



# ZMM2V4 - ZMM75

500mW SURFACE MOUNT ZENER DIODE

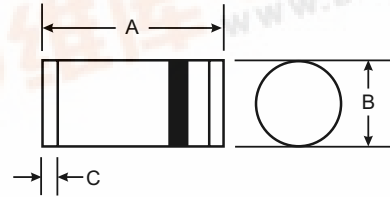
## Features

- Planar Die Construction
- Sealed Glass Case
- Ideally Suited for Automated Insertion
- 2.4V - 75V Nominal Zener Voltages

## Mechanical Data

- Case: MiniMELF, Glass
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Approx. Weight: 0.05 grams

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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 @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 2)	$P_d$	500	mW
Forward Voltage @ $I_F = 200\text{mA}$	$V_F$	1.5	V
Thermal Resistance, Junction to Ambient Air (Note 2)	$R_{\theta JA}$	300	K/W
Operating and Storage Temperature Range	$T_j, T_{STG}$	-55 to +175	$^\circ\text{C}$

- Notes:
1. Tested with Pulses,  $t_p = 20\text{ms}$ .
  2. Valid provided that Electrodes are kept at Ambient Temperature.

## Electrical Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified

Type Number	Nominal Zener Voltage (Note 1)		Zener Voltage Range	Maximum Zener Impedance	Maximum Zener Impedance		Maximum Leakage Current @ V <sub>R</sub>			Temperature Coefficient
	V <sub>Z</sub> @ I <sub>ZT</sub>		V <sub>Z</sub> @ I <sub>ZT</sub>	Z <sub>ZT</sub> @ I <sub>ZT</sub>	Z <sub>ZK</sub> @ I <sub>ZK</sub>		I <sub>R</sub> @ T <sub>J</sub> = 25°C	I <sub>R</sub> @ T <sub>J</sub> = 150°C	V <sub>R</sub>	
	(V)	(mA)	(V)	(Ω)	(Ω)	(mA)	(μA)	(μA)	(V)	
ZMM2V4	2.4	5.0	2.28 to 2.56	85	600	1.0	50	100	1.0	-0.09 to -0.06
ZMM2V7	2.7	5.0	2.5 to 2.9	85	600	1.0	10	50	1.0	-0.09 to -0.06
ZMM3V0	3.0	5.0	2.8 to 3.2	90	600	1.0	4.0	40	1.0	-0.08 to -0.05
ZMM3V3	3.3	5.0	3.1 to 3.5	90	600	1.0	2.0	40	1.0	-0.08 to -0.05
ZMM3V6	3.6	5.0	3.4 to 3.8	90	600	1.0	2.0	40	1.0	-0.08 to -0.05
ZMM3V9	3.9	5.0	3.7 to 4.1	90	600	1.0	2.0	40	1.0	-0.08 to -0.05
ZMM4V3	4.3	5.0	4.0 to 4.6	90	600	1.0	1.0	20	1.0	-0.06 to -0.03
ZMM4V7	4.7	5.0	4.4 to 5.0	80	600	1.0	0.5	10	1.0	-0.05 to +0.02
ZMM5V1	5.1	5.0	4.8 to 5.4	60	550	1.0	0.1	2.0	1.0	-0.02 to +0.02
ZMM5V6	5.6	5.0	5.2 to 6.0	40	450	1.0	0.1	2.0	1.0	-0.05 to +0.05
ZMM6V2	6.2	5.0	5.8 to 6.6	10	200	1.0	0.1	2.0	2.0	0.03 to 0.06
ZMM6V8	6.8	5.0	6.4 to 7.2	8.0	150	1.0	0.1	2.0	3.0	0.03 to 0.07
ZMM7V5	7.5	5.0	7.0 to 7.9	7.0	50	1.0	0.1	2.0	5.0	0.03 to 0.07
ZMM8V2	8.2	5.0	7.7 to 8.7	7.0	50	1.0	0.1	2.0	6.2	0.03 to 0.08
ZMM9V1	9.1	5.0	8.5 to 9.6	10	50	1.0	0.1	2.0	6.8	0.03 to 0.09
ZMM10	10	5.0	9.4 to 10.6	15	70	1.0	0.1	2.0	7.5	0.03 to 0.10
ZMM11	11	5.0	10.4 to 11.6	20	70	1.0	0.1	2.0	8.2	0.03 to 0.11
ZMM12	12	5.0	11.4 to 12.7	20	90	1.0	0.1	2.0	9.1	0.03 to 0.11
ZMM13	13	5.0	12.4 to 14.1	26	110	1.0	0.1	2.0	10	0.03 to 0.11
ZMM15	15	5.0	13.8 to 15.6	30	110	1.0	0.1	2.0	11	0.03 to 0.11
ZMM16	16	5.0	15.3 to 17.1	40	170	1.0	0.1	2.0	12	0.03 to 0.11
ZMM18	18	5.0	16.8 to 19.1	50	170	1.0	0.1	2.0	13	0.03 to 0.11
ZMM20	20	5.0	18.8 to 21.2	55	220	1.0	0.1	2.0	15	0.03 to 0.11
ZMM22	22	5.0	20.8 to 23.3	55	220	1.0	0.1	2.0	16	0.04 to 0.12
ZMM24	24	5.0	22.8 to 25.6	80	220	1.0	0.1	2.0	18	0.04 to 0.12
ZMM27	27	5.0	25.1 to 28.9	80	220	1.0	0.1	2.0	20	0.04 to 0.12
ZMM30	30	5.0	28 to 32	80	220	1.0	0.1	2.0	22	0.04 to 0.12
ZMM33	33	5.0	31 to 35	80	220	1.0	0.1	2.0	24	0.04 to 0.12
ZMM36	36	5.0	34 to 38	80	220	1.0	0.1	2.0	27	0.04 to 0.12
ZMM39	39	2.5	37 to 41	90	500	0.5	0.1	5.0	30	0.04 to 0.12
ZMM43	43	2.5	40 to 46	90	600	0.5	0.1	5.0	33	0.04 to 0.12
ZMM47	47	2.5	44 to 50	110	700	0.5	0.1	5.0	36	0.04 to 0.12
ZMM51	51	2.5	48 to 54	125	700	0.5	0.1	10	39	0.04 to 0.12
ZMM56	56	2.5	52 to 60	135	1000	0.5	0.1	10	43	0.04 to 0.12
ZMM62	62	2.5	58 to 66	150	1000	0.5	0.1	10	47	0.04 to 0.12
ZMM68	68	2.5	64 to 72	200	1000	0.5	0.1	10	51	0.04 to 0.12
ZMM75	75	2.5	70 to 79	250	1500	0.5	0.1	10	56	0.04 to 0.12

