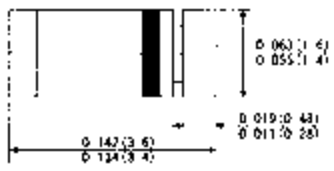
ZMM1 THRU ZMM200

0.5W SILICON PLANAR ZENER DIODES

FEATURES

. In MiniMELF case especially for automated insertion
The zener voltage are graded according to the international E24 standed. Smaller voltage tolerances and higher zener voltage on request

Mini-MELF



Dimensions in inches and (millimeters)

MECHANICAL DATA

. **Case:** Mini-MELF(SOD-80) glass case
. **weight:** Approx. 0.05 gram

ABSOLUTE MAXIMUM RATINGS(LIMITING VALUES)(TA=25℃)

	Symbols	Value	Units
Zener current see table "Characteristics"			
Power dissipation at TA=25℃	Ptot	500 1)	mW
Junction temperature	TJ	175	℃
Storage temperature range	TSTG	-55 to +175	℃
1)Valid provided that a distance of 8mm from case are kept at ambient temperature			

ELECTRCAL CHARACTERISTICS(TA=25℃)

	Symbols	Min	Typ	Max	Units
Thermal resistance junction to ambient	R θA			300 1)	K/W
1) Valid provided that a distance at 8mm from case are kept at ambient temperature					

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Type	Zener Voltage range 1)			Dynamic resistance 1)			Maximum reverse Leakage Current			of zener voltage
	V_{znom} 3)	I_{ZT}		r_{zjt} and r_{zjk} at I_{ZK}			I_R and I_R at V_R 2)			TK_{VZ}
	v	mA	V	Ω	Ω	mA	μA	μA	V	%/K
ZMM1 3)	0.75		0.7..0.8	<8	<50		--	--	--	-0.26..-0.23
ZMM2.0	2.0		1.9..2.1				<100	<200		-0.09..-0.06
ZMM2.4	2.4		2.28..2.56				<50	<100		-0.09..-0.06
ZMM2.7	2.7		2.5..2.9				<10	<50		-0.09..-0.06
ZMM3.0	3.0		2.8..3.2	<85			<4			-0.08..-0.05
ZMM3.3	3.3		3.1..3.5		<600		<2	<40		-0.08..-0.05
ZMM3.6	3.6		3.4..3.8				<2		1	-0.08..-0.05
ZMM3.9	3.9		3.7..4.1				<2			-0.08..-0.05
ZMM4.3	4.3		4.0..4.6	<75			<1	<20		-0.06..-0.03
ZMM4.7	4.7		4.4..5.0	<60			<0.5	<10		-0.05..+0.05
ZMM5.1	5.1		4.8..5.4	<35	<550					-0.02..+0.02
ZMM5.6	5.6		5.2..6.0	<25	<450					-0.05..+0.05
ZMM6.2	6.2		5.8..6.6	<10	<200				2	0.03..0.06
ZMM6.8	6.8		6.4..7.2	<8	<150				3	0.03..0.07
ZMM7.5	7.5		7.0..7.9	<7					5	0.03..0.08
ZMM8.2	8.2	5	7.7..8.7	<7	<50	1			6.2	0.03..0.09
ZMM9.1	9.1		8.5..9.6	<10					6.8	0.03..0.1
ZMM10	10		9.4..10.6	<15	<70				7.5	0.03..0.11
ZMM11	11		10.4..11.6	<20	<70				8.2	0.03..0.11
ZMM12	12		11.4..12.7	<20	<90				9.1	0.03..0.11
ZMM13	13		12.4..14.1	<26	<110			<2	10	0.03..0.11
ZMM15	15		13.8..15.6	<30	<110				11	0.03..0.11
ZMM16	16		15.3..17.1	<40	<170				12	0.03..0.11
ZMM18	18		16.8..19.1	<50	<170				13	0.03..0.11
ZMM20	20		18.8..21.2	<55					15	0.03..0.11
ZMM22	22		20.8..23.3	<55					16	
ZMM24	24		22.8..25.6						18	
ZMM27	27		25.1..28.9		<220				20	
ZMM30	30		28..32	<80					22	
ZMM33	33		31..35				<0.1		24	
ZMM36	36		34..38						27	
ZMM39	39		37..41	<90	<500				30	0.04..0.12
ZMM43	43		40..46					<5	33	
ZMM47	47		44..50	<110	<600				36	
ZMM51	51		48...54	<125	<700				39	
ZMM56	56	2.5	52..60	<135					43	
ZMM62	62		58..66	<150					47	
ZMM68	68		64..72	<200	<1000				51	
ZMM75	75		70..79.	<250					56	
ZMM82	82		77..87	<300	<1500	0.25			62	
ZMM91	91		85..96	<450	<2000				68	
ZMM100	100		94..106	<450	<5000			<10	75	
ZMM110	110		104..116	<600					82	
ZMM120	120		114..127.	<800	<5500				91	
ZMM130	130	1	124..141	<950	<6000	0.1			100	0.05..0.12
ZMM150	150		138..156	<1250	<6500				110	
ZMM160	160		153..171	<1400	<7000				120	
ZMM180	180		168..191	<1700	<8500				130	
ZMM200	200		188..212	<2000	<10000				150	

