Micro Commercial Components

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20736 Marilla Street Chatsworth
CA 91311
Phone:(818) 701-4933
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MMSZ5221B THRU MMSZ5267B

500 mW

Zener Diodes

2.4 to 75 Volts

Features

- Lead Free Finish/RoHS Compliant("P" Suffix designates RoHS Compliant. See ordering information)
- Planar Die construction
- Zener Voltages from 2.4V - 47V and 500mW Power Dissipation
- Ideally Suited for Automated Assembly Processes
- ESD Rating of 16kV per Human Body Model

Mechanical Data

- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Approx. Weight: 0.009 grams
- Mounting Position: Any
- Halogen free available upon request by adding suffix "-HF"
- Storage & Operating Temperature: -55°C to +150°C

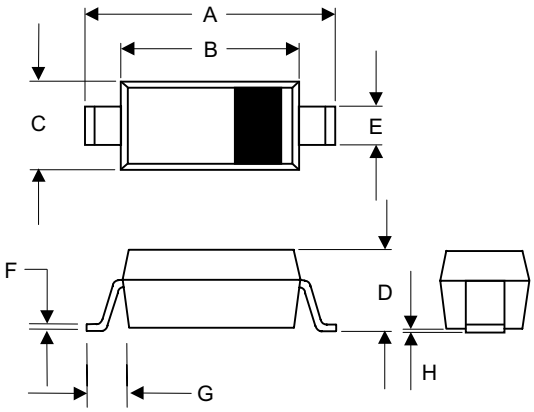
Maximum Ratings @ 25°C Unless Otherwise Specified

Maximum Forward Voltage @ IF=10mA	VF	0.9	V
Power Dissipation (Notes A)	P(AV)	500	mW
Thermal Resistance (Notes B)	R0JA	340	℃/W

NOTES:

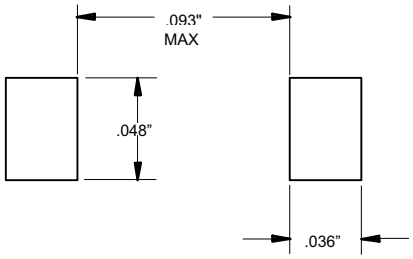
A. Mounted on 5.0mm2(.013mm thick) land areas.
B.On FR - 4 board with minimum recommended solder pad layout

