SEMICONDUCTOR

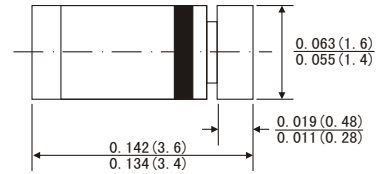
ZMM5221 THRU ZMM5262

0.5W SILICON PLANAR ZENER DIODES

FEATURES

- Standard Zener voltage tolerance is ±20%.Add suffix "A" for±10% tolerance ,suffix "B" for±5% tolerance and suffix "C" for±2% tolerance Other tolerance, non standard and higher zener voltages are upon request
- High temperature soldering guaranteed:260℃/10 seconds at terminals
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

MiniMELF



Dimensions in inches and (millimeters)

MECHANICAL DATA

- *Case*: MiniMELF(SOD-80) glass case
- *Weight*: Approx. 0.05 gram

ABSOLUTE MAXIMUM RATINGS(LIMITING VALUES) (T_A=25℃)

	Symbols	*Value*	*Units*
Zener current see table "Characteristics"			
Power dissipation at T_A=25℃	P_{tot}	500[1)]	mW
Junction temperature	T_J	175	℃
Storage temperature range	T_{STG}	-65 to+175	℃
1) Valid provided that electrodes is kept at ambient temperature			

ELECTRICAL CHARACTERISTICS (T_A=25℃)

	Symbols	*Min*	*Typ*	*Max*	*Units*
Thermal resistance junction to ambient	$R_{\theta JA}$			300[1)]	K/W
Forward voltage at I_F=200mA	V_F			1.1	V
1) Valid provided that electrodes is kept at ambient temperature					

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Type	Nominal Zener Voltage [1]	Test Current	Maximum Zener Impedance [2]		Typical temperature coefficient	Maximum reverse leakage current			Maximum regulator Current [3]
	V_Z(V) at I_{ZT}	I_{ZT} (mA)	Z_{ZT}(Ω) at I_{ZT}	Z_{ZK}(Ω) at I_{ZT}=0.25mA	αV_Z %/K	I_R(uA)	Test voltage V_R(V) Suffix A	Test voltage V_R(V) Suffix B	I_{ZM}(mA)
ZMM5221	2. 4	20	30	1200	-0.085	100	0.95	1.0	185
ZMM5222	2. 5	20	30	1250	-0.085	100	0.95	1.0	180
ZMM5223	2. 7	20	30	1300	-0.080	75	0.95	1.0	165
ZMM5224	2. 8	20	30	1400	-0.080	75	0.95	1.0	160
ZMM5225	3.0	20	29	1600	-0.075	50	0.95	1.0	152
ZMM5226	3.3	20	28	1600	-0.070	25	0.95	1.0	138
ZMM5227	3.6	20	24	1700	-0.065	15	0.95	1.0	126
ZMM5228	3.9	20	23	1900	-0.060	10	0.95	1.0	115
ZMM5229	4.3	20	22	2000	-0.055	5	0.95	1.0	106
ZMM5230	4.7	20	19	1900	±0.030	5	1.9	2.0	97
ZMM5231	5.1	20	17	1600	±0.030	5	1.9	2.0	89
ZMM5232	5.6	20	11	1600	+0.038	5	2.9	3.0	81
ZMM5233	6.0	20	7	1600	+0.038	5	3.3	3.5	76
ZMM5234	6.2	20	7	1000	+0.045	5	3.8	4.0	73
ZMM5235	6.8	20	5	750	+0.050	3	4.8	5.0	67
ZMM5236	7.5	20	6	500	+0.058	3	5.7	6.0	61
ZMM5237	8.2	20	8	500	+0.062	3	6.2	6.5	55
ZMM5238	8.7	20	8	600	+0.065	3	6.2	6.5	52
ZMM5239	9.1	20	10	600	+0.068	3	6.7	7.0	50
ZMM5240	10	20	17	600	+0.075	3	7.6	8.0	45
ZMM5241	11	20	22	600	+0.076	2	8.0	8.4	41
ZMM5242	12	20	30	600	+0.077	1	8.7	9.1	38
ZMM5243	13	9.5	13	600	+0.079	0.5	9.4	9.9	35
ZMM5244	14	9.0	15	600	+0.082	0.1	9.5	10	32
ZMM5245	15	8.5	16	600	+0.082	0.1	10.5	11	30
ZMM5246	16	7.8	17	600	+0.083	0.1	11.4	12	28
ZMM5247	17	7.4	19	600	+0.084	0.1	12.4	13	27
ZMM5248	18	7.0	21	600	+0.085	0.1	13.3	14	25
ZMM5249	19	6.6	23	600	+0.086	0.1	13.3	14	24
ZMM5250	20	6.2	25	600	+0.086	0.1	14.3	15	23
ZMM5251	22	5.6	29	600	+0.087	0.1	16.2	17	21
ZMM5252	24	5.2	33	600	+0.087	0.1	17.1	18	19.1
ZMM5253	25	5.0	35	600	+0.089	0.1	18.1	19	18.2
ZMM5254	27	4.6	41	600	+0.090	0.1	20	21	16.8
ZMM5255	28	4.5	44	600	+0.091	0.1	20	21	16.2
ZMM5256	30	4.2	49	600	+0.091	0.1	22	23	15.1
ZMM5257	33	3.8	58	700	+0.092	0.1	24	25	13.8
ZMM5258	36	3.4	70	700	+0.093	0.1	26	27	12.6
ZMM5259	39	3.2	80	800	+0.094	0.1	29	30	11.6
ZMM5260	43	3.0	93	900	+0.095	0.1	31	33	10.6
ZMM5261	47	2.7	105	1000	+0.095	0.1	34	36	9.7
ZMM5262	51	2.5	125	1100	+0.096	0.1	37	39	8.9

