

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 _{θJA}	0.3 ¹⁾	°C/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

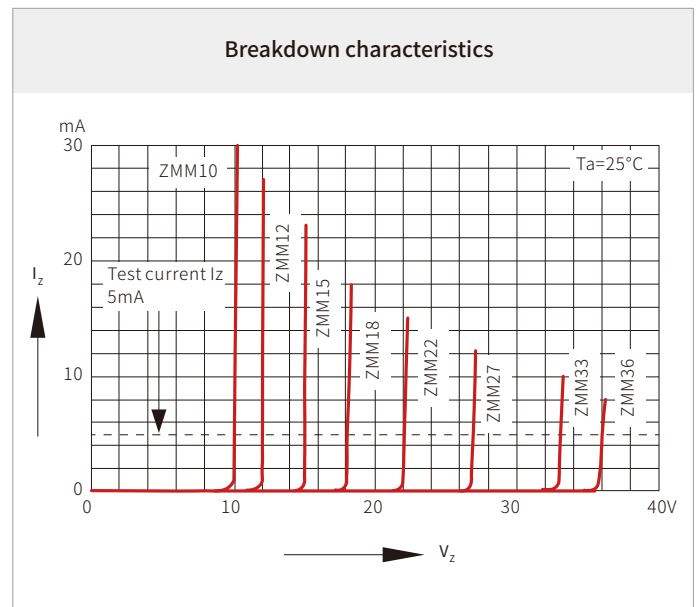
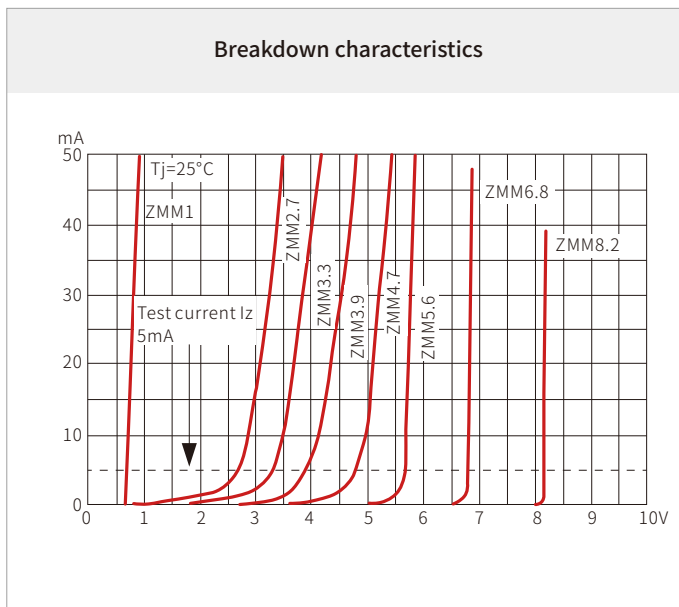
Part Number	Zener Voltage Range			Dynamic Resistance			Reverse Leakage Current			Temp. Coefficient of Zener Voltage		
	$V_z@I_{ZT}$			I_{ZT} (mA)	$Z_{ZT}@I_{ZT}$	$Z_{ZK}@I_{ZK}$	I_{ZK} (mA)	Ta=25°C	Ta=125°C	at V_R	TKvz (%/K)	
	Nom.(V)	Min.(V)	Max.(V)	mA	Max.(Ω)	Max.(Ω)	mA	Max.(uA)	Max.(uA)	(V)	Min.	Max.
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:

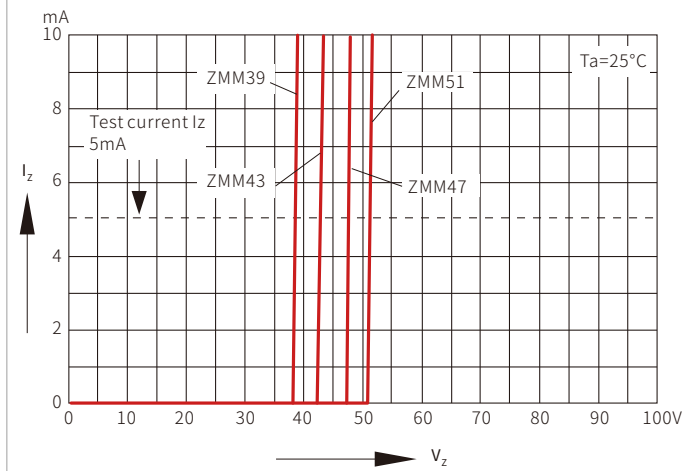
1) Tested with pulses $t_p = 20$ ms.

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.

