Micro Commercial Components
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MMSZ5221 THRU MMSZ5259

500 mW

Zener Diodes

2.4 to 39 Volts

Features

- Lead Free Finish/RoHS Compliant("P" Suffix designates RoHS Compliant. See ordering information)
- Planar Die construction
- Zener Voltages from 2.4V - 39V and 500mW Power Dissipation
- Ideally Suited for Automated Assembly Processes

Mechanical Data

- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0 and MSL Rating 1
- Approx. Weight: 0.009 grams
- Mounting Position: Any
- Storage & Operating Temperature: -55°C to +150°C

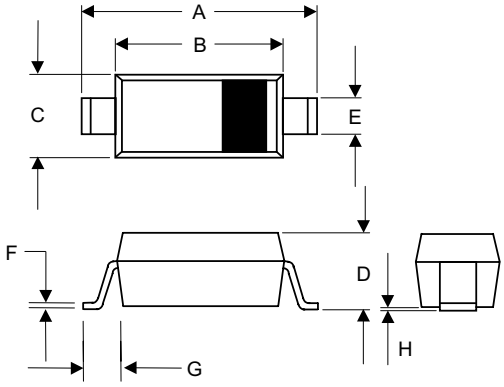
Maximum Ratings @ 25°C Unless Otherwise Specified

Forward Current	I_F	100	mA
Maximum Forward Voltage	V_F	1.2	V
Power Dissipation (Notes A)	$P_{(AV)}$	500	mWatt
Peak Forward Surge Current (Notes B)	I_{FSM}	4.0	Amps

NOTES:

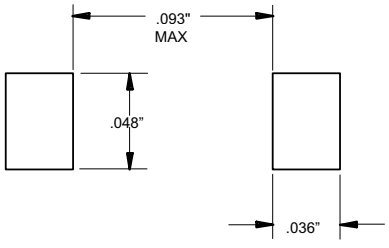
A. Mounted on 5.0mm2(.013mm thick) land areas.
B. Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

SOD123



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.141	.154	3.60	3.90	
B	.098	.110	2.50	2.80	
C	.055	.071	1.40	1.80	
D	.037	.053	0.95	1.35	
E	.019	.028	0.50	0.70	
F	---	.008	---	0.20	
G	.016	---	0.40	---	
H	---	.005	---	0.12	