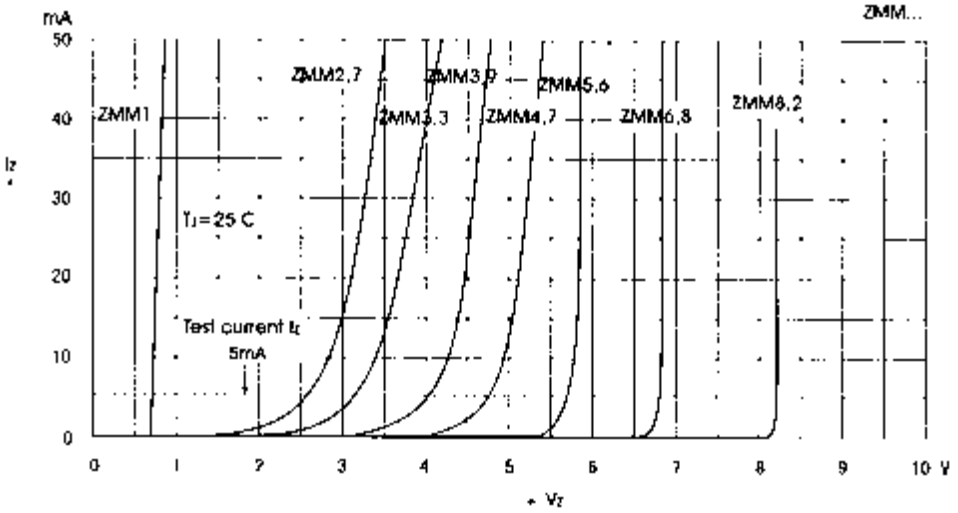
1) Tested with pluse tp=20ms

2) Valid provided that electrodes are kept at amibent temperature

3) 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 to the negative pole.

ZMM1. ZMM200 SILICON PLANER ZENER DIODES

BREAKDOWN CHARACTERISTICS AT TJ=CONSTANT (PULSED)



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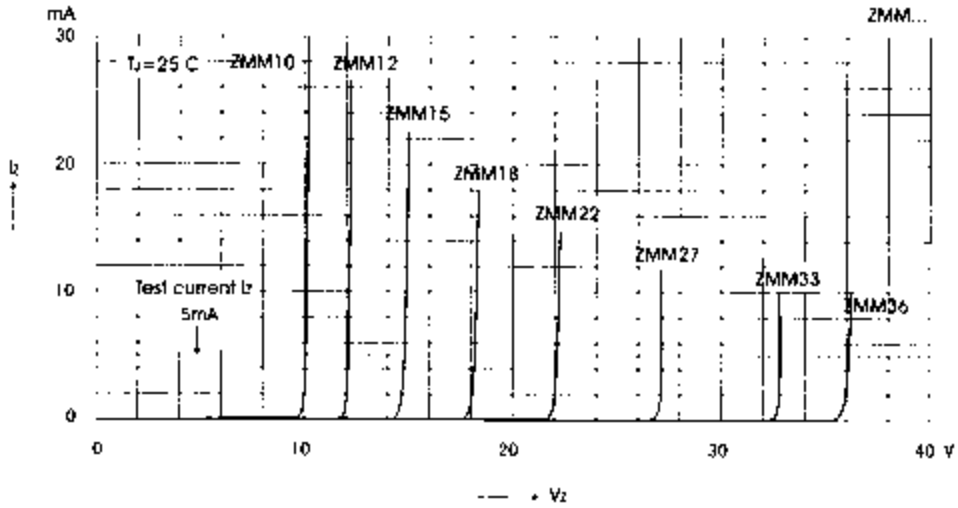

