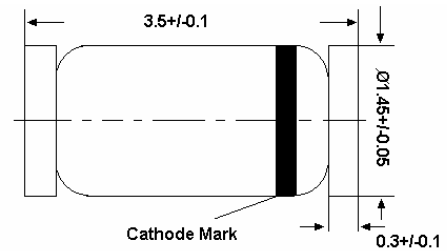


# ZMM...HC Series

## SILICON PLANAR ZENER DIODES



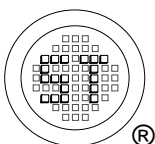
Glass case MiniMELF  
Dimensions in mm

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

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

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

Parameter	Symbol	Max.	Unit
Thermal Resistance Junction to Ambient Air	$R_{thA}$	0.3	K/mW



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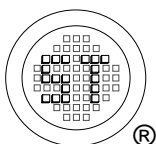
Dated : 08/05/2006

# ZMM...HC Series

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

Type	Zener Voltage <sup>1)</sup>			Dynamic Resistance		Reverse Leakage Current ( $I_R$ at $V_R$ )	
	Min. (V)	Max. (V)	$I_{ZT}$ (mA)	Ohm at $I_{ZT}$	$I_{ZT}$ (mA)	$I_R$ ( $\mu\text{A}$ ) Max.	$V_R$ (V)
ZMM2V2HC	2.09	2.41	20	120	20	120	0.7
ZMM2V2HCA	2.12	2.3					
ZMM2V2HCB	2.22	2.41					
ZMM2V4HC	2.3	2.64	20	120	20	120	1
ZMM2V4HCA	2.33	2.52					
ZMM2V4HCB	2.43	2.63					
ZMM2V7HC	2.5	2.9	20	100	20	100	1
ZMM2V7HCA	2.54	2.75					
ZMM2V7HCB	2.69	2.91					
ZMM3V0HC	2.8	3.2	20	80	20	50	1
ZMM3V0HCA	2.85	3.07					
ZMM3V0HCB	3.01	3.22					
ZMM3V3HC	3.1	3.5	20	70	20	20	1
ZMM3V3HCA	3.16	3.38					
ZMM3V3HCB	3.32	3.53					
ZMM3V6HC	3.4	3.8	20	60	20	10	1
ZMM3V6HCA	3.47	3.68					
ZMM3V6HCB	3.62	3.83					
ZMM3V9HC	3.7	4.1	20	50	20	5	1
ZMM3V9HCA	3.77	3.98					
ZMM3V9HCB	3.92	4.14					
ZMM4V3HC	4	4.5	20	40	20	5	1
ZMM4V3HCA	4.05	4.26					
ZMM4V3HCB	4.2	4.4					
ZMM4V3HCC	4.34	4.53					
ZMM4V7HC	4.4	4.9	20	25	20	5	1
ZMM4V7HCA	4.47	4.65					
ZMM4V7HCB	4.59	4.77					
ZMM4V7HCC	4.71	4.91					
ZMM5V1HC	4.8	5.4	20	20	20	5	1.5
ZMM5V1HCA	4.85	5.03					
ZMM5V1HCB	4.97	5.18					
ZMM5V1HCC	5.12	5.35					
ZMM5V6HC	5.3	6	20	13	20	5	2.5
ZMM5V6HCA	5.29	5.52					
ZMM5V6HCB	5.46	5.7					
ZMM5V6HCC	5.64	5.88					

<sup>1)</sup> Tested with pulse  $t_p = 20\text{ ms}$



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 ISO 9001:2000 Certificate No. 0506098

