

# ZMC...SB Series

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## Silicon Epitaxial Planar Zener Diodes

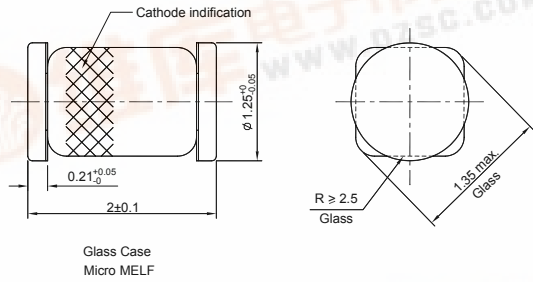
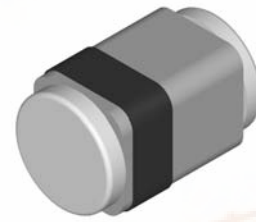
### Features

- Sharp breakdown characteristic.
- Fits onto SOD-323 / SOT-23 footprints
- MicroMELF package

### Applications

- Circuits for constant voltage, constant current wave form clipper, surge absorber, etc.

LS-31



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

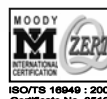
Parameter	Symbol	Value	Unit
Power Dissipation	$P_{\text{tot}}$	500	mW
Forward Current	$I_F$	100	mA
Reverse Surge Power (at $t = 10 \mu\text{s} / 1 \text{ pulse}$ )	$P_{\text{RSM}}$	85	W
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{\text{stg}}$	- 55 to + 150	$^\circ\text{C}$

### Characteristics at $T_a = 25^\circ\text{C}$ ( $V_F = 1 \text{ V Max. at } I_F = 100 \text{ mA}$ )

Type	Zener Voltage <sup>1)</sup>			Dynamic Resistance		Reverse Leakage Current	
	$V_Z$		at $I_{ZT}$	$Z_{ZT}$	at $I_{ZT}$	$I_R$	at $V_R$
	Min. (V)	Max. (V)	(mA)	Max. ( $\Omega$ )	(mA)	Max. ( $\mu\text{A}$ )	(V)
ZMC2V0SB	1.8	2.15	5	100	5	120	0.5
ZMC2V2SB	2.1	2.4	5	100	5	120	0.7
ZMC2V4SB	2.3	2.6	5	100	5	120	1
ZMC2V7SB	2.5	2.9	5	110	5	120	1
ZMC2V7SB1	2.5	2.75	5	110	5	120	1
ZMC2V7SB2	2.65	2.9	5	110	5	120	1
ZMC3V0SB	2.8	3.2	5	120	5	50	1
ZMC3V0SB1	2.8	3.05	5	120	5	50	1
ZMC3V0SB2	2.95	3.2	5	120	5	50	1
ZMC3V3SB	3.1	3.5	5	130	5	20	1
ZMC3V3SB1	3.1	3.35	5	130	5	20	1
ZMC3V3SB2	3.25	3.5	5	130	5	20	1
ZMC3V6SB	3.4	3.8	5	130	5	10	1
ZMC3V6SB1	3.4	3.65	5	130	5	10	1
ZMC3V6SB2	3.55	3.8	5	130	5	10	1

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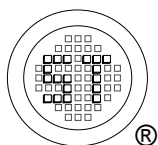


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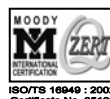
Characteristics at  $T_a = 25\text{ }^\circ\text{C}$  ( $V_F = 1\text{ V Max.}$  at  $I_F = 100\text{ mA}$ )

