

# MSKSEMI 美森科

SEMICONDUCTOR



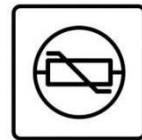
ESD



TVS



TSS



MOV



GDT

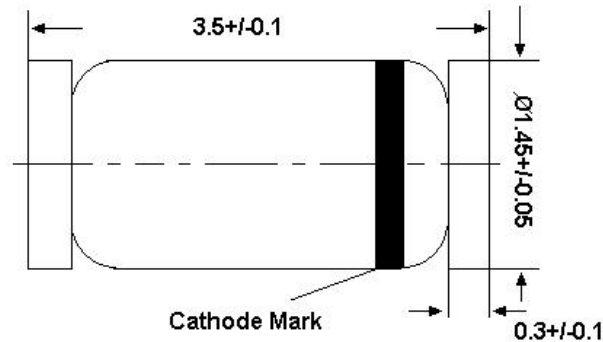


PLED

## ZMM5221-ZMM5267

### Product specification

Standard zener voltage tolerance is  $\pm 20\%$ . Add suffix "A" for  $\pm 10\%$  tolerance, suffix "B" for  $\pm 5\%$  tolerance and suffix "C" for  $\pm 2\%$  tolerance. Other tolerance, non standard and higher zener voltages are upon request.



**Glass case MiniMELF**  
**Dimensions in mm**  
**LL-34**

## REEL SPECIFICATION

P/N	PKG	QTY
ZMM5221-ZMM5267	LL-34	2500

## Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Value	Unit
Power Dissipation	$P_{\text{tot}}$	500 <sup>1)</sup>	mW
Junction Temperature	$T_j$	175	$^\circ\text{C}$
Storage Temperature Range	$T_{\text{stg}}$	- 65 to + 175	$^\circ\text{C}$

1) Valid provided that electrodes are kept at ambient temperature.

## Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Max.	Unit
Thermal Resistance Junction to Ambient Air	$R_{\text{thA}}$	0.3 <sup>1)</sup>	K/mW
Forward Voltage at $I_F = 200$ mA	$V_F$	1.1	V

1) Valid provided that electrodes are kept at ambient temperature.

**Characteristics at Ta = 25°C**

Type	Zener Voltage Range <sup>1)</sup>				Dynamic Resistance			Reverse Current	
	V <sub>Znom</sub>	V <sub>ZT</sub>		at I <sub>ZT</sub>	Z <sub>ZT</sub>	Z <sub>ZK</sub>	at I <sub>ZK</sub>	I <sub>R</sub>	at V <sub>R</sub>
	(V)	Min. (V)	Max. (V)	(mA)	Max. (Ω)	Max. (Ω)	(mA)	Max. (μA)	(V)
ZMM5221B	2.4	2.28	2.52	20	30	1200	0.25	100	1
ZMM5222B	2.5	2.38	2.62	20	30	1250	0.25	100	1
ZMM5223B	2.7	2.57	2.83	20	30	1300	0.25	75	1
ZMM5224B	2.8	2.66	2.94	20	30	1400	0.25	75	1
ZMM5225B	3	2.85	3.15	20	29	1600	0.25	50	1
ZMM5226B	3.3	3.14	3.46	20	28	1600	0.25	25	1
ZMM5227B	3.6	3.42	3.78	20	24	1700	0.25	15	1
ZMM5228B	3.9	3.71	4.09	20	23	1900	0.25	10	1
ZMM5229B	4.3	4.09	4.51	20	22	2000	0.25	5	1
ZMM5230B	4.7	4.47	4.93	20	19	1900	0.25	5	2
ZMM5231B	5.1	4.85	5.35	20	17	1600	0.25	5	2
ZMM5232B	5.6	5.32	5.88	20	11	1600	0.25	5	3
ZMM5233B	6	5.7	6.3	20	7	1600	0.25	5	3.5
ZMM5234B	6.2	5.89	6.51	20	7	1000	0.25	5	4
ZMM5235B	6.8	6.46	7.14	20	5	750	0.25	3	5
ZMM5236B	7.5	7.13	7.87	20	6	500	0.25	3	6
ZMM5237B	8.2	7.79	8.61	20	8	500	0.25	3	6.5
ZMM5238B	8.7	8.27	9.13	20	8	600	0.25	3	6.5
ZMM5239B	9.1	8.65	9.55	20	10	600	0.25	3	7
ZMM5240B	10	9.5	10.5	20	17	600	0.25	3	8
ZMM5241B	11	10.45	11.55	20	22	600	0.25	2	8.4
ZMM5242B	12	11.4	12.6	20	30	600	0.25	1	9.1
ZMM5243B	13	12.35	13.65	9.5	13	600	0.25	0.5	9.9
ZMM5244B	14	13.3	14.7	9	15	600	0.25	0.1	10
ZMM5245B	15	14.25	15.75	8.5	16	600	0.25	0.1	11
ZMM5246B	16	15.2	16.8	7.8	17	600	0.25	0.1	12
ZMM5247B	17	16.15	17.85	7.4	19	600	0.25	0.1	13
ZMM5248B	18	17.1	18.9	7.0	21	600	0.25	0.1	14
ZMM5249B	19	18.05	19.95	6.6	23	600	0.25	0.1	14
ZMM5250B	20	19	21	6.2	25	600	0.25	0.1	15
ZMM5251B	22	20.9	23.1	5.6	29	600	0.25	0.1	17
ZMM5252B	24	22.8	25.2	5.2	33	600	0.25	0.1	18
ZMM5253B	25	23.75	26.25	5	35	600	0.25	0.1	19
ZMM5254B	27	25.65	28.35	4.6	41	600	0.25	0.1	21
ZMM5255B	28	26.6	29.4	4.4	44	600	0.25	0.1	21
ZMM5256B	30	28.5	31.5	4.2	49	600	0.25	0.1	23
ZMM5257B	33	31.35	34.65	3.8	58	700	0.25	0.1	25
ZMM5258B	36	34.2	37.8	3.4	70	700	0.25	0.1	27
ZMM5259B	39	37.05	40.95	3.2	80	800	0.25	0.1	30
ZMM5260B	43	40.85	45.15	3	93	900	0.25	0.1	33
ZMM5261B	47	44.65	49.35	2.7	105	1000	0.25	0.1	36
ZMM5262B	51	48.45	53.55	2.5	125	1100	0.25	0.1	39
ZMM5263B	56	53.2	58.8	2.2	150	1300	0.25	0.1	45
ZMM5264B	60	57	63	2.1	170	1400	0.25	0.1	46
ZMM5265B	62	58.9	65.1	2	185	1400	0.25	0.1	47
ZMM5266B	68	64.6	71.4	1.8	230	1600	0.25	0.1	52
ZMM5267B	75	71.25	78.75	1.7	270	1700	0.25	0.1	56

 1) Tested with pulsest<sub>p</sub> = 20 ms.

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