WON-TOP ELECTRONICS

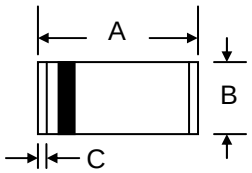
ZMM5221B – ZMM5266B

500mW SURFACE MOUNT ZENER DIODE

RoHS Pb

Features

- Planar Die Construction
- 500mW Power Dissipation
- 2.4V – 68V Nominal Zener Voltage
- 5% Standard Vz Tolerance
- Ideally Suited for Automated Assembly
- For Use in Voltage Stabilizer or Reference



Mechanical Data

- Case: MiniMELF, Molded Glass
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.03 grams
- Marking: Cathode Band Only
- **Lead Free: For RoHS / Lead Free Version, Add "-LF" Suffix to Part Number, See Page 5**

MiniMELF		
Dim	**Min**	**Max**
A	3.30	3.70
B	1.30	1.60
C	0.28	0.50
All Dimensions in mm		

Maximum Ratings @T_A=25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation at T_A = 25°C (Note 1)	P_D	500	mW
Forward Voltage @ I_F = 200mA	V_F	1.1	V
Thermal Resistance Junction to Ambient (Note 1)	$R_{\theta JA}$	0.3	°C/mW
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +175	°C

Note: 1. Mounted on ceramic substrate with minimum recommended pad layout.