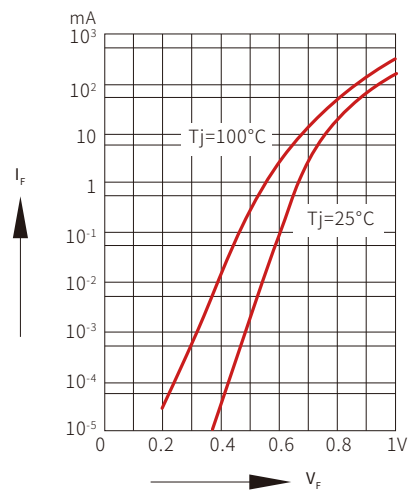
CHARACTERISTIC CURVES



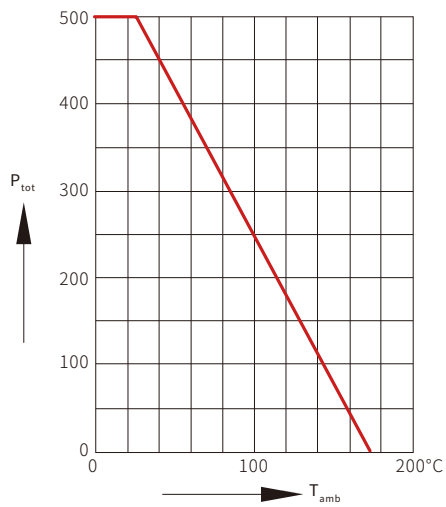
Breakdown characteristics



Forward characteristics

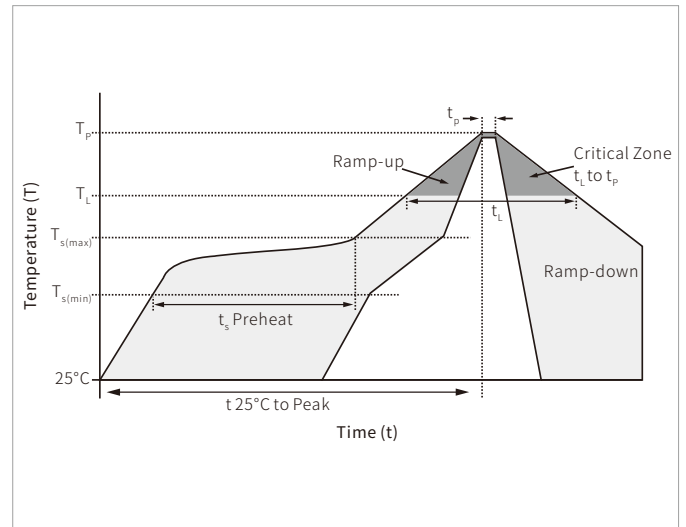


Admissible power dissipation versus ambient temperature
Valid provided that electrodes are kept at ambient temperature

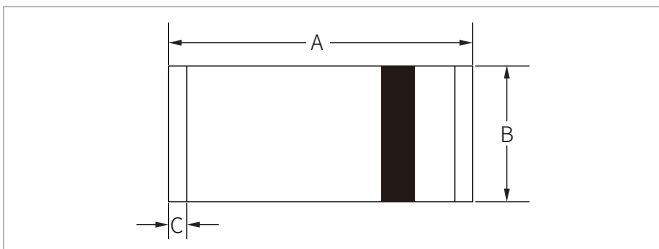


SOLDERING PARAMETERS

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"

Headquarters

No.3387 Shendu Road
Pujiang I&E Park
Minhang Shanghai China
201000

Hotline

400-021-5756

Web

<https://www.semiware.com>

Sales Center

Tel: 86-21-3463-7458
Email: sales18@semiware.com

Customer Service

Tel: 86-21-5484-1001
Email: sales17@semiware.com

Technical Support

Tel: 86-21-3463-7654
Email: fae01@semiware.com

Complaint & Suggestions

Tel: 86-21-3463-7172
Ext: 8868
Email: cs03@semiware.com

By QR Code

Website



Wechat

To find your local partner within Semiware' s global website: www.semiware.com

© 2022 Semiware Semiconductor Inc.

The content of this document has been carefully checked and understood. However, neither Semiware nor its subsidiaries assume any liability whatsoever for any errors or inaccuracies of this document and the consequences thereof. Published specifications are subject to change without notice. Product suitability for any area of application must ultimately be determined by the customer. In all cases, products must never be operated outside their published specifications. Semiware does not guarantee the availability of all published products. This disclaimer shall be governed by substantive Chinese law and resulting disputes shall be settled by the courts at the place of business of Semiware. Latest publications and a complete disclaimer can be downloaded from the Semiware website. All trademarks recognized.