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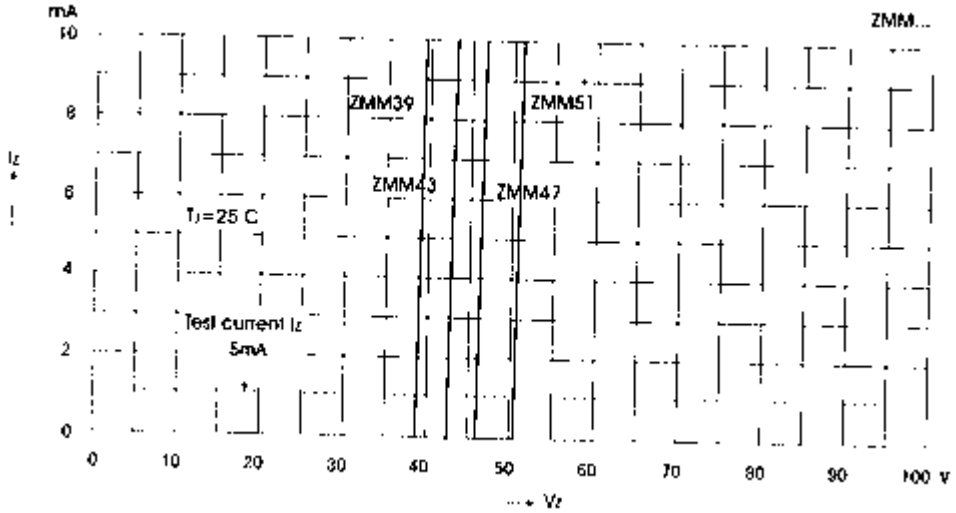
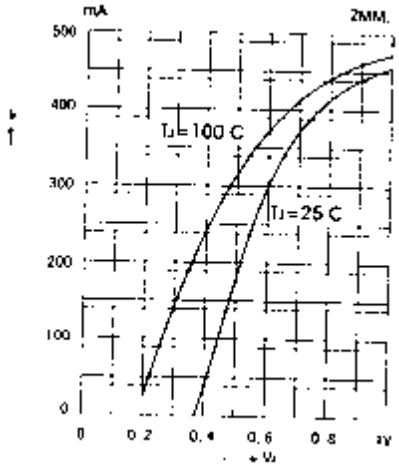
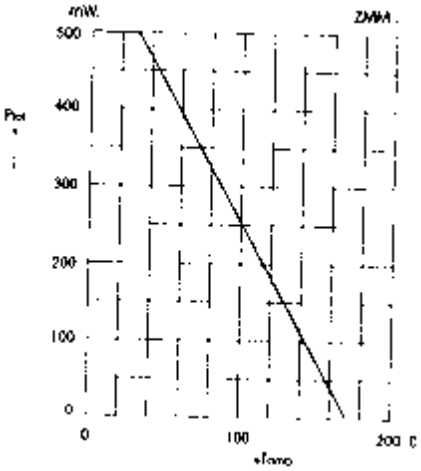


