

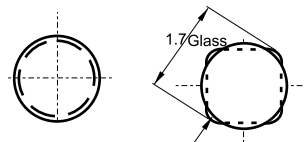
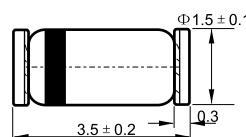
Features

- Low Reverse Leakage
- Low Zener Impedance
- 500mW; Power Dissipation of 500mW
- High Stability and High Reliability

Mechanical Data

- Case: LL-34 Glass Case
- Polarity: Color band denotes cathode end
- Mounting Position: Any

MINI-MELF(LL-34)



Dimension in millimeters

Maximum Ratings & Thermal Characteristics (Ratings at 25 °C ambient temperature unless otherwise specified.)

Parameters	Symbol	Value	Unit
Power Dissipation	Pd	500 ¹⁾	mW
Operating junction temperature	Tj	175	
Storage temperature range	Ts	-65~+175	

1) Valid provided that electrodes are kept at ambient temperature

Electrical Characteristics (Ratings at 25 °C ambient temperature unless otherwise specified).

TYPE	VZ(V)				ZZT(Ω)		ZZK(Ω)		IR(μA)	
	Nom.	MIN	MAX	IZ(mA)	MAX	IZT(mA)	MAX	IZK(mA)	MAX	VR(V)
ZMM5221B	2.4	2.280	2.520	20.0	30.0	20.0	1200	0.25	100.0	1.0
ZMM5222B	2.5	2.375	2.625	20.0	30.0	20.0	1250	0.25	100.0	1.0
ZMM5223B	2.7	2.565	2.835	20.0	30.0	20.0	1300	0.25	75	1.0
ZMM5224B	2.8	2.660	2.940	20.0	30.0	20.0	1400	0.25	75	1.0
ZMM5225B	3	2.850	3.150	20.0	29.0	20.0	1600	0.25	50	1.0
ZMM5226B	3.3	3.135	3.465	20.0	28.0	20.0	1600	0.25	25	1.0
ZMM5227B	3.6	3.420	3.780	20.0	24.0	20.0	1700	0.25	15	1.0
ZMM5228B	3.9	3.705	4.095	20.0	23.0	20.0	1900	0.25	10	1.0
ZMM5229B	4.3	4.085	4.515	20.0	22.0	20.0	2000	0.25	5.0	1.0
ZMM5230B	4.7	4.465	4.935	20.0	19.0	20.0	1900	0.25	5.0	2.0
ZMM5231B	5.1	4.845	5.355	20.0	17.0	20.0	1600	0.25	5.0	2.0
ZMM5232B	5.6	5.320	5.880	20.0	11.0	20.0	1600	0.25	5.0	3.0
ZMM5233B	6	5.700	6.300	20.0	7.0	20.0	1600	0.25	5.0	3.5
ZMM5234B	6.2	5.890	6.510	20.0	7.0	20.0	1000	0.25	5.0	4.0
ZMM5235B	6.8	6.460	7.140	20.0	5.0	20.0	750	0.25	3.0	5.0
ZMM5236B	7.5	7.125	7.875	20.0	6.0	20.0	500	0.25	3	6.0
ZMM5237B	8.2	7.790	8.610	20.0	8.0	20.0	500	0.25	3	6.5
ZMM5238B	8.7	8.265	9.135	20.0	8.0	20.0	600	0.25	3	6.5

Electrical Characteristics (Ratings at 25 °C ambient temperature unless otherwise specified).