SUGGESTED SOLDER PAD LAYOUT



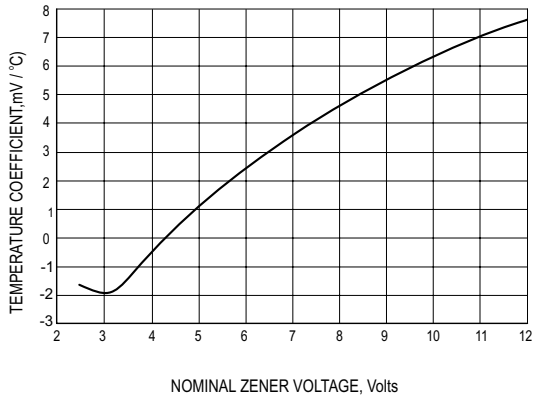
MMSZ5221 thru MMSZ5259

Electrical Characteristics @ 25°C Unless Otherwise Specified

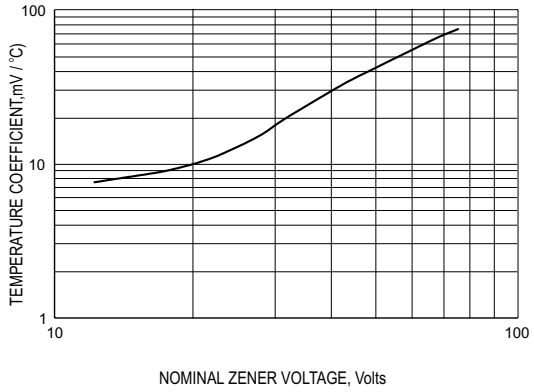
MCC PART NUMBER	Marking	NORMAL ZENER VOLTAGE Vz@ Izt	TEST CURRENT Izt	MAXIMUM ZENER IMPEDANCE Zzt @ Izt	Zzk @ Izk=0.25mA	MAXIMUM REVERSE LEAKAGE CURRENT Ir @ Vr		MAXIMUM ZENER VOLTAGE TEMP
		VOLTS	mA	OHMS	OHMS	uA	VOLTS	%/°C
MMSZ5221	C1	2.4	20	30	1200	100	1.0	-0.085
MMSZ5222	C2	2.5	20	30	1250	100	1.0	-0.085
MMSZ5223	C3	2.7	20	30	1300	75	1.0	-0.080
MMSZ5225	C5	3.0	20	29	1600	50	1.0	-0.075
MMSZ5226	G1/ D1	3.3	20	28	1600	25	1.0	-0.070
MMSZ5227	G2/ D2	3.6	20	24	1700	15	1.0	-0.065
MMSZ5228	G3/ D3	3.9	20	23	1900	10	1.0	-0.060
MMSZ5229	G4/ D4	4.3	20	22	2000	5.0	1.0	±0.055
MMSZ5230	G5/ D5	4.7	20	19	1900	5.0	2.0	±0.030
MMSZ5231	E1	5.1	20	17	1600	5.0	2.0	±0.030
MMSZ5232	E2	5.6	20	11	1600	5.0	3.0	+0.038
MMSZ5234	E4	6.2	20	7.0	1000	5.0	4.0	+0.045
MMSZ5235	E5	6.8	20	5.0	750	3.0	5.0	+0.050
MMSZ5236	F1	7.5	20	6.0	500	3.0	6.0	+0.058
MMSZ5237	F2	8.2	20	8.0	500	3.0	6.5	+0.062
MMSZ5239	F4	9.1	20	10	600	3.0	7.0	+0.068
MMSZ5240	F5	10	20	17	600	3.0	8.0	+0.075
MMSZ5241	H1	11	20	22	600	2.0	8.4	+0.076
MMSZ5242	H2	12	20	30	600	1.0	9.1	+0.077
MMSZ5243	H3	13	9.5	13	600	0.5	9.9	+0.079
MMSZ5245	H5	15	8.5	16	600	0.1	11	+0.082
MMSZ5246	J1	16	7.8	17	600	0.1	12	+0.083
MMSZ5248	J3	18	7.0	21	600	0.1	14	+0.085
MMSZ5250	J5	20	6.2	25	600	0.1	15	+0.086
MMSZ5251	K1	22	5.6	29	600	0.1	17	+0.087
MMSZ5252	K2	24	5.2	33	600	0.1	18	+0.088
MMSZ5254	K4	27	4.6	41	600	0.1	21	+0.090
MMSZ5255	K5	28	4.5	44	600	0.1	21	+0.091
MMSZ5256	M1	30	4.2	49	600	0.1	23	+0.091
MMSZ5257	M2	33	3.8	58	700	0.1	25	+0.092
MMSZ5258	M3	36	3.4	70	700	0.1	27	+0.093
MMSZ5259	M4	39	3.2	80	800	0.1	30	+0.094

NOTE:

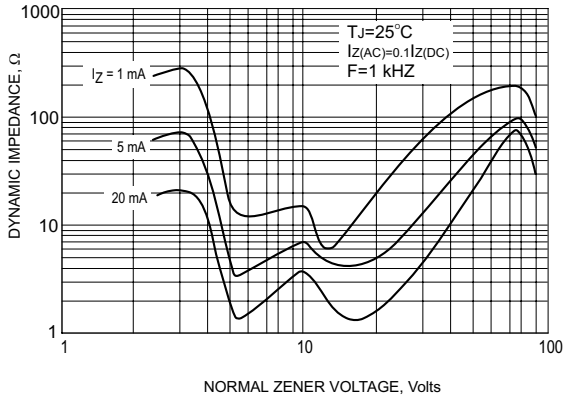
1. Standard Zener voltage tolerance is ±5% with a "B" suffix (e.g.: MMSZ5225B),suffix "C" is ± 2 % tolerance
2. Specials Available Include:
   A. Nominal zener voltages between the voltages shown and tighter voltage tolerances.
   B. Matched sets.
3. Zener Voltage (V_Z) Measurement. Guarantees the zener 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.