Forward Characteristics

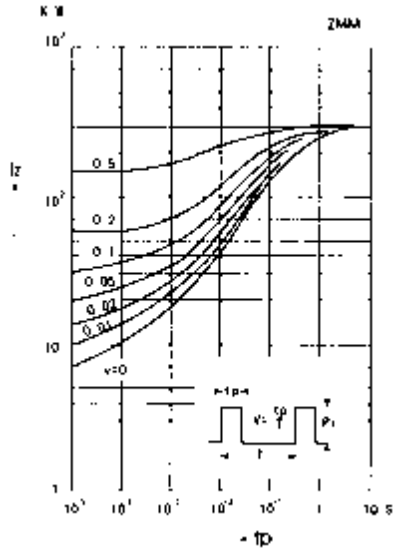


Admissible power dissipation versus ambient temperature

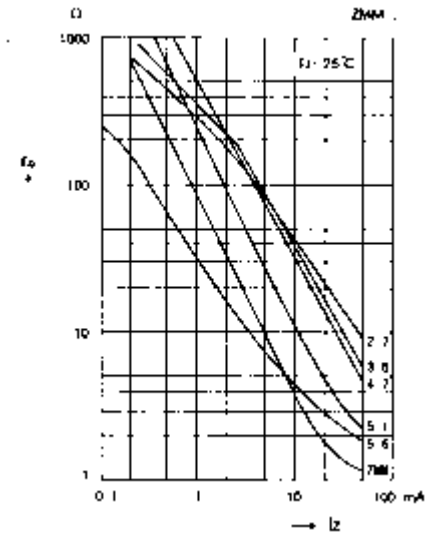


ZMM1..ZMM200 SILICON PLANER ZENER DIODES

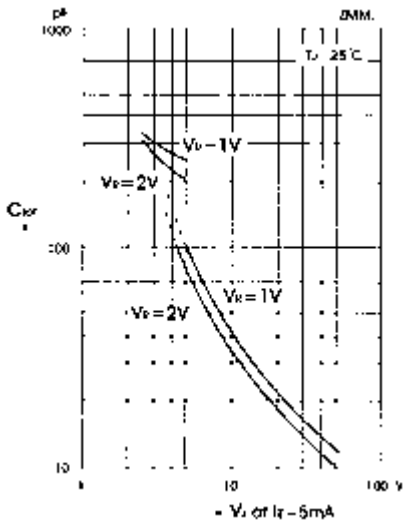
Pulse thermal resistance versus pulse duration



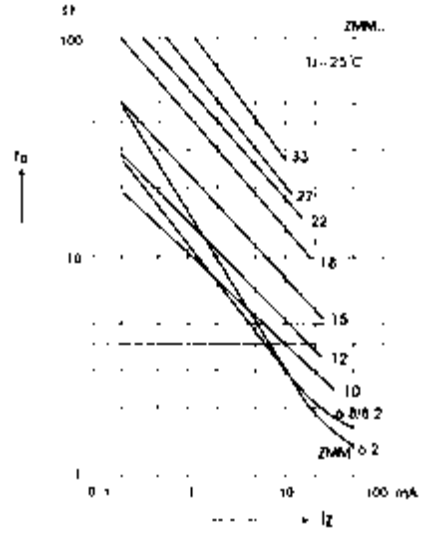
Dynamic resistance versus Zener current



Capacitance versus Zener voltage



Dynamic resistance versus Zener current



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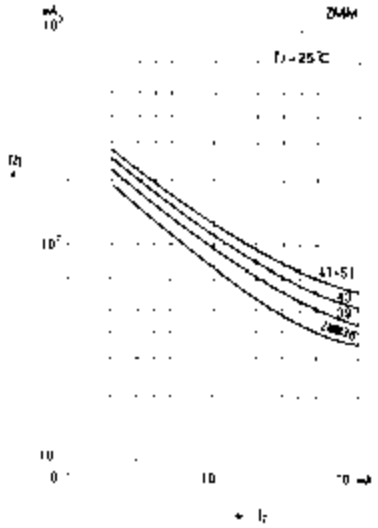
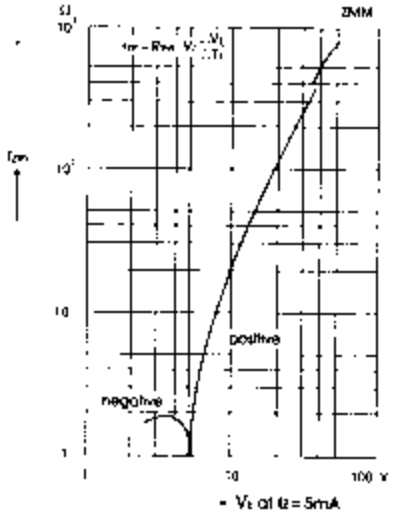
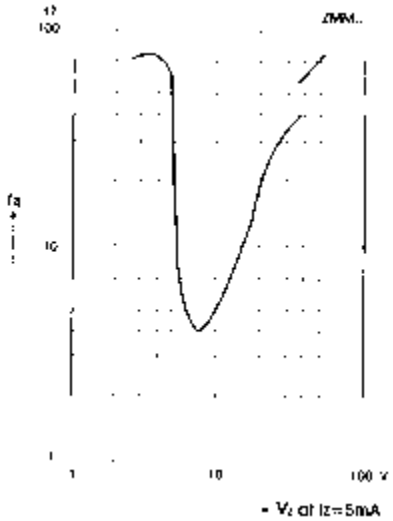
Dynamic resistance versus Zener current