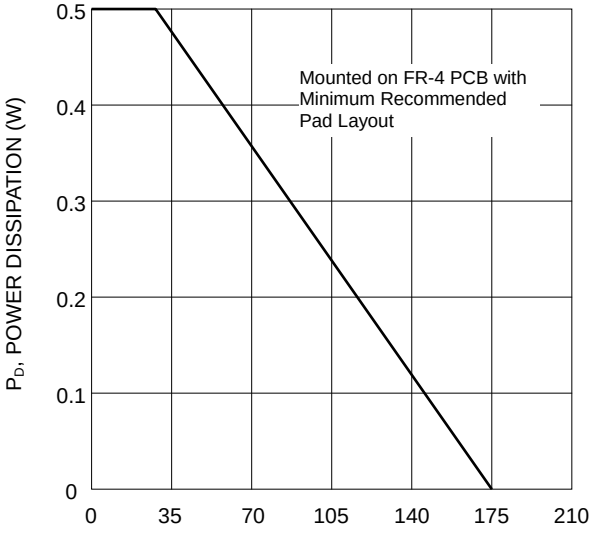


Fig. 1 Power Derating Curve

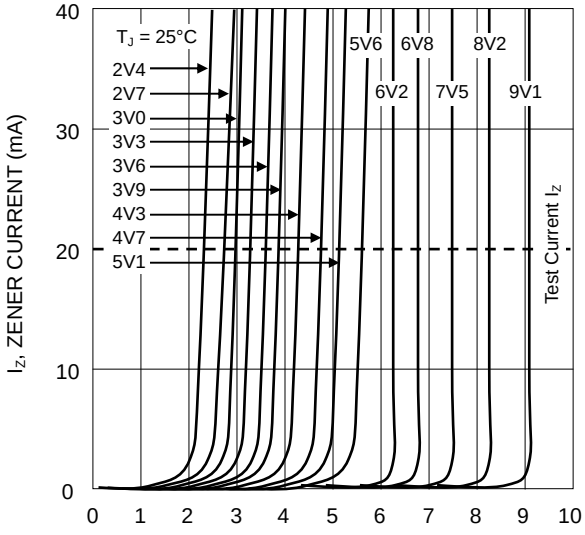


Fig. 2 Zener Breakdown Characteristics

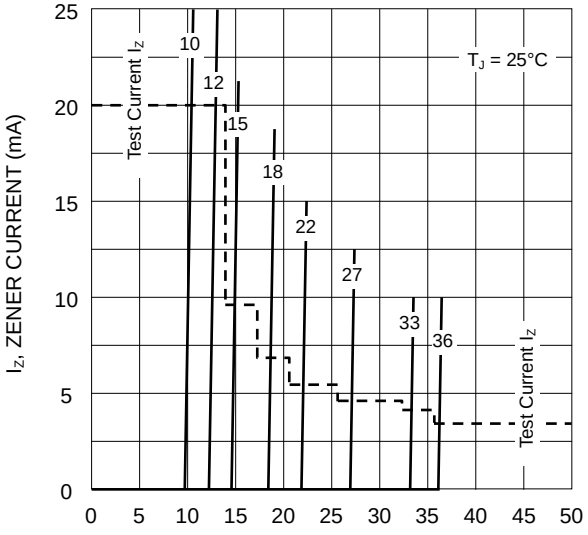


Fig. 3 Zener Breakdown Characteristics

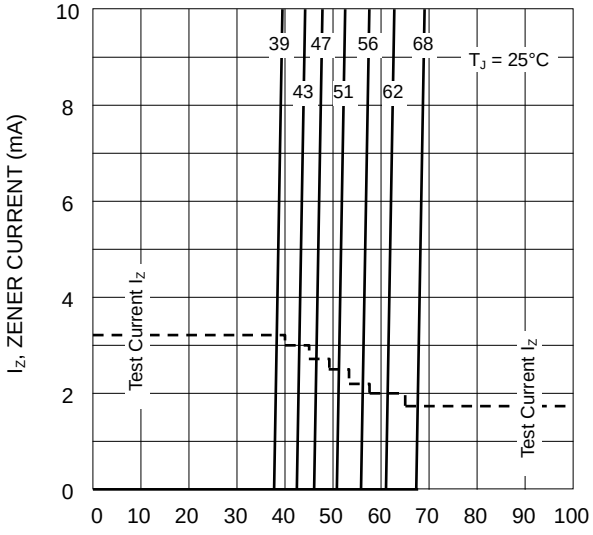


Fig. 4 Zener Breakdown Characteristics

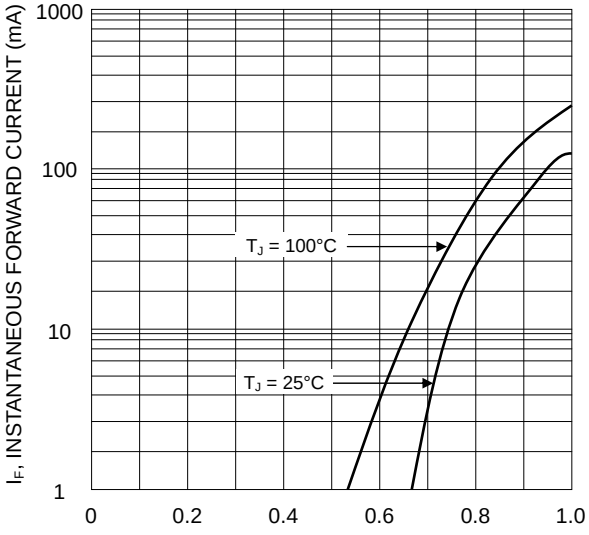


Fig. 5 Typical Forward Characteristics

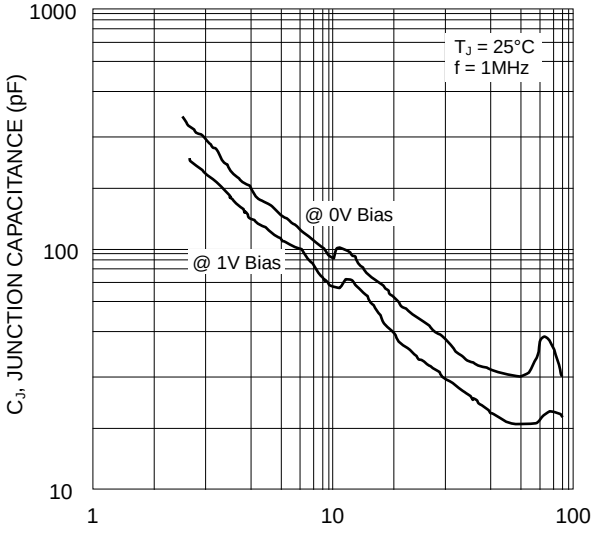


Fig. 6 Junction Capacitance vs. Nominal Zener Voltage

Electrical Characteristics (@T_A=25°C unless otherwise specified) Table 1

Type Number (Note 1)	Zener Voltage Range (Note 2)			Maximum Zener Impedance (Note 3)				Max Reverse Leakage Current		Typical Temp. Coefficient of Zener Voltage
	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)	(%/°C)
ZMM5221B	2.4	2.28	2.52	30	20	1200	0.25	100	1.0	-0.075
ZMM5222B	2.5	2.38	2.63	30	20	1250	0.25	100	1.0	-0.075
ZMM5223B	2.7	2.57	2.84	30	20	1300	0.25	75	1.0	-0.075
ZMM5225B	3.0	2.85	3.15	29	20	1600	0.25	50	1.0	-0.075
ZMM5226B	3.3	3.14	3.47	28	20	1600	0.25	25	1.0	-0.070
ZMM5227B	3.6	3.42	3.78	24	20	1700	0.25	15	1.0	-0.065
ZMM5228B	3.9	3.71	4.10	23	20	1900	0.25	10	1.0	-0.060
ZMM5229B	4.3	4.09	4.52	22	20	2000	0.25	5.0	1.0	-0.055
ZMM5230B	4.7	4.47	4.94	19	20	1900	0.25	5.0	2.0	±0.030
ZMM5231B	5.1	4.85	5.36	17	20	1600	0.25	5.0	2.0	±0.030
ZMM5232B	5.6	5.32	5.88	11	20	1600	0.25	5.0	3.0	+0.038
ZMM5233B	6.0	5.70	6.30	7.0	20	1600	0.25	5.0	3.5	+0.038
ZMM5234B	6.2	5.89	6.51	7.0	20	1000	0.25	5.0	4.0	+0.045