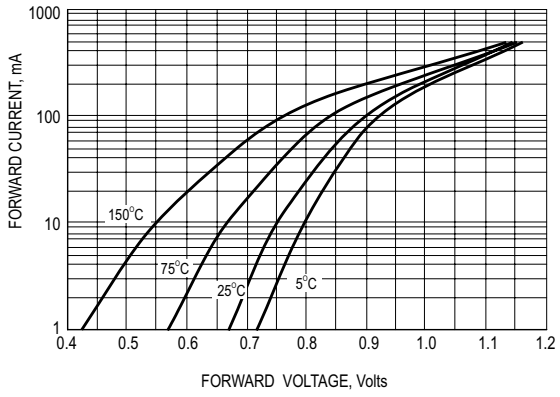
TYPICAL REVERSE CURRENT



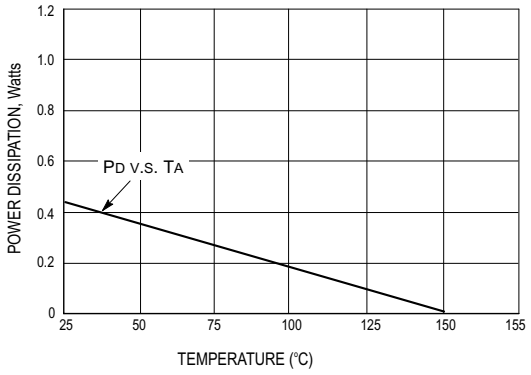
STEADY STATE POWER DERATING



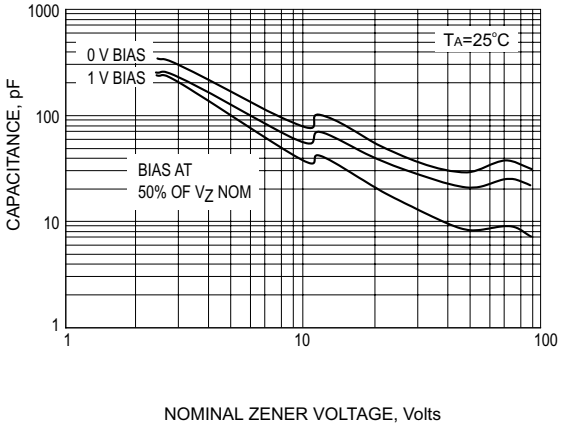
EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE



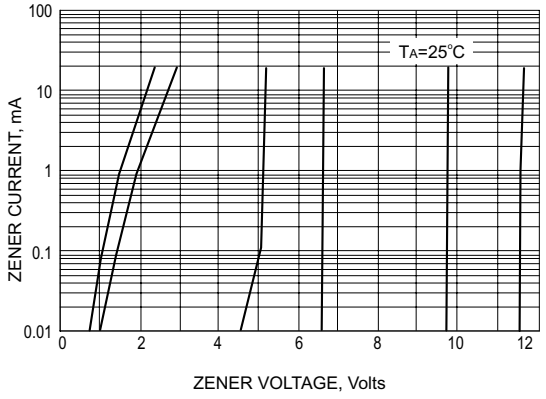
TYPICAL FORWARD VOLTAGE



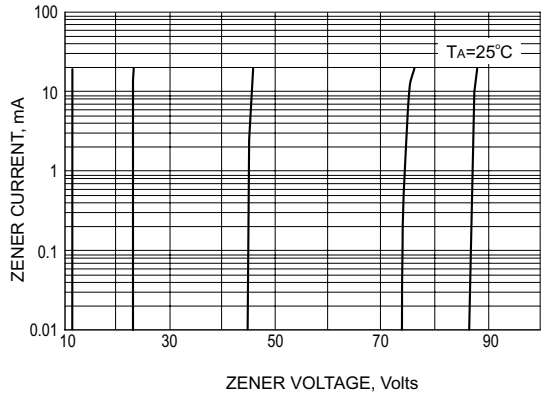
STEADY STATE POWER DERATING



TYPICAL CAPACITANCE



ZENER VOLTAGE V.S. ZENER CURRENT



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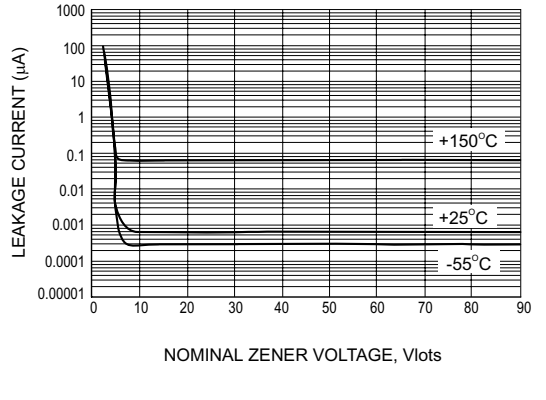

TYPICAL LEAKGE CURRENT

Ordering Information

Device	Packing
(Part Number)-TP	Tape&Reel;3Kpcs/Reel