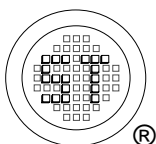
Dated : 08/05/2006

# ZMM...HC Series

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

Type	Zener Voltage <sup>1)</sup>			Dynamic Resistance		Reverse Leakage Current ( $I_R$ at $V_R$ )	
	Min. (V)	Max. (V)	$I_{ZT}$ (mA)	Ohm at $I_{ZT}$	$I_{ZT}$ (mA)	$I_R$ ( $\mu\text{A}$ ) Max.	$V_R$ (V)
ZMM6V2HC	5.8	6.6	20	10	20	5	3
ZMM6V2HCA	5.81	6.06					
ZMM6V2HCB	5.99	6.24					
ZMM6V2HCC	6.16	6.4					
ZMM6V8HC	6.4	7.2	20	8	20	2	3.5
ZMM6V8HCA	6.32	6.59					
ZMM6V8HCB	6.52	6.79					
ZMM6V8HCC	6.7	6.97					
ZMM7V5HC	7	7.9	20	8	20	0.5	4
ZMM7V5HCA	6.88	7.19					
ZMM7V5HCB	7.11	7.41					
ZMM7V5HCC	7.33	7.64					
ZMM8V2HC	7.7	8.7	20	8	20	0.5	5
ZMM8V2HCA	7.56	7.9					
ZMM8V2HCB	7.82	8.15					
ZMM8V2HCC	8.07	8.41					
ZMM9V1HC	8.5	9.6	20	8	20	0.5	6
ZMM9V1HCA	8.33	8.7					
ZMM9V1HCB	8.61	8.99					
ZMM9V1HCC	8.89	9.29					
ZMM10HC	9.4	10.9	20	8	20	0.2	7
ZMM10HCA	9.19	9.59					
ZMM10HCB	9.48	9.9					
ZMM10HCC	9.82	10.3					
ZMM11HC	10.4	11.6	10	10	10	0.2	8
ZMM11HCA	10.18	10.63					
ZMM11HCB	10.5	10.95					
ZMM11HCC	10.82	11.26					
ZMM12HC	11.4	12.6	10	12	10	0.2	9
ZMM12HCA	11.13	11.63					
ZMM12HCB	11.5	11.92					
ZMM12HCC	11.8	12.3					
ZMM13HC	12.4	14.1	10	14	10	0.2	10
ZMM13HCA	12.18	12.71					
ZMM13HCB	12.59	13.16					
ZMM13HCC	13.03	13.62					

<sup>1)</sup> Tested with pulse  $t_p = 20\text{ ms}$



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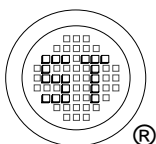
Dated : 08/05/2006

# ZMM...HC Series

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

Type	Zener Voltage <sup>1)</sup>			Dynamic Resistance		Reverse Leakage Current ( $I_R$ at $V_R$ )	
	Min. (V)	Max. (V)	$I_{ZT}$ (mA)	Ohm at $I_{ZT}$	$I_{ZT}$ (mA)	$I_R$ ( $\mu\text{A}$ ) Max.	$V_R$ (V)
ZMM15HC	13.8	15.6	10	16	10	0.2	11
ZMM15HCA	13.48	14.09					
ZMM15HCB	13.95	14.56					
ZMM15HCC	14.42	15.52					
ZMM16HC	15.3	17.1	10	18	10	0.2	12
ZMM16HCA	14.87	15.5					
ZMM16HCB	15.33	15.96					
ZMM16HCC	15.79	16.5					
ZMM18HC	16.8	19.1	10	23	10	0.2	13
ZMM18HCA	16.34	17.06					
ZMM18HCB	16.90	17.67					
ZMM18HCC	17.51	18.3					
ZMM20HC	18.8	21.6	10	28	10	0.2	15
ZMM20HCA	18.11	18.92					
ZMM20HCB	18.73	19.57					
ZMM20HCC	19.38	20.22					
ZMM20HCD	19.88	20.72					
ZMM22HC	20.8	23.3	5	30	5	0.2	17
ZMM22HCA	20.23	21.08					
ZMM22HCB	20.76	21.65					
ZMM22HCC	21.22	22.09					
ZMM22HCD	21.68	22.61					
ZMM24HC	21.8	25.6	5	35	5	0.2	19
ZMM24HCA	22.26	23.12					
ZMM24HCB	22.75	23.73					
ZMM24HCC	23.29	24.27					
ZMM24HCD	23.81	24.81					
ZMM27HC	25.1	28.9	5	45	5	0.2	21
ZMM27HCA	24.26	25.52					
ZMM27HCB	24.97	26.26					
ZMM27HCC	25.63	26.95					
ZMM27HCD	26.29	27.64					
ZMM30HC	28	32	5	55	5	0.2	23
ZMM30HCA	26.99	28.39					
ZMM30HCB	27.7	29.13					
ZMM30HCC	28.36	29.82					
ZMM30HCD	29.02	30.51					
ZMM33HC	31	35	5	65	5	0.2	25
ZMM33HCA	29.68	31.22					
ZMM33HCB	30.32	31.88					
ZMM33HCC	30.9	32.5					
ZMM33HCD	31.49	33.11					

<sup>1)</sup> Tested with pulse  $t_p = 20\text{ ms}$



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