ZMM5235B	6.8	6.46	7.14	5.0	20	750	0.25	3.0	5.0	+0.050
ZMM5236B	7.5	7.13	7.88	6.0	20	500	0.25	3.0	6.0	+0.058
ZMM5237B	8.2	7.79	8.61	8.0	20	500	0.25	3.0	6.5	+0.062
ZMM5238B	8.7	8.27	9.14	8.0	20	600	0.25	3.0	6.5	+0.065
ZMM5239B	9.1	8.65	9.56	10	20	600	0.25	3.0	7.0	+0.068
ZMM5240B	10	9.50	10.50	17	20	600	0.25	3.0	8.0	+0.075
ZMM5241B	11	10.45	11.55	22	20	600	0.25	2.0	8.4	+0.076
ZMM5242B	12	11.40	12.60	30	20	600	0.25	1.0	9.1	+0.077
ZMM5243B	13	12.35	13.65	13	9.5	600	0.25	0.5	9.9	+0.079
ZMM5245B	15	14.25	15.75	16	8.5	600	0.25	0.1	11	+0.082
ZMM5246B	16	15.20	16.80	17	7.8	600	0.25	0.1	12	+0.083
ZMM5248B	18	17.10	18.90	21	7.0	600	0.25	0.1	14	+0.085
ZMM5250B	20	19.00	21.00	25	6.2	600	0.25	0.1	15	+0.086
ZMM5251B	22	20.90	23.10	29	5.6	600	0.25	0.1	17	+0.087
ZMM5252B	24	22.80	25.20	33	5.2	600	0.25	0.1	18	+0.087
ZMM5254B	27	25.65	28.35	41	4.6	600	0.25	0.1	21	+0.090
ZMM5255B	28	26.60	29.40	44	4.5	600	0.25	0.1	21	+0.091
ZMM5256B	30	28.50	31.50	49	4.2	600	0.25	0.1	23	+0.091
ZMM5257B	33	31.35	34.65	58	3.8	700	0.25	0.1	25	+0.092
ZMM5258B	36	34.20	37.80	70	3.4	700	0.25	0.1	27	+0.093
ZMM5259B	39	37.05	40.95	80	3.2	800	0.25	0.1	30	+0.094
ZMM5260B	43	40.85	45.15	93	3.0	900	0.25	0.1	33	+0.095
ZMM5261B	47	44.65	49.35	105	2.7	1000	0.25	0.1	36	+0.095
ZMM5262B	51	48.45	53.55	125	2.5	1100	0.25	0.1	39	+0.096
ZMM5263B	56	53.20	58.80	150	2.2	1300	0.25	0.1	43	+0.096
ZMM5264B	60	57.00	63.00	170	2.1	1400	0.25	0.1	46	+0.097
ZMM5265B	62	58.90	65.10	185	2.0	1400	0.25	0.1	47	+0.097
ZMM5266B	68	64.60	71.40	230	1.8	1600	0.25	0.1	52	+0.097

Note: 1. Type numbers listed have standard tolerance on the nominal zener voltage of ±5%.
2. Measured with device junction in thermal equilibrium.
3. f = 1KHz

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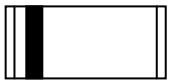
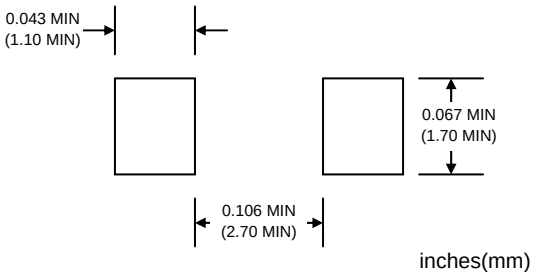
MARKING INFORMATION



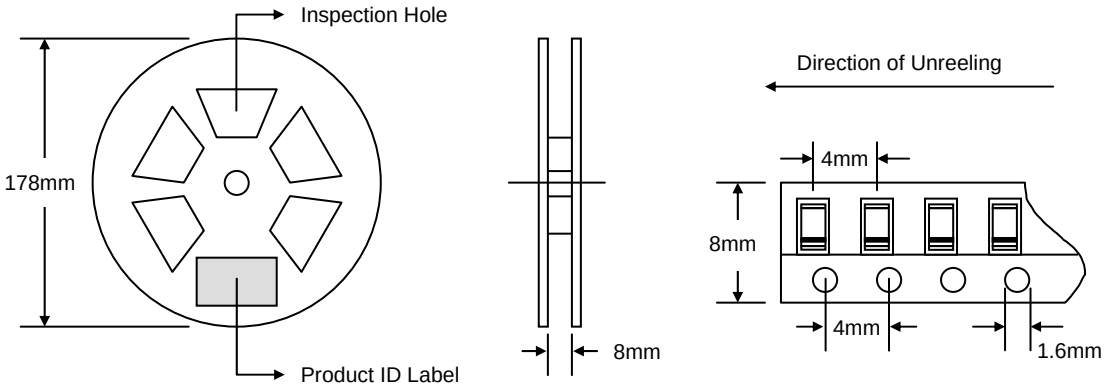
Cathode Band Only

RECOMMENDED FOOTPRINT



PACKAGING INFORMATION

TAPE & REEL



Reel Diameter (mm)	Quantity (PCS)	Inner Box Size L x W x H (mm)	Quantity (PCS)	Carton Size L x W x H (mm)	Quantity (PCS)	Approx. Gross Weight (KG)
178	2,500	185 x 120 x 185	25,000	400 x 273 x 415	200,000	13.5

Note: 1. Anti-static plastic reel, white or water clear or blue color. Inspection hole might be varied in different alignment.
2. Components are packed in accordance with EIA standard 481-1 and 481-2.

ORDERING INFORMATION

Product No.	Package Type	Shipping Quantity
ZMM52xxB-T1	MiniMELF	2500/Tape & Reel

1. Shipping quantity given is for minimum packing quantity only. For minimum order quantity, please consult the Sales Department.
2. **To order RoHS / Lead Free version (with Lead Free finish), add "-LF" suffix to part number above. For example, ZMM5221B-T1-LF**.

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