FEATURES

- Planar Die Construction
- 500mW Power Dissipation on Ceramic PCB
- General Purpose, Medium Current
- Ideally Suited for Automated Assembly Processes
- Available in Lead Free Version

LL34

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS (T_A=25°C)

Parameter	Symbol	Value	Unit
Forward Voltage at @ I_F= 100mA	V_F	1	V
Power Dissipation	P_{tot}	500[1)]	mW
Thermal Resistance Junction to Ambient Air	R_{thA}	0.3[1)]	K/mW
Junction Temperature	T_J	175	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C

Notes:
1. Valid provided that electrodes are kept at ambient temperature

ELECTRICAL CHARACTERISTICS

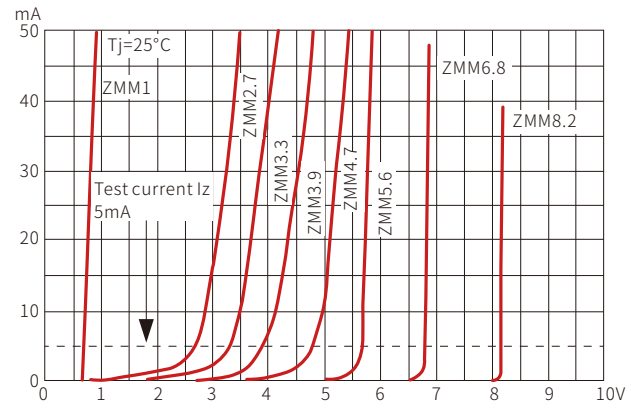
Part Number	Zener Voltage Range				Dynamic Resistance			Reverse Leakage Current			Temp. Coefficient of Zener Voltage	
	$V_Z@I_{ZT}$			I_{ZT}(mA)	$Z_{ZT}@I_{ZT}$	$Z_{ZK}@I_{ZK}$	I_{ZK}(mA)	Ta=25°C	Ta=125°C	at V_R	TKvz (%/K)	
	Nom.(V)	Min.(V)	Max.(V)	mA	Max.(Ω)	Max.(Ω)	mA	Max.(uA)	Max.(uA)	(V)	Min.	Max.
ZMM1[2]	0.75	0.7	0.8	5	8	50	1	-	-	-	-0.26	-0.23
ZMM2V0	2.0	1.8	2.15	5	85	600	1	100	200	1	-0.09	-0.06
ZMM2V2	2.2	2.08	2.33	5	85	600	1	75	160	1	-0.09	-0.06
ZMM2V4	2.4	2.28	2.56	5	85	600	1	50	100	1	-0.09	-0.06
ZMM2V7	2.7	2.5	2.9	5	85	600	1	10	50	1	-0.09	-0.06
ZMM3V0	3.0	2.8	3.2	5	85	600	1	4	40	1	-0.08	-0.05
ZMM3V3	3.3	3.1	3.5	5	85	600	1	2	40	1	-0.08	-0.05
ZMM3V6	3.6	3.4	3.8	5	85	600	1	2	40	1	-0.08	-0.05
ZMM3V9	3.9	3.7	4.1	5	85	600	1	2	40	1	-0.08	-0.05
ZMM4V3	4.3	4.0	4.6	5	75	600	1	1	20	1	-0.06	-0.03
ZMM4V7	4.7	4.4	5.0	5	60	600	1	0.5	10	1	-0.05	+0.02
ZMM5V1	5.1	4.8	5.4	5	35	550	1	0.1	2	1	-0.02	+0.02
ZMM5V6	5.6	5.2	6.0	5	25	450	1	0.1	2	1	-0.05	+0.05
ZMM6V2	6.2	5.8	6.6	5	10	200	1	0.1	2	2	0.03	0.06
ZMM6V8	6.8	6.4	7.2	5	8	150	1	0.1	2	3	0.03	0.07
ZMM7V5	7.5	7.0	7.9	5	7	50	1	0.1	2	5	0.03	0.07
ZMM8V2	8.2	7.7	8.7	5	7	50	1	0.1	2	6.2	0.03	0.08
ZMM9V1	9.1	8.5	9.6	5	10	50	1	0.1	2	6.8	0.03	0.09
ZMM10	10	9.4	10.6	5	15	70	1	0.1	2	7.5	0.03	0.10
ZMM11	11	10.4	11.6	5	20	70	1	0.1	2	8.2	0.03	0.11
ZMM12	12	11.4	12.7	5	20	90	1	0.1	2	9.1	0.03	0.11
ZMM13	13	12.4	14.1	5	26	110	1	0.1	2	10	0.03	0.11
ZMM15	15	13.8	15.6	5	30	110	1	0.1	2	11	0.03	0.11
ZMM16	16	15.3	17.1	5	40	170	1	0.1	2	12	0.03	0.11
ZMM18	18	16.8	19.1	5	50	170	1	0.1	2	13	0.03	0.11
ZMM20	20	18.8	21.2	5	55	220	1	0.1	2	15	0.03	0.11
ZMM22	22	20.8	23.3	5	55	220	1	0.1	2	16	0.04	0.12
ZMM24	24	22.8	25.6	5	80	220	1	0.1	2	18	0.04	0.12
ZMM27	27	25.1	28.9	5	80	220	1	0.1	2	20	0.04	0.12
ZMM30	30	28.0	32.0	5	80	220	1	0.1	2	22	0.04	0.12
ZMM33	33	31.0	35.0	5	80	220	1	0.1	2	24	0.04	0.12
ZMM36	36	34.0	38.0	5	80	220	1	0.1	2	27	0.04	0.12
ZMM39	39	37.0	41.0	2.5	90	500	0.5	0.1	5	30	0.04	0.12

