ZMM2V0 THRU ZMM75

500 mW LL-34 Hermetically Sealed Glass Zener Voltage Regulators

SURFACE MOUNT
LL34

Specification Features:

- § Zener Voltage Range 2.0 to 75 Volts
- § LL-34 (Mini-MELF) Package
- § Surface Device Type Mounting
- § Hermetically Sealed Glass
- § Compression Bonded Construction
- § All External Surfaces Are Corrosion Resistant And Terminals Are Readily Solderable
- § RoHS Compliant
- § Matte Tin (Sn) Terminal Finish
- § Color band Indicates Negative Polarity

DEVICE MARKING DIAGRAM

Cathode Band Color : Blue

ELECTRICAL SYMBOL

Absolute Maximum Ratings And Characteristics (Ta = 25 °C)

Parameter	Symbol	Value	Unit
Power Dissipation	P_{tot}	500	mW
Forward Voltage at I_F = 200 mA	V_F	1.2	V
Storage Temperature Range	T_{stg}	-65 to +175	°C
Operating Junction Temperature	T_j	+175	°C

These ratings are limiting values above which the serviceability of the diode may be impaired.

Electrical Characteristics

T_A = 25°C unless otherwise noted

Device Type	V_Z @ I_{ZT} (Volts) Nominal	I_{ZT} (mA)	Z_{ZT} @ I_{ZT} (Ω) Max	I_R @ V_R (µA) Max	V_R (Volts)
ZMM2V0	2.0	5	100	120	0.5
ZMM2V2	2.2	5	100	120	0.7
ZMM2V4	2.4	5	100	120	1
ZMM2V7	2.7	5	110	100	1
ZMM3V0	3.0	5	120	50	1
ZMM3V3	3.3	5	120	20	1
ZMM3V6	3.6	5	100	10	1
ZMM3V9	3.9	5	100	5	1
ZMM4V3	4.3	5	100	5	1
ZMM4V7	4.7	5	80	5	1
ZMM5V1	5.1	5	80	5	1.5
ZMM5V6	5.6	5	60	5	2.5
ZMM6V2	6.2	5	60	5	3
ZMM6V8	6.8	5	20	2	3.5
ZMM7V5	7.5	5	20	0.5	4
ZMM8V2	8.2	5	20	0.5	5
ZMM9V1	9.1	5	25	0.5	6
ZMM10	10	5	30	0.2	7
ZMM11	11	5	30	0.2	8
ZMM12	12	5	30	0.2	9

Electrical Characteristics

T_A = 25°C unless otherwise noted

Device Type	V_Z @ I_{ZT} (Volts) Nominal	I_{ZT} (mA)	Z_{ZT} @ I_{ZT} (Ω) Max	I_R @ V_R (µA) Max	V_R (Volts)
ZMM13	13	5	35	0.2	10
ZMM15	15	5	40	0.2	11
ZMM16	16	5	40	0.2	12
ZMM18	18	5	45	0.2	13
ZMM20	20	5	45	0.2	15
ZMM22	22	5	30	0.2	17
ZMM24	24	5	35	0.2	19
ZMM27	27	2	45	0.2	21
ZMM30	30	2	55	0.2	23
ZMM33	33	2	65	0.2	25
ZMM36	36	2	75	0.2	27
ZMM39	39	2	85	0.2	30
ZMM43	43	2	90	0.2	33
ZMM47	47	2	90	0.2	36
ZMM51	51	2	110	0.2	39
ZMM56	56	2	110	0.2	43
ZMM62	62	2	201	0.2	47
ZMM68	68	2	230	0.2	51
ZMM75	75	2	240	0.2	56

V_F Forward Voltage = 1.2 V Maximum @ I_F = 200 mA for all types

Notes:

1. The type numbers listed have zener voltage min/max limits as shown and have a standard tolerance on the nominal zener voltage of 5%.
2. The zener impedance is derived from the 60-cycle ac voltage, which results when an ac current having an rms value equal to 10% of the dc zener current (I_{ZT} or I_{ZK}) is superimposed to I_{ZT} or I_{ZK}.