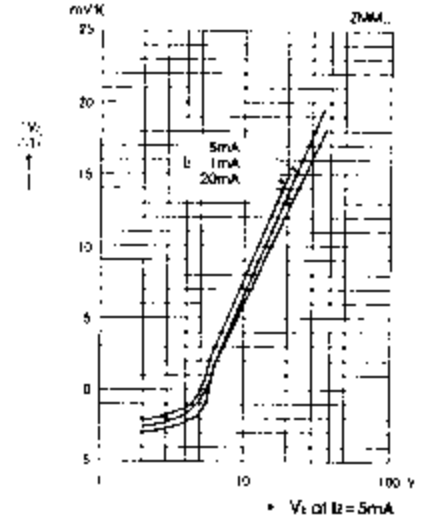
Thermal differential resistance versus Zener voltage



Dynamic resistance versus Zener voltage



Temperature dependence of Zener voltage versus voltage



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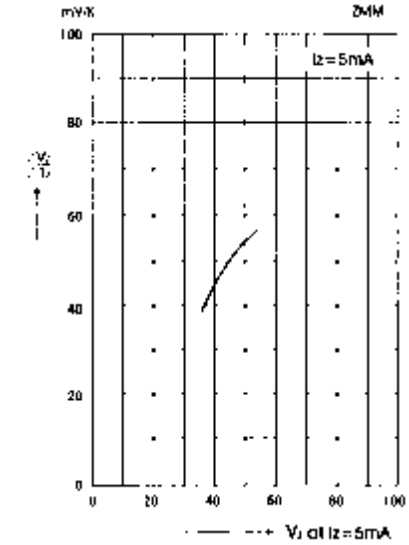
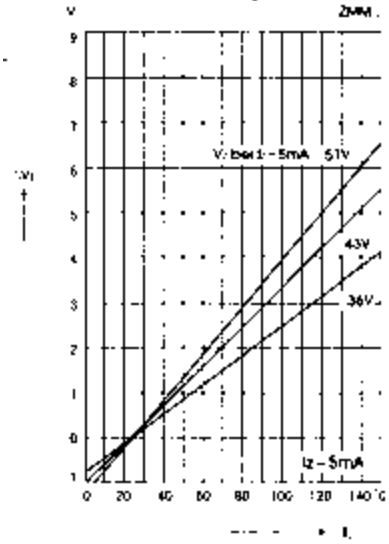
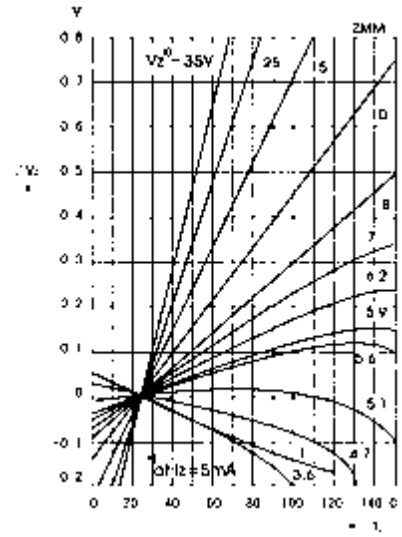


Thermal differential resistance versus Zener voltage



Dynamic resistance versus Zener voltage



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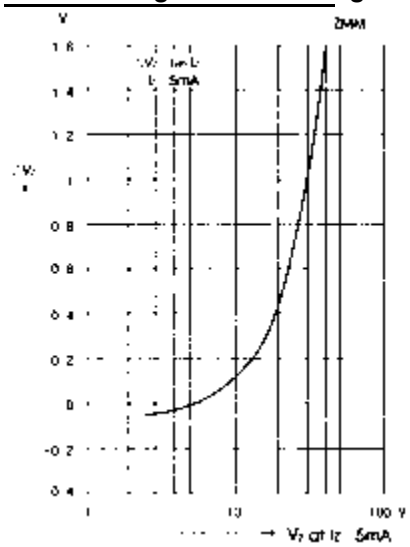

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