1) Tested with pulses tp = 20 ms , Measured under thermal equilibrium and DC test conditions.
2) The zener impedance is derived from the 50Hz AC voltage which results when an AC current having an RMS value equal to 10% of the Zener current (I_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK} . Zener impedance is measured at two points to insure a sharp knee on the breakdown curve and to eliminate unstable units.
3) Valid provided that electrodes are kept at ambient temperature.

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FIG.1-Power Dissipation vs Ambient Temperature

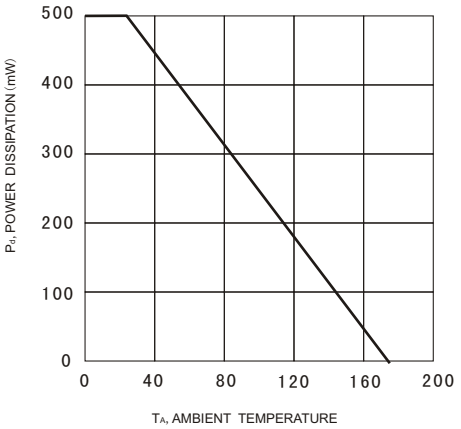

FIG.2-Junction Capacitance vs Zener Voltage

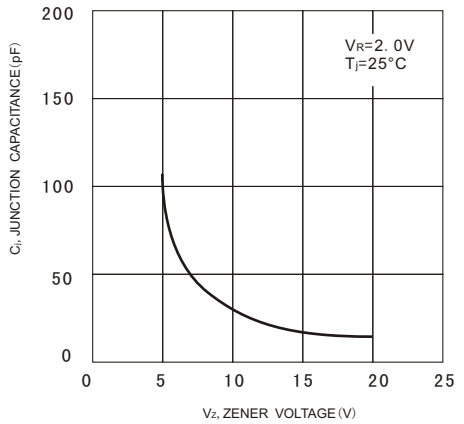

FIG.3-Differential Zener Impedance

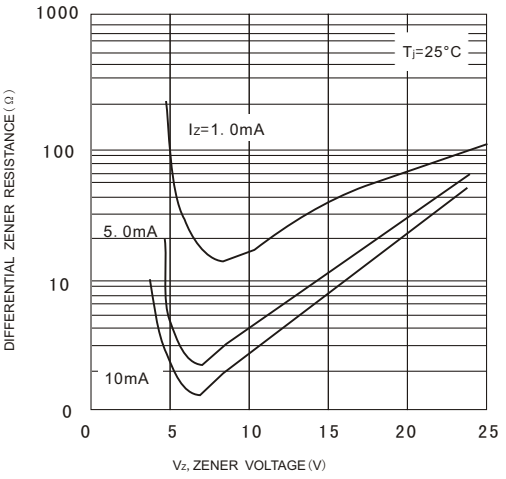

FIG.4-typical Normallzed Transient Thermal Impedance Curves