MMSZ5221BS thru MMSZ5259BS

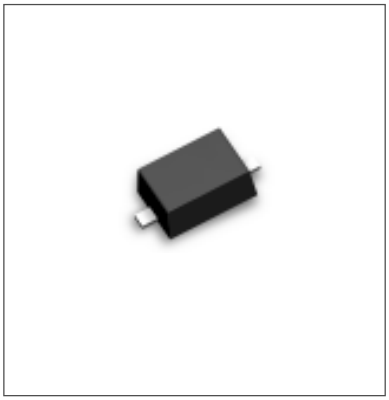
PANJIT SEMI CONDUCTOR

SURFACE MOUNT SILICON ZENER DIODES

VOLTAGE 2.4 - 39 Volts **POWER** 200 mWatts **PACKAGE** SOD-323

FEATURES

- Planar Die construction
- 200mW Power Dissipation
- Zener Voltages from 2.4V - 39V
- Ideally Suited for Automated Assembly Processes



MECHANICAL DATA

Case: SOD-323, Plastic

Terminals: Solderable per MIL-STD-202, Method 208

Approx. Weight: 0.008 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Value	Units
Power Dissipation (Notes A) at 25°C	P_D	200	mW
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method) (Notes B)	I_{FSM}	2.0	Amps
Operating Junction and StorageTemperature Range	T_J	-55 to +150	°C

NOTES:

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

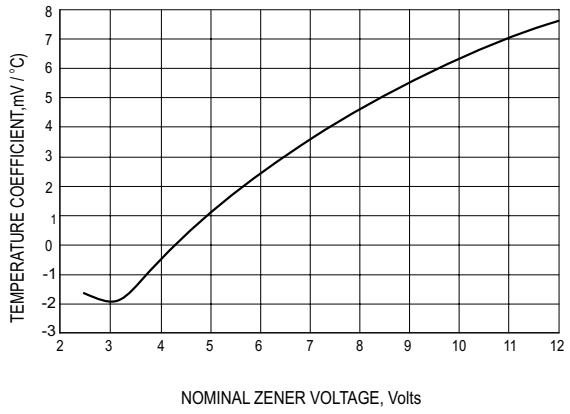
B. Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

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

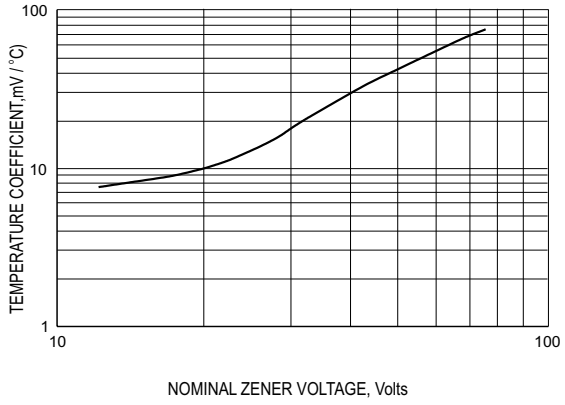
Part Number	Nominal Zener Voltage			Max. Zener Impedance				Max Reverse Leakage Current		Package
	V_Z @ I_{ZT}			Z_{ZT} @ I_{ZT}		Z_{ZK} @ I_{ZK}		I_R @ V_R		
	Nom. V	Min. V	Max. V	Ω	mA	Ω	mA	µA	V	
200 mWatts Zener Diodes										
MMSZ5221BS	2.4	2.28	2.52	30	20	1200	0.25	100	1	SOD-323
MMSZ5222BS	2.5	2.38	2.63	30	20	1250	0.25	100	1	SOD-323
MMSZ5223BS	2.7	2.57	2.84	30	20	1300	0.25	75	1	SOD-323
MMSZ5225BS	3	2.85	3.15	30	20	1600	0.25	50	1	SOD-323
MMSZ5226BS	3.3	3.14	3.47	28	20	1600	0.25	25	1	SOD-323
MMSZ5227BS	3.6	3.42	3.78	24	20	1700	0.25	15	1	SOD-323
MMSZ5228BS	3.9	3.71	4.1	23	20	1900	0.25	10	1	SOD-323
MMSZ5229BS	4.3	4.09	4.52	22	20	2000	0.25	5	1	SOD-323
MMSZ5230BS	4.7	4.47	4.94	19	20	1900	0.25	5	2	SOD-323
MMSZ5231BS	5.1	4.85	5.36	17	20	1600	0.25	5	2	SOD-323
MMSZ5232BS	5.6	5.32	5.88	11	20	1600	0.25	5	3	SOD-323
MMSZ5234BS	6.2	5.89	6.51	7	20	1000	0.25	5	4	SOD-323
MMSZ5235BS	6.8	6.46	7.14	5	20	750	0.25	3	5	SOD-323
MMSZ5236BS	7.5	7.13	7.88	6	20	500	0.25	3	6	SOD-323
MMSZ5237BS	8.2	7.79	8.61	8	20	500	0.25	3	6	SOD-323
MMSZ5239BS	9.1	8.65	9.56	10	20	600	0.25	3	6.5	SOD-323
MMSZ5240BS	10	9.5	10.5	17	20	600	0.25	3	8	SOD-323
MMSZ5241BS	11	10.45	11.55	22	20	600	0.25	3	8.4	SOD-323
MMSZ5242BS	12	11.4	12.6	30	20	600	0.25	2	9.1	SOD-323
MMSZ5243BS	13	12.35	13.65	13	9.5	600	0.25	1	9.9	SOD-323
MMSZ5245BS	15	14.25	15.75	16	8.5	600	0.25	0.5	11	SOD-323
MMSZ5246BS	16	15.2	16.8	17	7.8	600	0.25	0.1	12	SOD-323
MMSZ5248BS	18	17.1	18.9	21	7	600	0.25	0.1	14	SOD-323
MMSZ5250BS	20	19	21	25	6.2	600	0.25	0.1	15	SOD-323
MMSZ5251BS	22	20.9	23.1	29	5.6	600	0.25	0.1	17	SOD-323
MMSZ5252BS	24	22.8	25.2	33	5.2	600	0.25	0.1	18	SOD-323
MMSZ5254BS	27	25.65	28.35	41	5	600	0.25	0.1	21	SOD-323
MMSZ5255BS	28	26.6	29.4	44	4.5	600	0.25	0.1	21	SOD-323
MMSZ5256BS	30	28.5	31.5	49	4.2	600	0.25	0.1	23	SOD-323
MMSZ5257BS	33	31.35	34.65	58	3.8	700	0.25	0.1	25	SOD-323
MMSZ5258BS	36	34.2	37.8	70	3.4	700	0.25	0.1	27	SOD-323
MMSZ5259BS	39	37.05	40.95	80	3.2	800	0.25	0.1	30	SOD-323