TYPE	VZ(V)				ZZT(Ω)		ZZK(Ω)		IR(μA)	
	Nom.	MIN	MAX	IZ(mA)	MAX	IZT(mA)	MAX	IZK(mA)	MAX	VR(V)
ZMM5239B	9.1	8.645	9.555	20.0	10.0	20.0	600	0.25	3	7.0
ZMM5240B	10	9.500	10.500	20.0	17.0	20.0	600	0.25	3	8.0
ZMM5241B	11	10.450	11.550	20.0	22.0	20.0	600	0.25	2	8.4
ZMM5242B	12	11.400	12.600	20.0	30.0	20.0	600	0.25	1	9.1
ZMM5243B	13	12.350	13.650	9.5	13.0	9.5	600	0.25	0.5	9.9
ZMM5244B	14	13.300	14.700	9.0	15.0	9.0	600	0.25	0.1	10.0
ZMM5245B	15	14.250	15.750	8.5	16.0	8.5	600	0.25	0.1	11.0
ZMM5246B	16	15.200	16.800	7.8	17.0	7.8	600	0.25	0.1	12.0
ZMM5247B	17	16.150	17.850	7.4	19.0	7.4	600	0.25	0.1	13.0
ZMM5248B	18	17.100	18.900	7.0	21.0	7.0	600	0.25	0.1	14.0
ZMM5249B	19	18.050	19.950	6.6	23.0	6.6	600	0.25	0.1	14.0
ZMM5250B	20	19.000	21.000	6.2	25.0	6.2	600	0.25	0.1	15.0
ZMM5251B	22	20.900	23.100	5.6	29.0	5.6	600	0.25	0.1	17.0
ZMM5252B	24	22.800	25.200	5.2	33.0	5.2	600	0.25	0.1	18.0
ZMM5253B	25	23.750	26.250	5.0	35.0	5.0	600	0.25	0.1	19.0
ZMM5254B	27	25.650	28.350	4.6	41.0	4.6	600	0.25	0.1	21.0
ZMM5255B	28	26.600	29.400	4.5	44.0	4.5	600	0.25	0.1	21.0
ZMM5256B	30	28.500	31.500	4.2	49.0	4.2	600	0.25	0.1	23.0
ZMM5257B	33	31.350	34.650	3.8	58.0	3.8	700	0.25	0.1	25.0
ZMM5258B	36	34.200	37.800	3.4	70.0	3.4	700	0.25	0.1	27.0
ZMM5259B	39	37.050	40.950	3.2	80.0	3.2	800	0.25	0.1	30.0
ZMM5260B	43	40.850	45.150	3.0	93.0	3.0	900	0.25	0.1	33.0
ZMM5261B	47	44.650	49.350	2.7	105.0	2.7	100	0.25	0.1	36.0
ZMM5262B	51	48.450	53.550	2.5	125.0	2.5	1100	0.25	0.1	39.0
ZMM5263B	56	53.200	58.800	2.2	150.0	2.2	1300	0.25	0.1	43.0
ZMM5263B	60	57.000	63.000	2.1	170.0	2.1	1400	0.25	0.4	46.0
ZMM5264B	62	58.900	65.100	2.0	185.0	2.0	1400	0.25	0.1	47.0
ZMM5266B	68	64.600	71.400	1.8	230.0	1.8	1600	0.25	0.1	52.0
ZMM5267B	75	71.250	78.750	1.7	270.0	1.8	1700	0.25	0.1	56.0

Notes:

- 1) Standard Zener voltage tolerance is $\pm 20\%$. Add suffix "A" for $\pm 10\%$ tolerance, suffix "B" for $\pm 5\%$ tolerance and suffix "C" for $\pm 2\%$ tolerance. Other tolerance, non standard and higher Zener voltages are upon request.
- 2) The Zener Impedance is derived from the 60 Hz AC voltage which results when an AC current having an RMS value equal to 10% of the Zener current (IZT or IZK) is superimposed on IZT or IZK. 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.
- 4) Measured under thermal equilibrium and DC test conditions.
- 5) Tested with pulses $t_p = 20$ ms.
- 6) $V_F(\text{Max}) = 1.10\text{V}$ @ $I_F = 200\text{mA}$

Ratings and Characteristics Curve($T_A=25^\circ\text{C}$ unless otherwise noted)