Part Number	Zener Voltage Range				Dynamic Resistance			Reverse Leakage Current			Temp. Coefficient of Zener Voltage	
	V_z@I_{ZT}			I_{ZT}(mA)	Z_{ZT}@I_{ZT}	Z_{ZK}@I_{ZK}	I_{ZK}(mA)	Ta=25°C	Ta=125°C	at V_R	TKvz (%/K)	
	Nom.(V)	Min.(V)	Max.(V)	mA	Max.(Ω)	Max.(Ω)	mA	Max.(uA)	Max.(uA)	(V)	Min.	Max.
ZMM43	43	40.0	46.0	2.5	90	500	0.5	0.1	5	33	0.04	0.12
ZMM47	47	44.0	50.0	2.5	110	600	0.5	0.1	5	36	0.04	0.12
ZMM51	51	48.0	54.0	2.5	125	700	0.5	0.1	10	39	0.04	0.12
ZMM56	56	52.0	60.0	2.5	135	700	0.5	0.1	10	43	0.04	0.12
ZMM62	62	58.0	66.0	2.5	150	1000	0.5	0.1	10	47	0.04	0.12
ZMM68	68	64.0	72.0	2.5	200	1000	0.5	0.1	10	51	0.04	0.12
ZMM75	75	70.0	79.0	2.5	250	1000	0.5	0.1	10	56	0.04	0.12

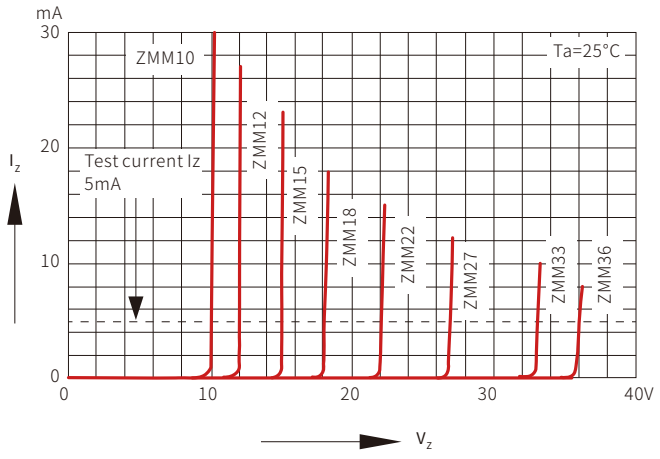
Note:
1) Tested with pulses tp = 20 ms.
2) The ZMM1 is a silicon diode with operation in forward direction. Hence, the index of all parameters should be "F" instead of "Z". Connect the cathode electrode to the negative pole.