SOD123



DIMENSIONS					
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



MMSZ5221B thru MMSZ5267B

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	µA	VOLTS	%/°C
MMSZ5221B	C1	2.4	20	30	1200	100	1.0	-0.085
MMSZ5222B	C2	2.5	20	30	1250	100	1.0	-0.085
MMSZ5223B	C3	2.7	20	30	1300	75	1.0	-0.080
MMSZ5225B	C5	3.0	20	29	1600	50	1.0	-0.075
MMSZ5226B	G1/ D1	3.3	20	28	1600	25	1.0	-0.070
MMSZ5227B	G2/ D2	3.6	20	24	1700	15	1.0	-0.065
MMSZ5228B	G3/ D3	3.9	20	23	1900	10	1.0	-0.060
MMSZ5229B	G4/ D4	4.3	20	22	2000	5.0	1.0	±0.055
MMSZ5230B	G5/ D5	4.7	20	19	1900	5.0	2.0	±0.030
MMSZ5231B	E1	5.1	20	17	1600	5.0	2.0	±0.030
MMSZ5232B	E2	5.6	20	11	1600	5.0	3.0	+0.038
MMSZ5233B	E3	6.0	20	7.0	1600	5.0	3.5	+0.040
MMSZ5234B	E4	6.2	20	7.0	1000	5.0	4.0	+0.045
MMSZ5235B	E5	6.8	20	5.0	750	3.0	5.0	+0.050
MMSZ5236B	F1	7.5	20	6.0	500	3.0	6.0	+0.058
MMSZ5237B	F2	8.2	20	8.0	500	3.0	6.5	+0.062
MMSZ5238B	F3	8.7	20	8.0	600	3.0	6.5	+0.065
MMSZ5239B	F4	9.1	20	10	600	3.0	7.0	+0.068
MMSZ5240B	F5	10	20	17	600	3.0	8.0	+0.075
MMSZ5241B	H1	11	20	22	600	2.0	8.4	+0.076
MMSZ5242B	H2	12	20	30	600	1.0	9.1	+0.077
MMSZ5243B	H3	13	9.5	13	600	0.5	9.9	+0.079
MMSZ5244B	H4	14	9.0	15	600	0.1	10.5	+0.081
MMSZ5245B	H5	15	8.5	16	600	0.1	11	+0.082
MMSZ5246B	J1	16	7.8	17	600	0.1	12	+0.083
MMSZ5248B	J3	18	7.0	21	600	0.1	14	+0.085
MMSZ5250B	J5	20	6.2	25	600	0.1	15	+0.086
MMSZ5251B	K1	22	5.6	29	600	0.1	17	+0.087
MMSZ5252B	K2	24	5.2	33	600	0.1	18	+0.088
MMSZ5254B	K4	27	4.6	41	600	0.1	21	+0.090
MMSZ5255B	K5	28	4.5	44	600	0.1	21	+0.091
MMSZ5256B	M1	30	4.2	49	600	0.1	23	+0.091
MMSZ5257B	M2	33	3.8	58	700	0.1	25	+0.092
MMSZ5258B	M3	36	3.4	70	700	0.1	27	+0.093
MMSZ5259B	M4	39	3.2	80	800	0.1	30	+0.094
MMSZ5260B	M5	43	3.0	93	900	0.1	33	+0.095
MMSZ5261B	N1	47	2.7	105	1000	0.1	36	+0.095
MMSZ5262B	N2	51	2.5	125	1100	0.1	39	+0.096
MMSZ5263B	M8	56	2.2	150	1300	0.1	43	+0.097
MMSZ5265B	N5	62	2.0	185	1400	0.1	47	+0.098
MMSZ5267B	P2	75	1.7	270	1700	0.1	56	+0.099

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.

MMSZ5221B thru MMSZ5267B

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	μA	VOLTS	%/°C
MMSZ5229C	2G4/D4	4.3	20	22	2000	5.0	1.0	±0.055
MMSZ5230C	2G5/D5	4.7	20	19	1900	5.0	2.0	±0.030
MMSZ5231C	2E1/E1	5.1	20	17	1600	5.0	2.0	±0.030
MMSZ5232C	2E2/E2	5.6	20	11	1600	5.0	3.0	+0.038
MMSZ5233C	2E3/E3	6.0	20	7.0	1600	5.0	3.5	+0.040
MMSZ5234C	2E4/E4	6.2	20	7.0	1000	5.0	4.0	+0.045
MMSZ5235C	2E5/E5	6.8	20	5.0	750	3.0	5.0	+0.050
MMSZ5236C	2F1/F1	7.5	20	6.0	500	3.0	6.0	+0.058
MMSZ5237C	2F2/F2	8.2	20	8.0	500	3.0	6.0	+0.062
MMSZ5238C	2F3/F3	8.7	20	8.0	600	3.0	6.5	+0.065
MMSZ5239C	2F4/F4	9.1	20	10	600	3.0	6.5	+0.068
MMSZ5240C	2F5/F5	10	20	17	600	3.0	8.0	+0.075
MMSZ5241C	2H1/H1	11	20	22	600	3.0	8.4	+0.076
MMSZ5242C	2H2/H2	12	20	30	600	2.0	9.1	+0.077
MMSZ5243C	2H3/H3	13	9.5	13	600	1.0	9.9	+0.079
MMSZ5244C	2H4/H4	14	9.0	15	600	0.5	10.5	+0.081
MMSZ5245C	2H5/H5	15	8.5	16	600	0.5	11	+0.082
MMSZ5246C	2J1/J1	16	7.8	17	600	0.1	12	+0.083
MMSZ5248C	2J3/J3	18	7.0	21	600	0.1	14	+0.085
MMSZ5250C	2J5/J5	20	6.2	25	600	0.1	15	+0.086
MMSZ5251C	2K1/K1	22	5.6	29	600	0.1	17	+0.087
MMSZ5252C	2K2/K2	24	5.2	33	600	0.1	18	+0.088
MMSZ5254C	2K4/K4	27	4.6	41	600	0.1	21	+0.090
MMSZ5255C	2K5/K5	28	4.5	44	600	0.1	21	+0.091
MMSZ5256C	2M1/M1	30	4.2	49	600	0.1	23	+0.091
MMSZ5257C	2M2/M2	33	3.8	58	700	0.1	25	+0.092
MMSZ5258C	2M3/M3	36	3.4	70	700	0.1	27	+0.093
MMSZ5259C	2M4/M4	39	3.2	80	800	0.1	30	+0.094
MMSZ5260C	M5	43	3.0	93	900	0.1	33	+0.095
MMSZ5261C	N1	47	2.7	105	1000	0.1	36	+0.095