Fig. 1 Power Dissipation vs Ambient Temperature

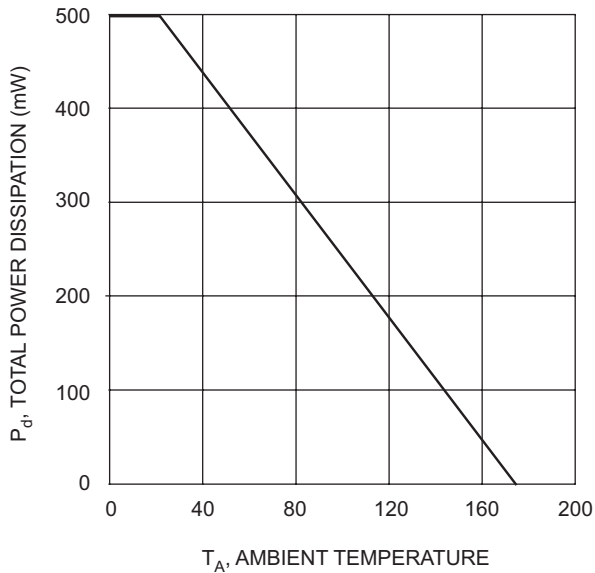


Fig. 2 Junction Capacitance vs Zener Voltage

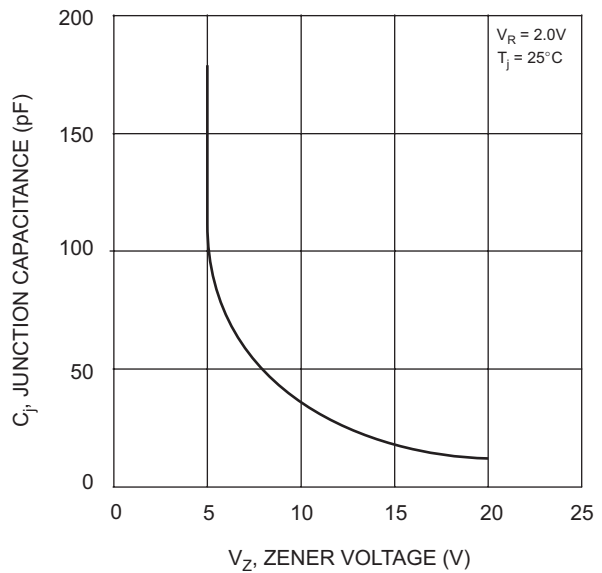


Fig. 3 Differential Zener Impedance

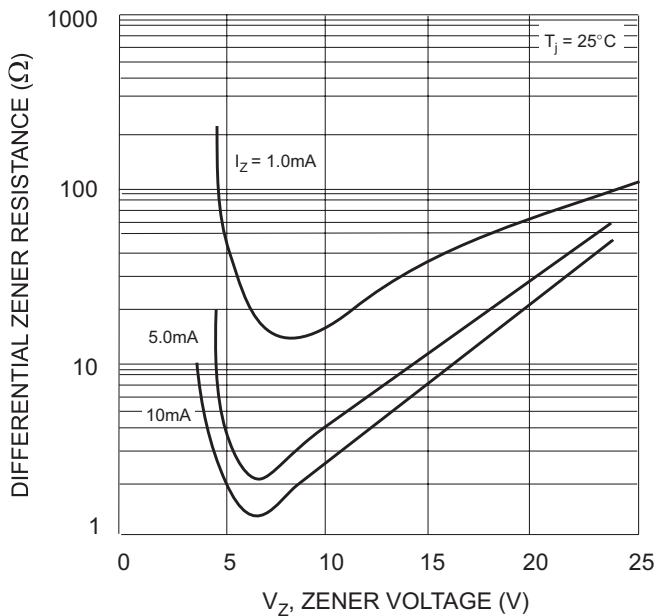


Fig. 4 Zener voltage vs Zener current

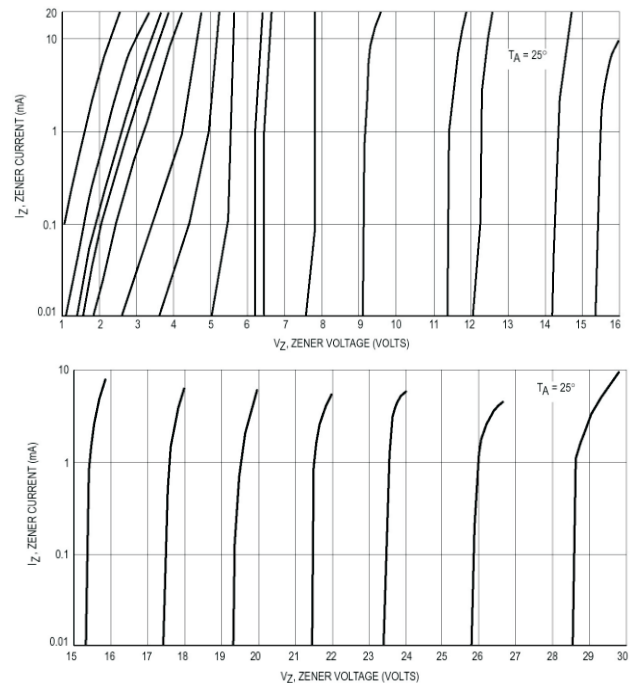


Fig. 5 Thermal resistance from junction to ambient as a function of pulse duration