CHARACTERISTIC CURVES

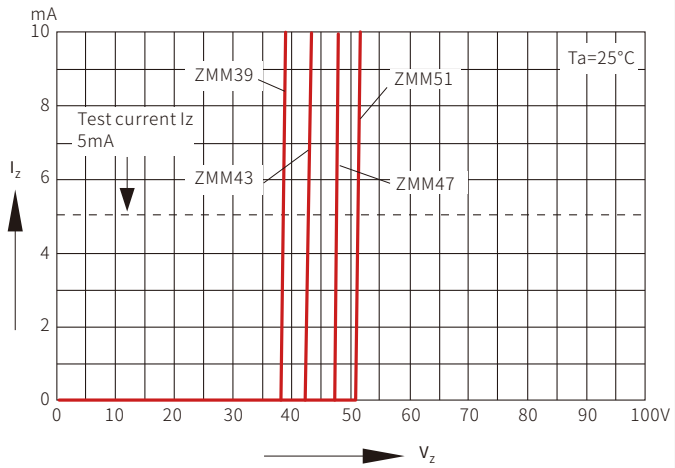
Breakdown characteristics



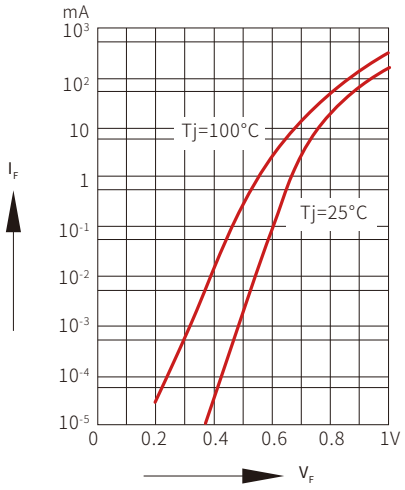
Breakdown characteristics



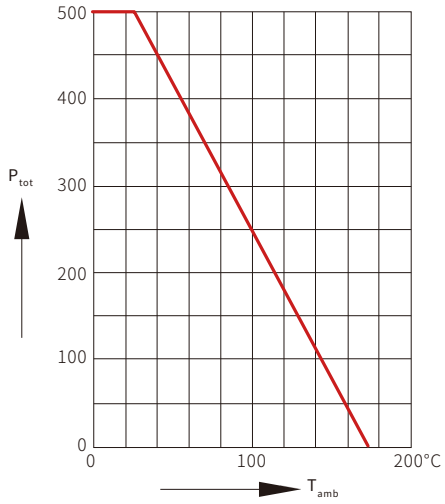
Breakdown characteristics



Forward characteristics

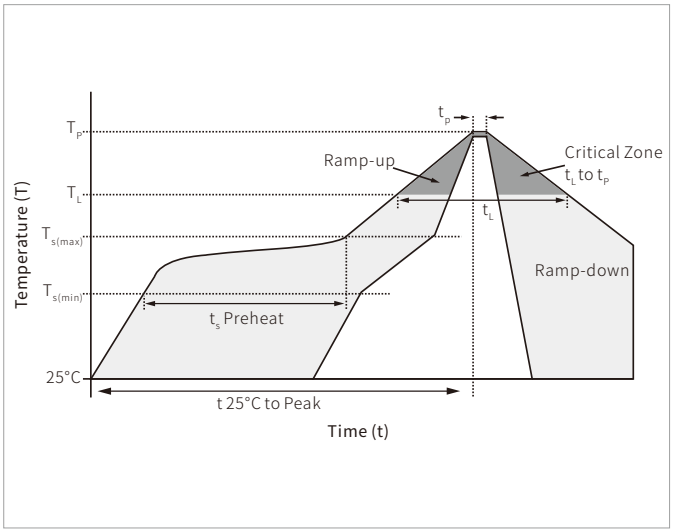


Admissible power dissipation versus ambient temperature Valid provided that electrodes are kept at ambient temperature

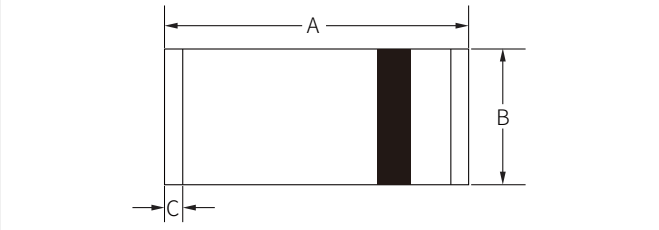


SOLDERING PARAMETERS

Reflow Condition		Lead–free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		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_L)	60 – 150 seconds
Peak Temperature (T_P)		260°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



LL34 PACKAGE INFORMATION



Ref.	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	0.25	0.33	0.010	0.013

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
ZMM2V4 - ZMM75	LL34	2500PCS	7”

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