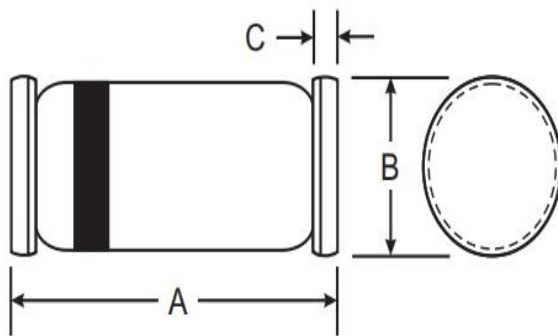


Features

- ◆ 500mw Power Dissipation
- ◆ For surface mounted applications to optimize board space
- ◆ Zener Breakdown Voltage Range 2.4V to 75V
- ◆ High Temperature soldering guaranteed: 260°C/40 seconds at terminals
- ◆ Plastic package has underwriters laboratory flammability 94V-0
- ◆ Meets MSL level 1, per J-STD-020.
- ◆ Meet Halogen free and RoHS compliant
- ◆ Case: MiniMELF
- ◆ Polarity: Cathode Band

Dimensions (MiniMELF)



Symbol	Millimeters	
	Min.	Max.
A	3.30	3.70
B	1.30	1.60
C	0.28	0.50

Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Unit	Value
Power Dissipation(Note 1)	P_D	mW	500
Thermal Resistance, Junction to Ambient Air(Note 1)	$R_{\theta JA}$	$^{\circ}\text{C}/\text{W}$	300
Forward Voltage@ $I_F=200\text{mA}$	V_F	V	1.5
Operating and Storage Temperature Range	T_j, T_{STG}	$^{\circ}\text{C}$	-65 to +175

Notes:

- Valid provided that electrodes are kept at ambient temperature.
- Tested with pulses, $T_p \leq 100\text{ms}$.

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

Part Number	Zener Voltage Range(Note2)				Maximum Zener Impedance		Maximum Reverse Current		Typical Temperature Coefficient @ I_{ZT}
	$V_Z @ I_{ZT}$			I_{ZT} mA	$Z_{ZT} @ I_{ZT}$ Ω	ZZK @ $I_{ZK} = 0.25\text{mA}$ Ω	I_R μA	@ V_R V	
	Nom (V)	Min (V)	Max (V)						%/ $^{\circ}\text{C}$
ZMM5221B	2.4	2.28	2.52	20	30	1200	100	1.0	-0.085
ZMM5222B	2.5	2.38	2.63	20	30	1250	100	1.0	-0.085
ZMM5223B	2.7	2.57	2.84	20	30	1300	75	1.0	-0.080
ZMM5224B	2.8	2.66	2.94	20	30	1400	75	1.0	-0.080
ZMM5225B	3.0	2.85	3.15	20	29	1600	50	1.0	-0.075
ZMM5226B	3.3	3.14	3.47	20	28	1600	25	1.0	-0.070
ZMM5227B	3.6	3.42	3.78	20	24	1700	15	1.0	-0.065
ZMM5228B	3.9	3.71	4.10	20	23	1900	10	1.0	-0.060
ZMM5229B	4.3	4.09	4.52	20	22	2000	5.0	1.0	-0.055
ZMM5230B	4.7	4.47	4.94	20	19	1900	5.0	2.0	± 0.030
ZMM5231B	5.1	4.85	5.36	20	17	1600	5.0	2.0	± 0.030
ZMM5232B	5.6	5.32	5.88	20	11	1600	5.0	3.0	+0.038
ZMM5233B	6.0	5.70	6.30	20	7.0	1600	5.0	3.5	+0.038
ZMM5234B	6.2	5.89	6.51	20	7.0	1000	5.0	4.0	+0.045
ZMM5235B	6.8	6.46	7.14	20	5.0	750	3.0	5.0	+0.050
ZMM5236B	7.5	7.13	7.88	20	6.0	500	3.0	6.0	+0.058
ZMM5237B	8.2	7.79	8.61	20	8.0	500	3.0	6.5	+0.062
ZMM5238B	8.7	8.27	9.14	20	8.0	600	3.0	6.5	+0.065
ZMM5239B	9.1	8.65	9.56	20	10	600	3.0	7.0	+0.068
ZMM5240B	10	9.50	10.50	20	17	600	3.0	8.0	+0.075