NOTE:

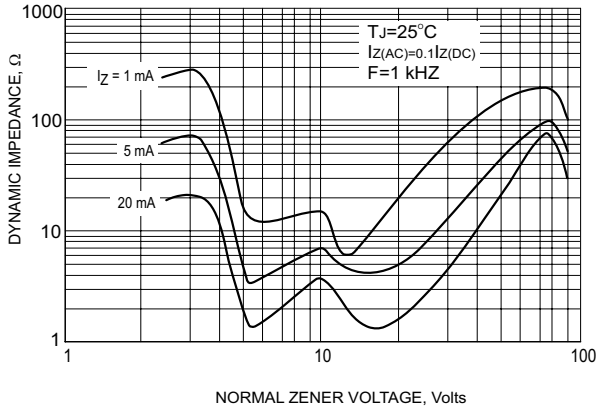
1. Tolerance and Type Number Designation. The type numbers listed have a standard tolerance on the nominal zener voltage of ±5%.
2. Specials Available Include:
   A. Nominal zener voltages between the voltages shown and tighter voltage tolerances.
   B. Matched sets.
3. Zener Voltage (V_Z) Measurement. 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.



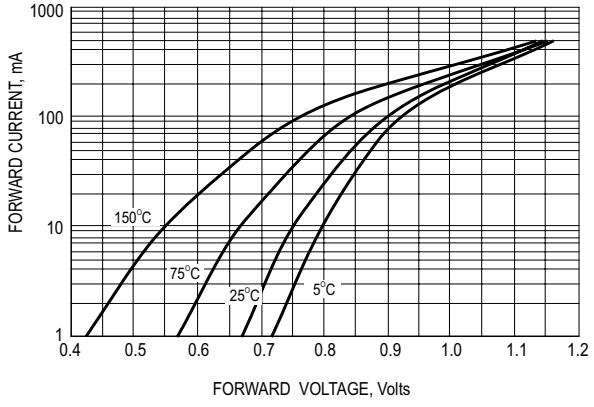
TYPICAL REVERSE CURRENT



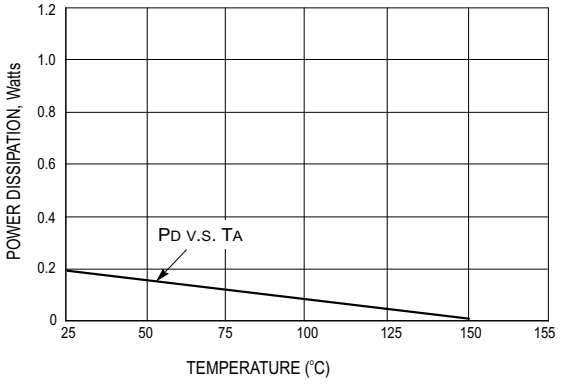
STEADY STATE POWER DERATING



EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE



TYPICAL FORWARD VOLTAGE



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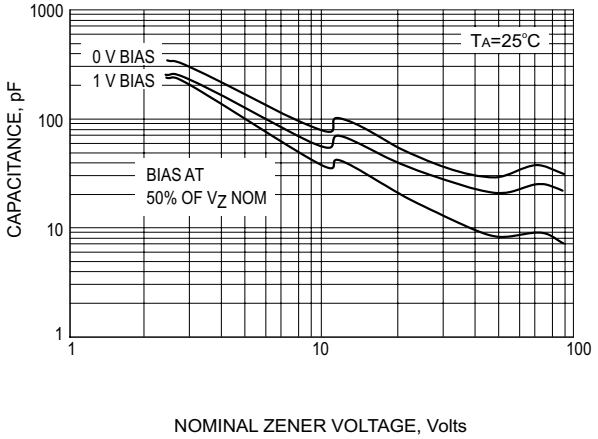
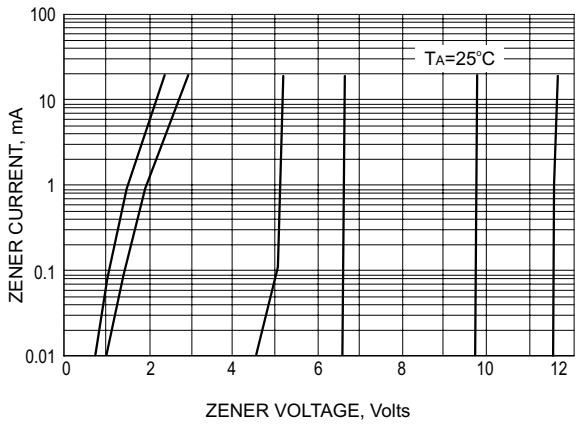
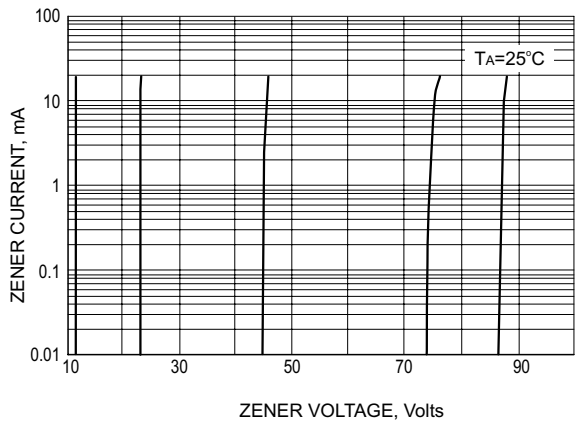


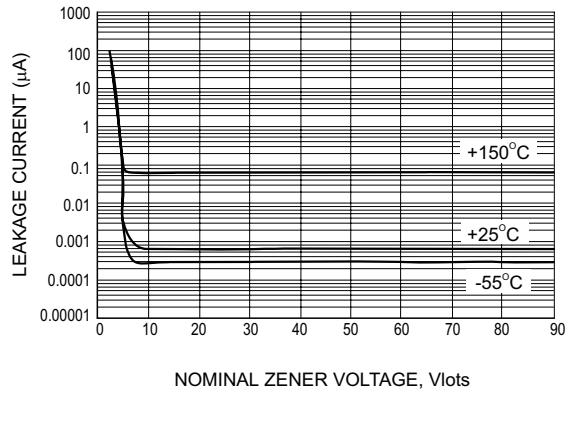
TYPICAL CAPACITANCE



ZENER VOLTAGE V.S. ZENER CURRENT

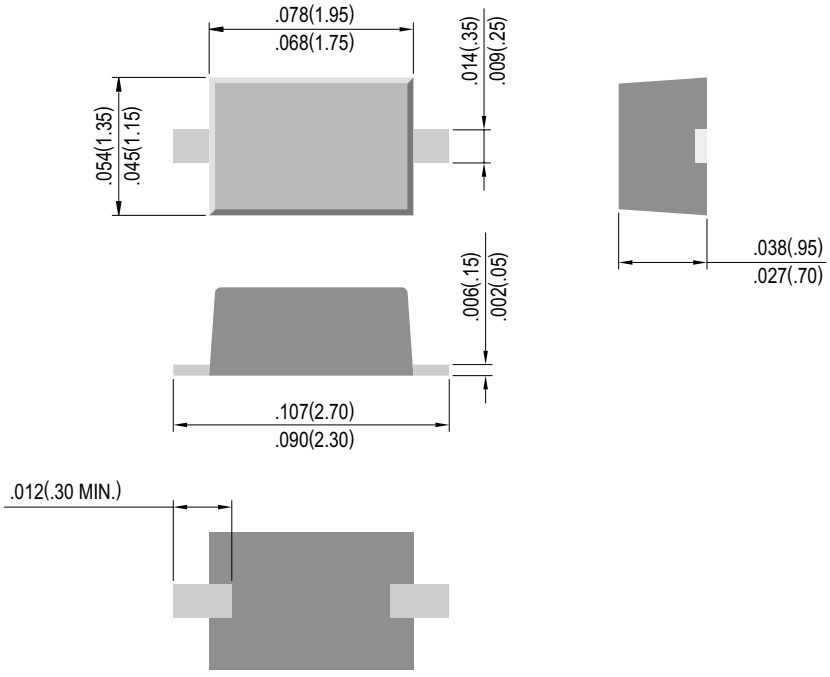


ZENER VOLTAGE V.S. ZENER CURRENT



TYPICAL LEAKGE CURRENT

SOD-323



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