NOTE:

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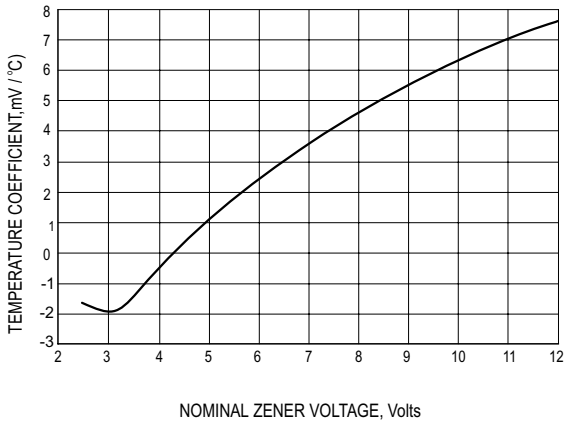
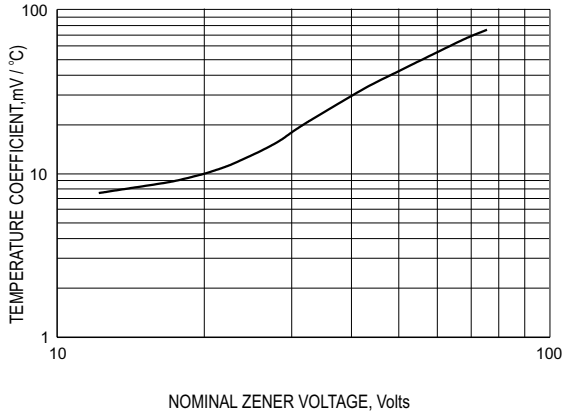


TEMPERATURE COEFFICIENTS



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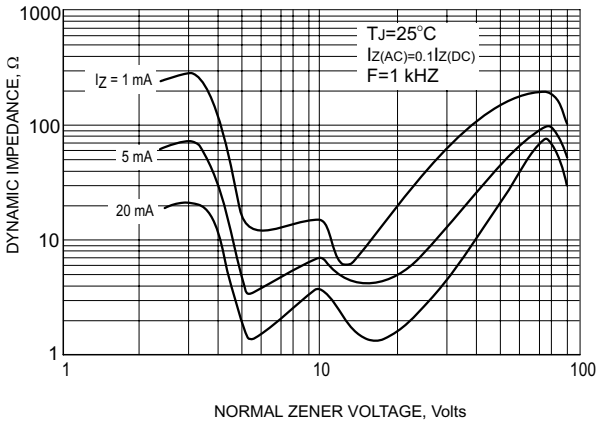
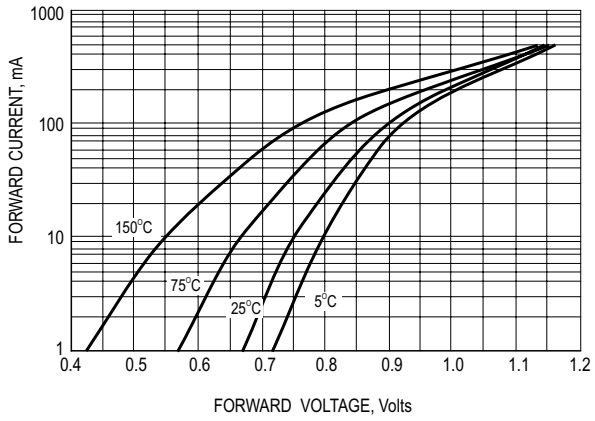
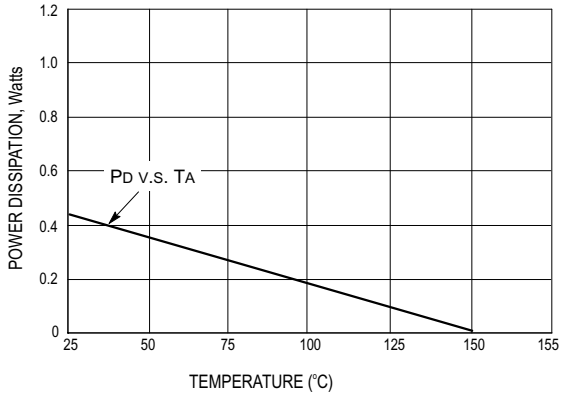