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

Part Number	Zener Voltage Range(Note2)				Maximum Zener Impedance		Maximum Reverse Current		Typical Temperature Coefficient @ I_{ZT}
	$V_Z @ I_{ZT}$			I_{ZT} mA	$Z_{ZT} @ I_{ZT}$ Ω	Z_{ZK} @ $I_{ZK} = 0.25\text{mA}$ Ω	I_R μA	@ V_R V	
	Nom (V)	Min (V)	Max (V)						
ZMM5241B	11	10.45	11.55	20	22	600	2.0	8.4	+0.076
ZMM5242B	12	11.40	12.60	20	30	600	1.0	9.1	+0.077
ZMM5243B	13	12.35	13.65	9.5	13	600	0.5	9.9	+0.079
ZMM5244B	14	13.30	14.70	9.0	15	600	0.1	10	+0.082
ZMM5245B	15	14.25	15.75	8.5	16	600	0.1	11	+0.082
ZMM5246B	16	15.20	16.80	7.8	17	600	0.1	12	+0.083
ZMM5247B	17	16.15	17.85	7.4	19	600	0.1	13	+0.084
ZMM5248B	18	17.10	18.90	7.0	21	600	0.1	14	+0.085
ZMM5249B	19	18.05	19.95	6.6	23	600	0.1	14	+0.086
ZMM5250B	20	19.00	21.00	6.2	25	600	0.1	15	+0.086
ZMM5251B	22	20.90	23.10	5.6	29	600	0.1	17	+0.087
ZMM5252B	24	22.80	25.20	5.2	33	600	0.1	18	+0.087
ZMM5253B	25	23.75	26.25	5.0	35	600	0.1	19	+0.089
ZMM5254B	27	25.65	28.35	4.6	41	600	0.1	21	+0.090
ZMM5255B	28	26.60	29.40	4.5	44	600	0.1	21	+0.091
ZMM5256B	30	28.50	31.50	4.2	49	600	0.1	23	+0.091
ZMM5257B	33	31.35	34.65	3.8	58	700	0.1	25	+0.092
ZMM5258B	36	34.20	37.80	3.4	70	700	0.1	27	+0.093
ZMM5259B	39	37.05	40.95	3.2	80	800	0.1	30	+0.094
ZMM5260B	43	40.85	45.15	3.0	93	900	0.1	33	+0.095
ZMM5261B	47	44.65	49.35	2.7	105	1000	0.1	36	+0.095
ZMM5262B	51	48.45	53.55	2.5	125	1100	0.1	39	+0.096
ZMM5263B	56	53.20	58.80	2.2	150	1300	0.1	43	+0.096
ZMM5264B	60	57.00	63.00	2.1	170	1400	0.1	46	+0.097
ZMM5265B	62	58.90	65.10	2.0	185	1400	0.1	47	+0.097
ZMM5266B	68	64.60	71.40	1.8	230	1600	0.1	52	+0.097
ZMM5267B	75	71.25	78.75	1.7	270	1700	0.1	56	+0.098

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

Figure 1. Power Dissipation vs Ambient Temperature

Figure 2. Junction Capacitance vs Zener Voltage

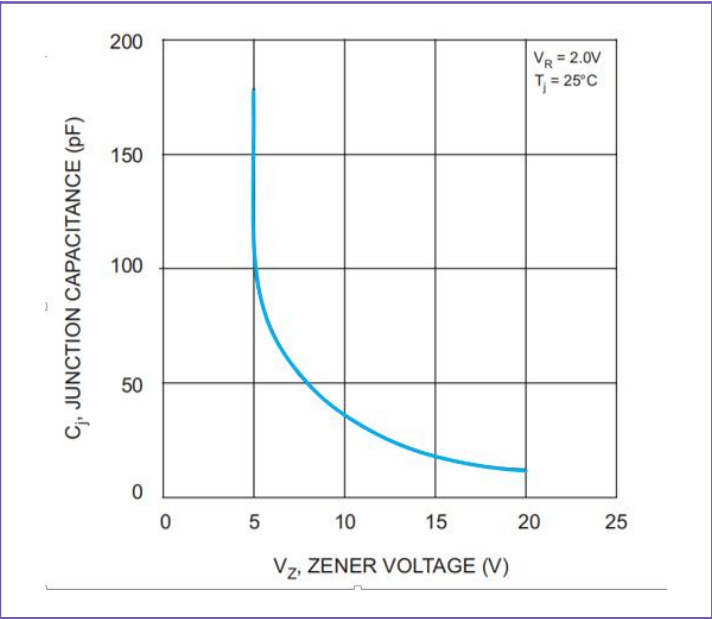
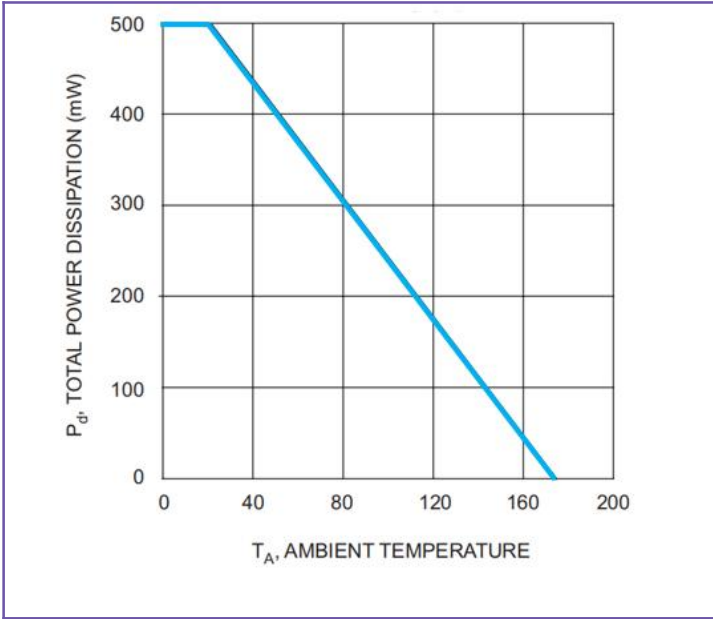
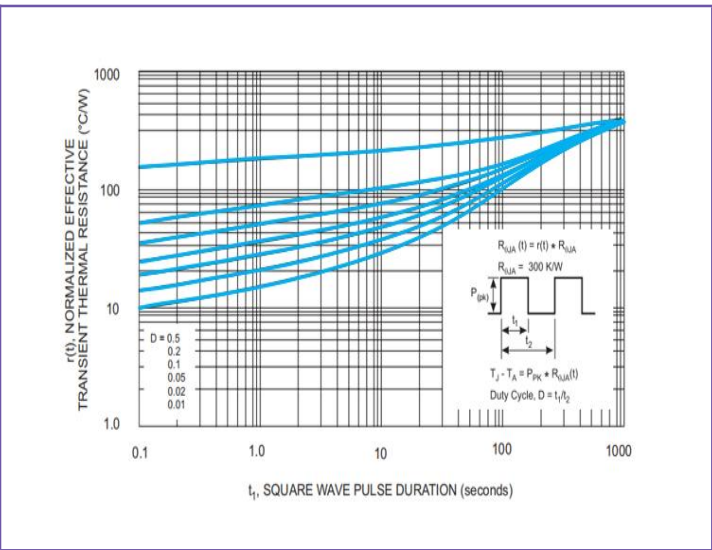
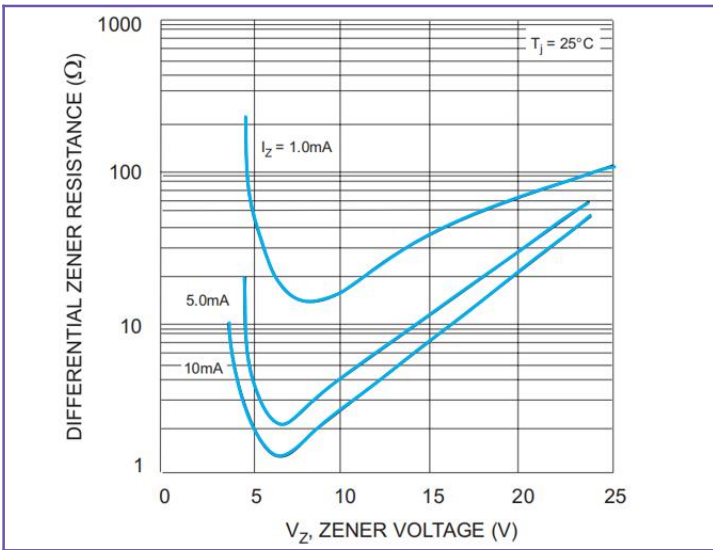
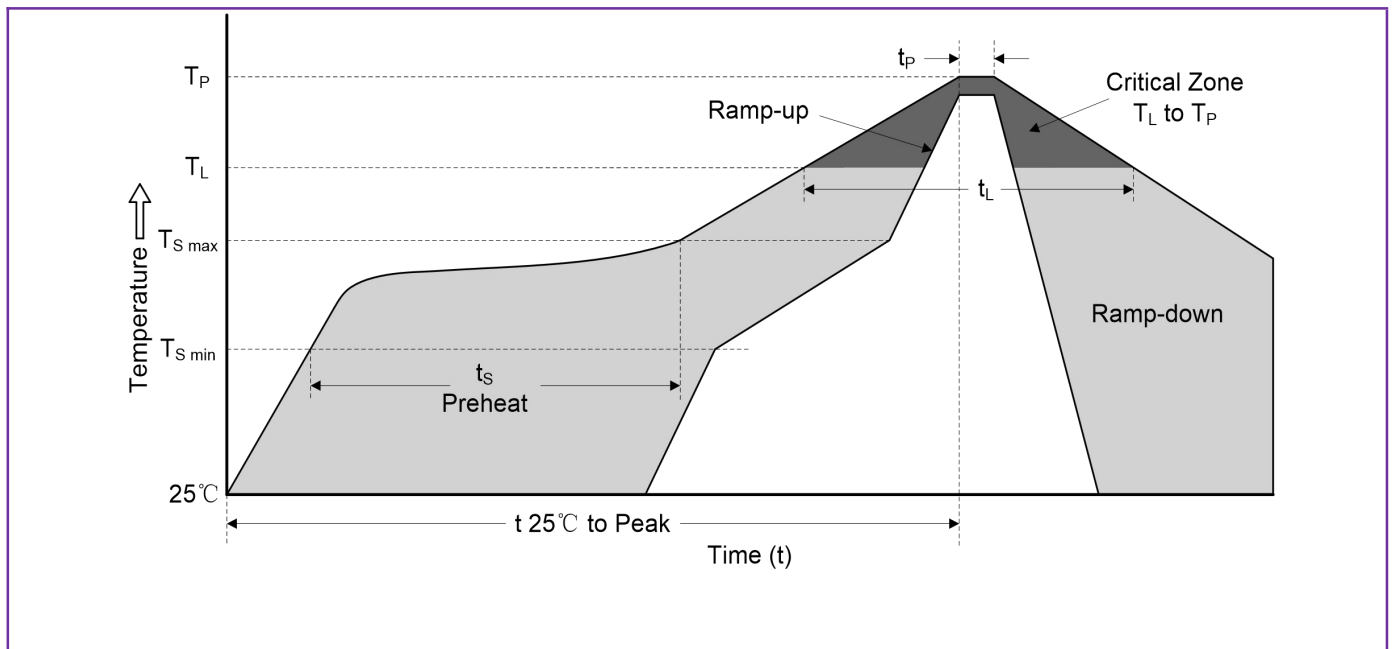


Figure 3. Differential Zener Impedance

Figure 4. Typical Normalized Transient Thermal Impedance Curves



Reflow Soldering Parameters



Reflow Condition		Lead-free Assembly
Pre heat	-Temperature Min ($T_{S\ min}$)	150°C
	-Temperature Max ($T_{S\ max}$)	200°C
	-Time (min to max) (t_s)	60-180 seconds
Average ramp-up rate (T_L to T_P)		3°C/second max.
$T_{S\ max}$ to T_L -Ramp-up Rate		3°C/second max.
Reflow	-Temperature (T_L) (Liquidus)	217°C
	-Time (min to max) (t_s)	60-150 seconds
Peak Temperature (T_P)		260(+0/-5)°C
Time within 5°C of actual Peak Temperature (t_p)		20-40 seconds
Ramp-down Rate		6°C/second max.
Time 25°C to Peak Temperature(T_P)		8 minutes max.
Do not exceed		260°C