	0.25	75	1.0	167	SOD-123
MMSZ5225B	3	2.85	3.15	30	20	1600	0.25	50	1.0	150	SOD-123
MMSZ5226B	3.3	3.14	3.47	28	20	1600	0.25	25	1.0	138	SOD-123
MMSZ5227B	3.6	3.42	3.78	24	20	1700	0.25	15	1.0	126	SOD-123
MMSZ5228B	3.9	3.71	4.1	23	20	1900	0.25	10	1.0	115	SOD-123
MMSZ5229B	4.3	4.09	4.52	22	20	2000	0.25	5.0	1.0	106	SOD-123
MMSZ5230B	4.7	4.47	4.94	19	20	1900	0.25	5.0	2.0	97	SOD-123
MMSZ5231B	5.1	4.85	5.36	17	20	1600	0.25	5.0	2.0	89	SOD-123
MMSZ5232B	5.6	5.32	5.88	11	20	1600	0.25	5.0	3.0	81	SOD-123
MMSZ5234B	6.2	5.89	6.51	7.0	20	1000	0.25	5.0	4.0	73	SOD-123
MMSZ5235B	6.8	6.46	7.14	5.0	20	750	0.25	3.0	5.0	67	SOD-123
MMSZ5236B	7.5	7.13	7.88	6.0	20	500	0.25	3.0	6.0	61	SOD-123
MMSZ5237B	8.2	7.79	8.61	8.0	20	500	0.25	3.0	6.0	55	SOD-123
MMSZ5239B	9.1	8.65	9.56	10	20	600	0.25	3.0	6.5	50	SOD-123
MMSZ5240B	10	9.5	10.5	17	20	600	0.25	3.0	8	45	SOD-123
MMSZ5241B	11	10.45	11.55	22	20	600	0.25	3.0	8.4	41	SOD-123
MMSZ5242B	12	11.4	12.6	30	20	600	0.25	2.0	9.1	38	SOD-123
MMSZ5243B	13	12.35	13.65	13	9.5	600	0.25	1.0	9.9	35	SOD-123
MMSZ5245B	15	14.25	15.75	16	8.5	600	0.25	0.5	11	30	SOD-123
MMSZ5246B	16	15.2	16.8	17	7.8	600	0.25	0.1	12	28	SOD-123
MMSZ5248B	18	17.1	18.9	21	7	600	0.25	0.1	14	25	SOD-123
MMSZ5250B	20	19	21	25	6.2	600	0.25	0.1	15	23	SOD-123
MMSZ5251B	22	20.9	23.1	29	5.6	600	0.25	0.1	17	21	SOD-123
MMSZ5252B	24	22.8	25.2	33	5.2	600	0.25	0.1	18	19.1	SOD-123
MMSZ5254B	27	25.65	28.35	41	5	600	0.25	0.1	21	16.8	SOD-123
MMSZ5255B	28	26.6	29.4	44	4.5	600	0.25	0.1	21	16.2	SOD-123
MMSZ5256B	30	28.5	31.5	49	4.2	600	0.25	0.1	23	15.1	SOD-123
MMSZ5257B	33	31.35	34.65	58	3.8	700	0.25	0.1	25	13.8	SOD-123
MMSZ5258B	36	34.2	37.8	70	3.4	700	0.25	0.1	27	12.6	SOD-123
MMSZ5259B	39	37.05	40.95	80	3.2	800	0.25	0.1	30	11.6	SOD-123

NOTE:

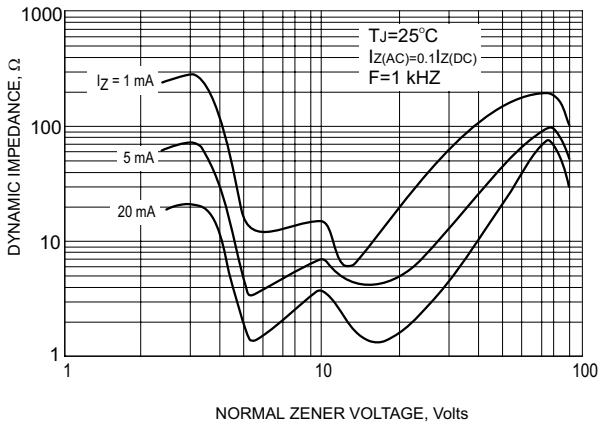
1. Tolerance and Type Number Designation. The type numbers listed have a standard tolerance on the nominal zener voltage of ±5%.
2. Specials Available Include:
   A. Nominal zener voltages between the voltages shown and tighter voltage tolerances.
   B. Matched sets.
3. Zener Voltage (V_Z) Measurement. Guarantees the zener voltage when measured at 90 seconds while maintaining the lead temperature (T_L) at 30°C, from the diode body.
4. Zener Impedance (Z_Z) Derivation. 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 on I_{ZT} or I_{ZK}.
5. Surge Current (I_R) Non-Repetitive. The rating listed in the electrical characteristics table is maximum peak, non-repetitive, reverse surge current of 1/2 square wave or equivalent sine wave pulse of 1/120 second duration superimposed on the test current, I_{ZT}, per JEDEC registration; however, actual device capability is as described in Figure 5.



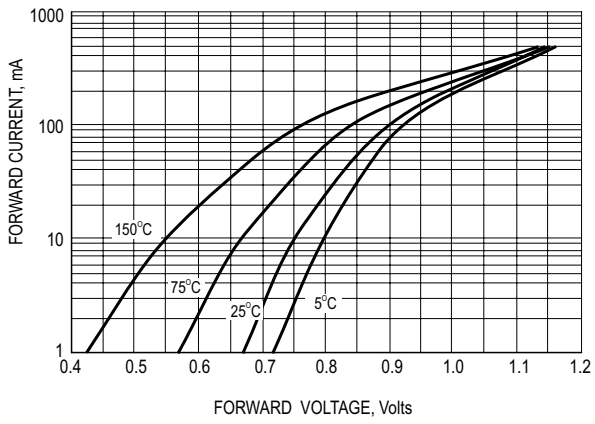
TYPICAL REVERSE CURRENT



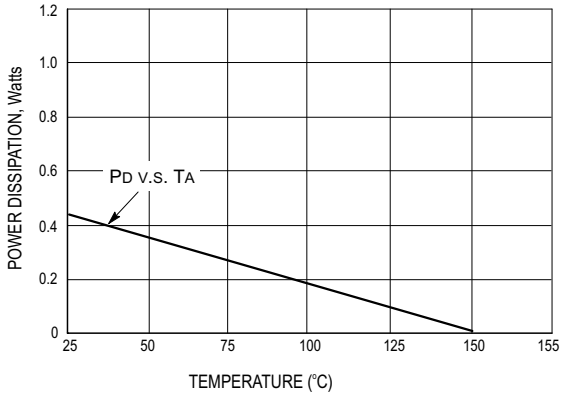
STEADY STATE POWER DERATING



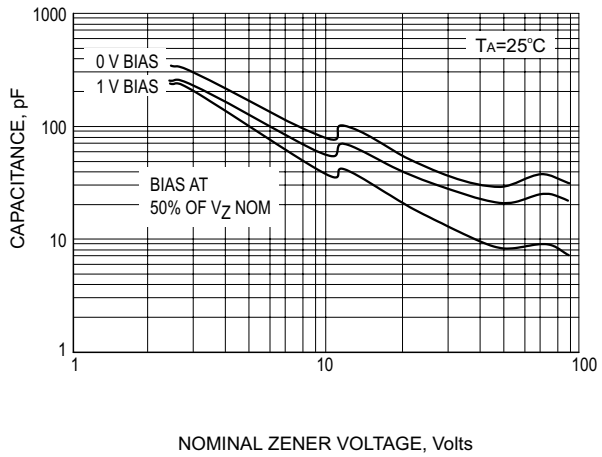
EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE



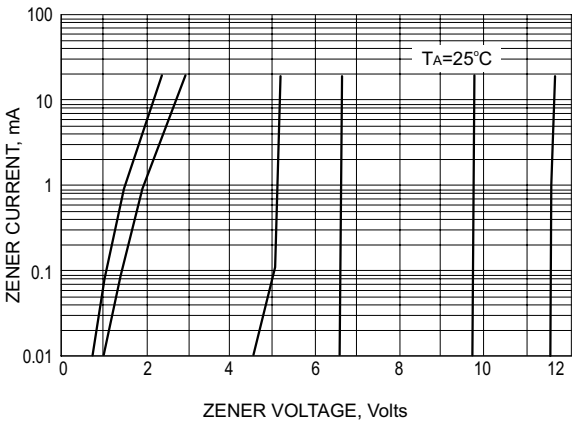
TYPICAL FORWARD VOLTAGE



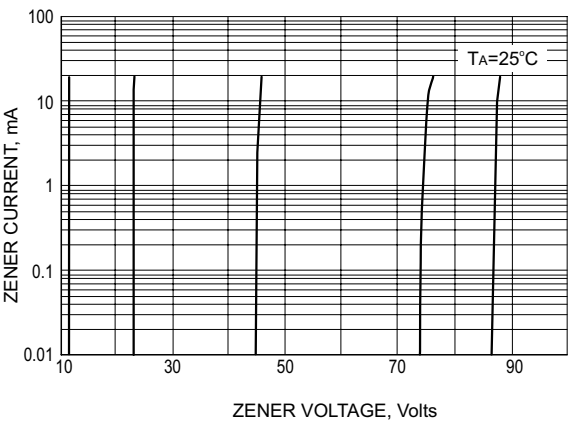
STEADY STATE POWER DERATING



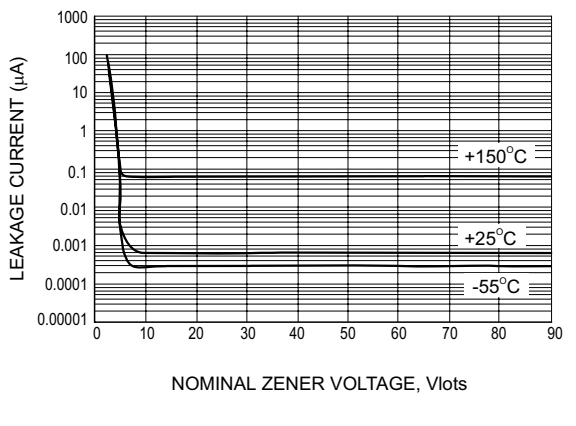
TYPICAL CAPACITANCE



ZENER VOLTAGE V.S. ZENER CURRENT

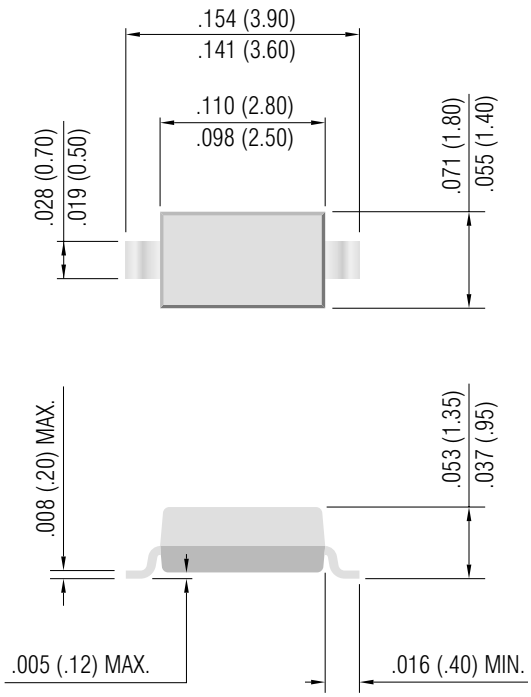


ZENER VOLTAGE V.S. ZENER CURRENT



TYPICAL LEAKGE CURRENT

SOD-123



Dimensions in inches and (millimeters)

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PanJit Internatioal Inc.

TEL:886-7-6213121 Fax:886-7-6213129 Internet: http://www.panjit.com.tw email: sales@panjit.com.tw