Type	Zener Voltage <sup>1)</sup>			Dynamic Resistance		Reverse Leakage Current	
	$V_Z$		at $I_{ZT}$	$Z_{ZT}$	at $I_{ZT}$	$I_R$	at $V_R$
	Min. (V)	Max. (V)	(mA)	Max. ( $\Omega$ )	(mA)	Max. ( $\mu\text{A}$ )	(V)
ZMC3V9SB	3.7	4.1	5	130	5	10	1
ZMC3V9SB1	3.7	3.97	5	130	5	10	1
ZMC3V9SB2	3.87	4.1	5	130	5	10	1
ZMC4V3SB	4	4.49	5	130	5	10	1
ZMC4V3SB1	4	4.22	5	130	5	10	1
ZMC4V3SB2	4.14	4.35	5	130	5	10	1
ZMC4V3SB3	4.27	4.49	5	130	5	10	1
ZMC4V7SB	4.4	4.92	5	130	5	10	1
ZMC4V7SB1	4.4	4.63	5	130	5	10	1
ZMC4V7SB2	4.53	4.77	5	130	5	10	1
ZMC4V7SB3	4.67	4.92	5	130	5	10	1
ZMC5V1SB	4.82	5.39	5	130	5	5	1.5
ZMC5V1SB1	4.82	5.06	5	130	5	5	1.5
ZMC5V1SB2	4.96	5.22	5	130	5	5	1.5
ZMC5V1SB3	5.12	5.39	5	130	5	5	1.5
ZMC5V6SB	5.29	5.94	5	80	5	5	2.5
ZMC5V6SB1	5.29	5.57	5	80	5	5	2.5
ZMC5V6SB2	5.47	5.75	5	80	5	5	2.5
ZMC5V6SB3	5.65	5.94	5	80	5	5	2.5
ZMC6V2SB	5.84	6.55	5	50	5	2	3
ZMC6V2SB1	5.84	6.14	5	50	5	2	3
ZMC6V2SB2	6.04	6.35	5	50	5	2	3
ZMC6V2SB3	6.24	6.55	5	50	5	2	3
ZMC6V8SB	6.44	7.17	5	30	5	2	3.5
ZMC6V8SB1	6.44	6.76	5	30	5	2	3.5
ZMC6V8SB2	6.62	6.96	5	30	5	2	3.5
ZMC6V8SB3	6.83	7.17	5	30	5	2	3.5
ZMC7V5SB	7.03	7.87	5	30	5	2	4
ZMC7V5SB1	7.03	7.39	5	30	5	2	4
ZMC7V5SB2	7.25	7.63	5	30	5	2	4
ZMC7V5SB3	7.49	7.87	5	30	5	2	4
ZMC8V2SB	7.73	8.67	5	30	5	2	5
ZMC8V2SB1	7.73	8.13	5	30	5	2	5
ZMC8V2SB2	7.98	8.39	5	30	5	2	5
ZMC8V2SB3	8.25	8.67	5	30	5	2	5
ZMC9V1SB	8.53	9.58	5	30	5	2	6
ZMC9V1SB1	8.53	8.96	5	30	5	2	6
ZMC9V1SB2	8.81	9.26	5	30	5	2	6
ZMC9V1SB3	9.12	9.58	5	30	5	2	6
ZMC10SB	9.42	10.58	5	30	5	2	7
ZMC10SB1	9.42	9.9	5	30	5	2	7
ZMC10SB2	9.74	10.24	5	30	5	2	7
ZMC10SB3	10.08	10.58	5	30	5	2	7
ZMC11SB	10.4	11.6	5	30	5	2	8
ZMC11SB1	10.4	10.92	5	30	5	2	8



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Dated : 18/07/2009

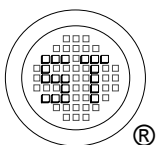
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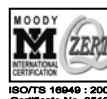
Type	Zener Voltage <sup>1)</sup>			Dynamic Resistance		Reverse Leakage Current	
	$V_Z$		at $I_{ZT}$	$Z_{ZT}$	at $I_{ZT}$	$I_R$	at $V_R$
	Min. (V)	Max. (V)	(mA)	Max. ( $\Omega$ )	(mA)	Max. ( $\mu\text{A}$ )	(V)
ZMC11SB2	10.72	11.26	5	30	5	2	8
ZMC11SB3	11.06	11.6	5	30	5	2	8
ZMC12SB	11.38	12.64	5	35	5	2	9
ZMC12SB1	11.38	11.94	5	35	5	2	9
ZMC12SB2	11.69	12.28	5	35	5	2	9
ZMC12SB3	12.04	12.64	5	35	5	2	9
ZMC13SB	12.43	14	5	35	5	2	10
ZMC15SB	13.8	15.56	5	40	5	2	11
ZMC16SB	15.31	17.14	5	40	5	2	12
ZMC18SB	16.89	19.08	5	45	5	2	13
ZMC20SB	18.8	21.14	5	50	5	2	15
ZMC22SB	20.81	23.25	5	55	5	2	17
ZMC24SB	22.86	25.66	5	60	5	2	19
ZMC27SB	25.1	28.9	2	70	2	2	21
ZMC30SB	28	32	2	80	2	2	23
ZMC33SB	31	35	2	80	2	2	25
ZMC36SB	34	38	2	90	2	2	27
ZMC39SB	37	41	2	100	2	2	30
ZMC43SB	40	45	2	130	2	2	33
ZMC47SB	44	49	2	150	2	2	36
ZMC51SB	48	54	2	180	2	1	39

<sup>1)</sup>  $V_Z$  is tested with pulse (20 ms).



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