Typical Characteristics

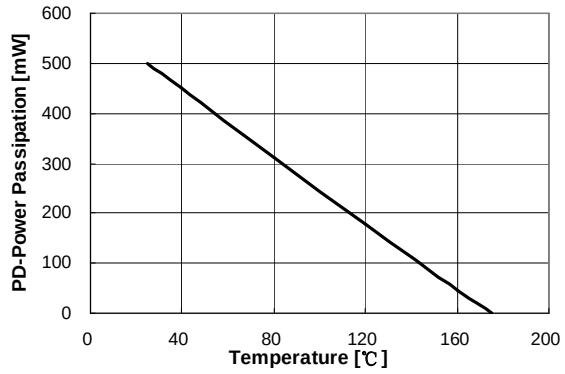


Figure 1. Power Dissipation vs Ambient Temperature
Valid provided leads at a distance of 0.8mm from case are kept at ambient temperature

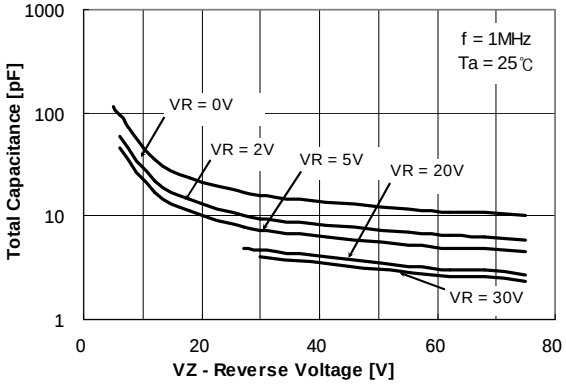


Figure 2. Total Capacitance

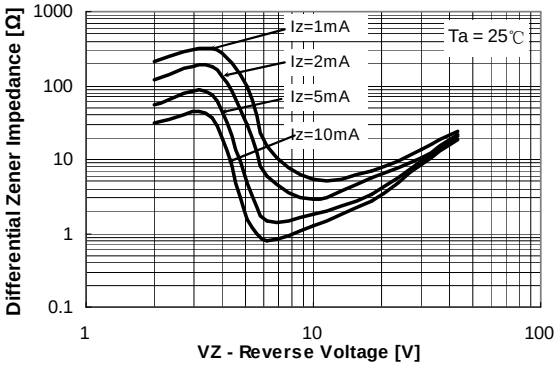


Figure 3. Differential Impedance vs. Zener Voltage

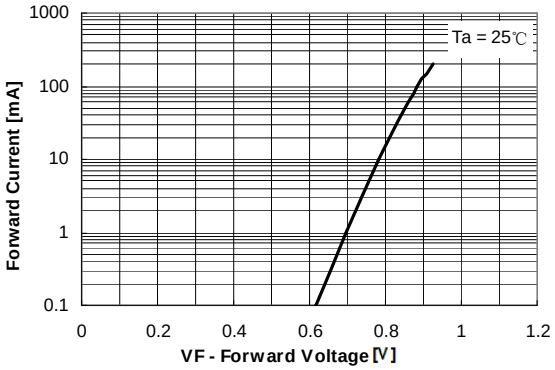


Figure 4. Forward Current vs. Forward Voltage

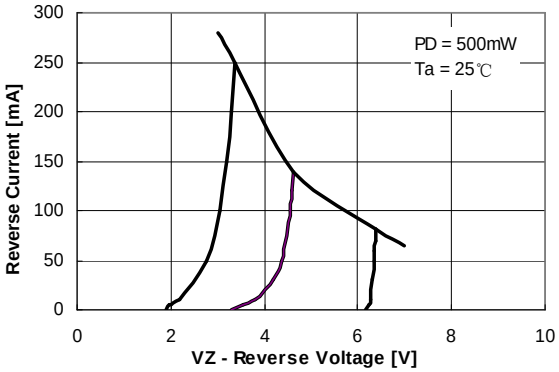


Figure 5. Reverse Current vs. Reverse Voltage

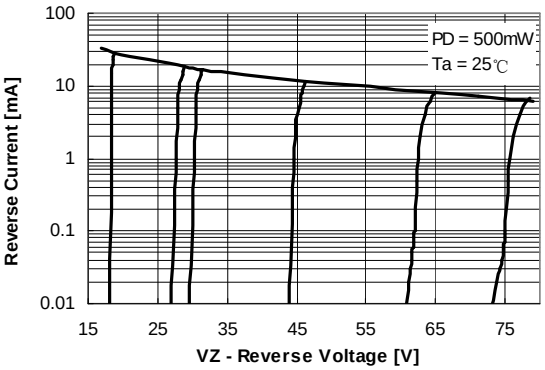
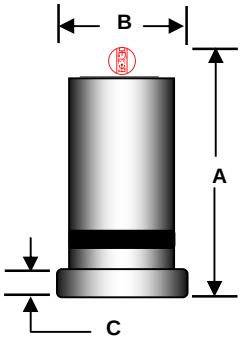


Figure 6. Reverse Current vs. Reverse Voltage

Package Outline

Package	Case Outline
LL34	

DIM	LL-34			
	Millimeters		Inches	
	Min	Max	Min	Max
A	3.30	3.60	0.130	0.142
B	1.40	1.50	0.055	0.059
C	0.35	0.50	0.014	0.020

Notes:

1. All dimensions are within DO213AC JEDEC standard.
2. LL-34 polarity denoted by cathode band.