- Notes: 1. Tested with pulses  $t_p = 20$  ms.  
2. Valid provided that electrodes are kept at ambient temperature.

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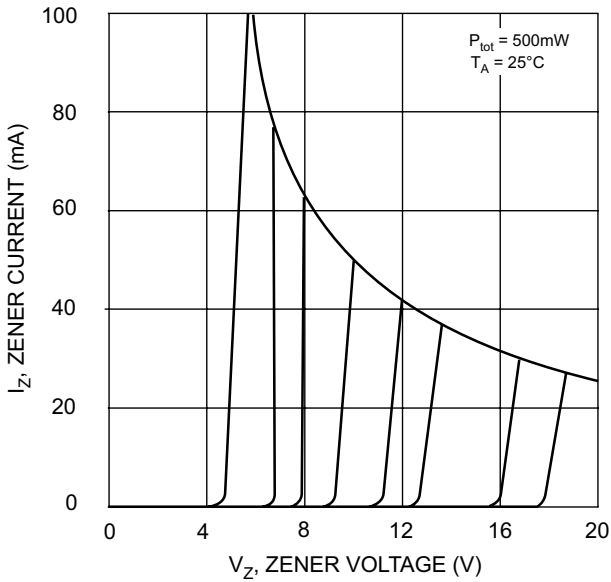


Fig. 1, Zener Current vs Zener Voltage

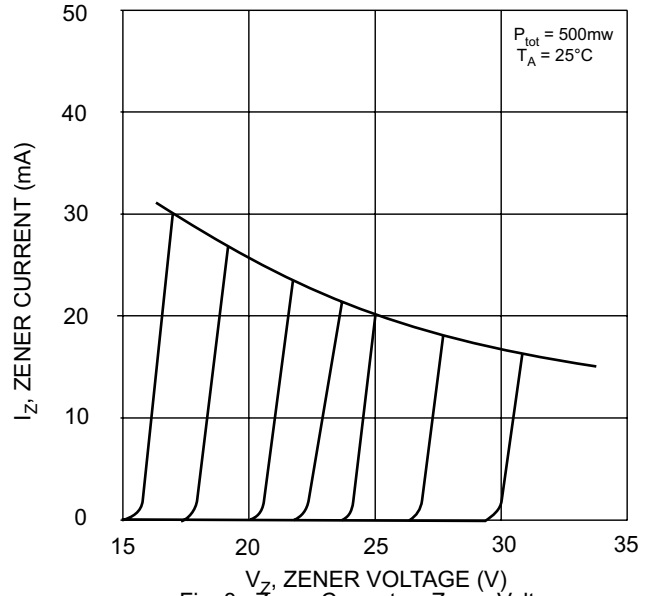


Fig. 8, Zener Current vs Zener Voltage

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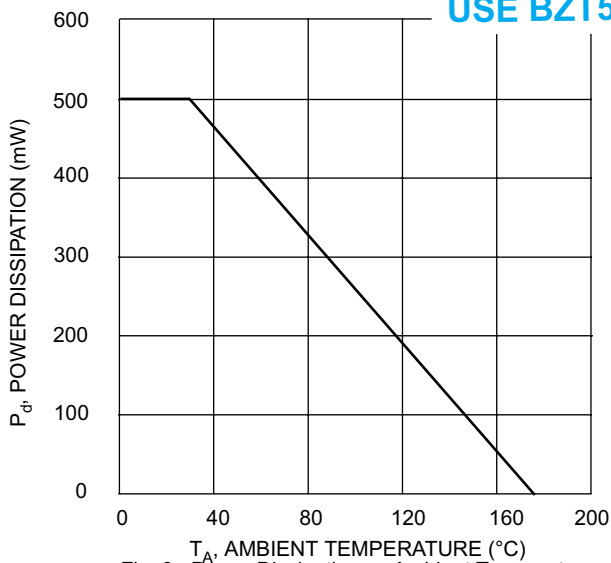


Fig. 3, Power Dissipation vs Ambient Temperature

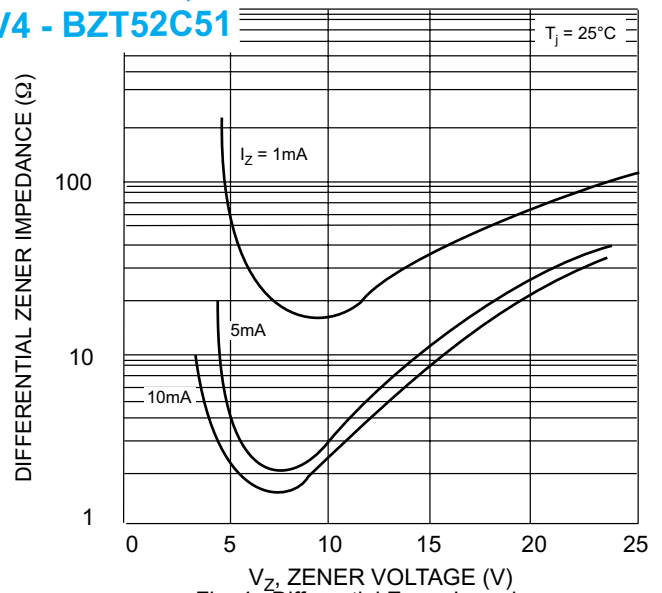


Fig. 4, Differential Zener Impedance

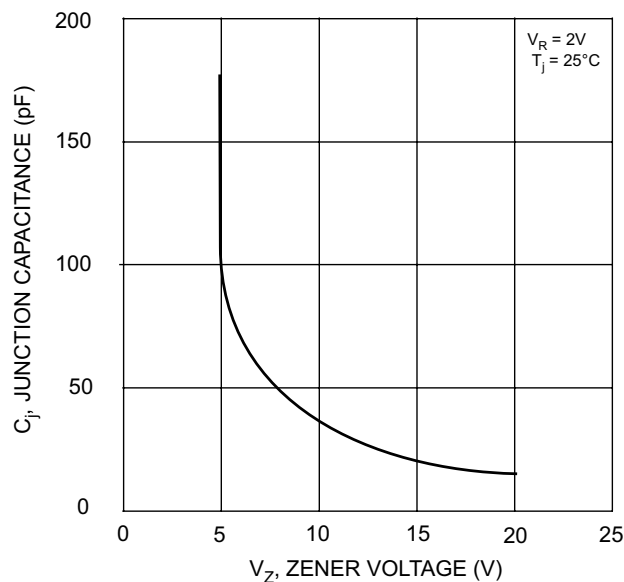


Fig. 5, Junction Capacitance vs Zener Voltage