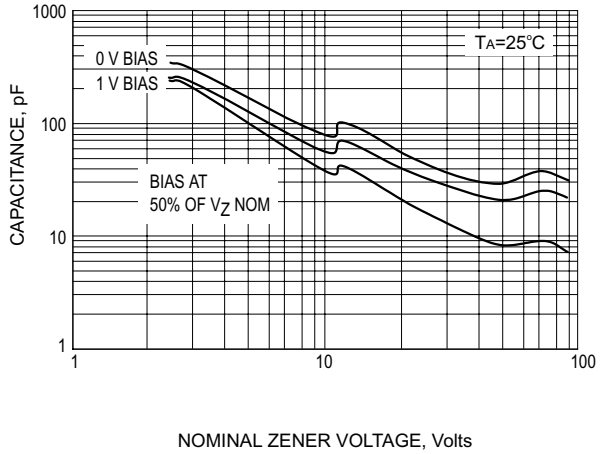
EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE



TYPICAL FORWARD VOLTAGE

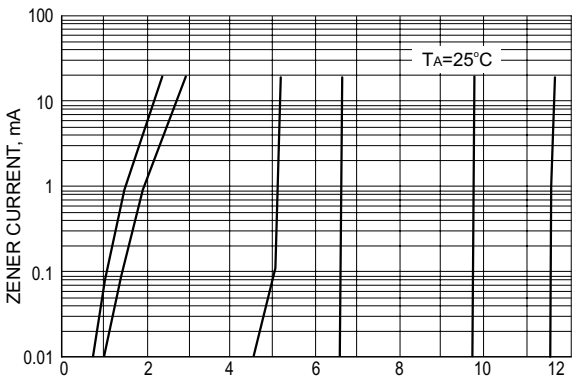


STEADY STATE POWER DERATING

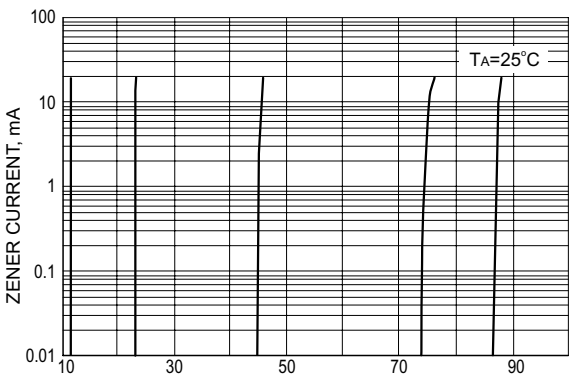


TYPICAL CAPACITANCE

MMSZ5221B thru MMSZ5267B



ZENER VOLTAGE V.S. ZENER CURRENT



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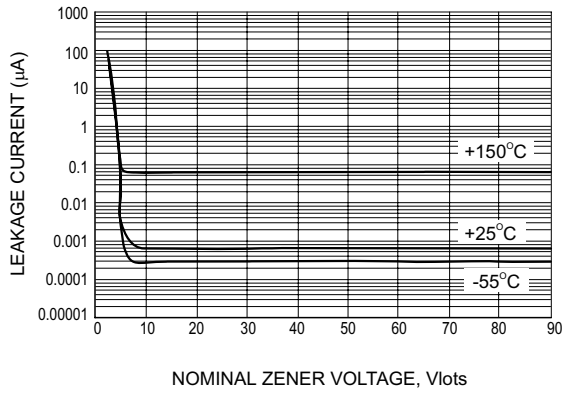

TYPICAL LEAKGE CURRENT

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Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF