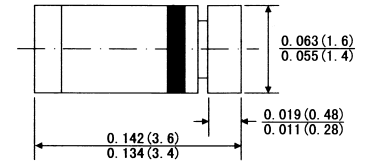


FEATURES

- . In MiniMELF case especially for automated insertion
- The zener voltage are graded according to the international E24 standard. 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°C)

	Symbols	Value	Units
Zener current see table "Characteristics"			
Power dissipation at TA=25°C	P _{tot}	500 ¹⁾	mW
Junction temperature	T _J	175	°C
Storage temperature range	T _{STG}	-55 to +175	°C

1) Valid provided that a distance of 8mm from case are kept at ambient temperature

ELECTRICAL CHARACTERISTICS(TA=25°C)

	Symbols	Min	Typ	Max	Units
Thermal resistance junction to ambient	R _{θj\}			300 ¹⁾	K/W

1) Valid provided that a distance at 8mm from case are kept at ambient temperature

ZMM1 THRU ZMM200 SILICON PLANAR ZENER DIODES

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	μ A	μ A	V	%/K
ZMM1 ³⁾	0.75		0.7.0.8	<8	<50		--	--	--	-0.26..-0.23
ZMM2.0	2.0		1.9.2.1	<85	<600	1	<100	<200	1	-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				<4	<40		-0.08..-0.05
ZMM3.3	3.3		3.1.3.5				<2			-0.08..-0.05
ZMM3.6	3.6		3.4.3.8				<2			-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	<20		-0.06..-0.03
ZMM4.7	4.7		4.4.5.0				<60	<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	<50	5	0.03.0.08			
ZMM8.2	8.2	5	7.7.8.7	<7		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	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	<220	15	0.03.0.11			
ZMM22	22		20.8.23.3	<55		16	0.04.0.12			
ZMM24	24		22.8.25.6	<80		18				
ZMM27	27		25.1.28.9			20				
ZMM30	30		28.32			22				
ZMM33	33		31.35			24				
ZMM36	36		34.38			27				
ZMM39	39		37.41			<90		<500	30	
ZMM43	43		40.46			<110		<600	33	
ZMM47	47		44.50			<125		<700	36	
ZMM51	51		48..54		<135	<700		39		
ZMM56	56	2.5	52.60		<150	<1000	43			
ZMM62	62		58.66	<200	<1000	47				
ZMM68	68		64.72	<250	<1500	51				
ZMM75	75		70..79.	<300	<2000	56				
ZMM82	82		77.87	<450	<5000	62				
ZMM91	91		85.96	<600	<5500	68				
ZMM100	100		94.106	<800	<6000	75				
ZMM110	110		104.116	<950	<6500	82				
ZMM120	120		114.127.	<1400	<7000	91				
ZMM130	130	1	124.141	<1700	<8500	100				
ZMM150	150		138.156	<2000	<10000	110				
ZMM160	160		153.171			120				
ZMM180	180		168.191			130				
ZMM200	200		188.212			150				

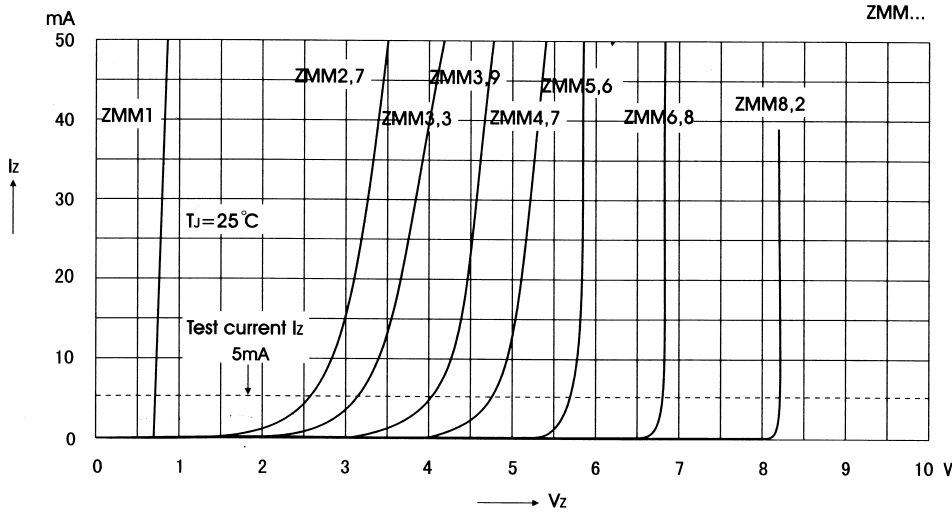
1) Tested with pluse tp=20ms

2) Valid provided that electrodes are kept at ambient temperature

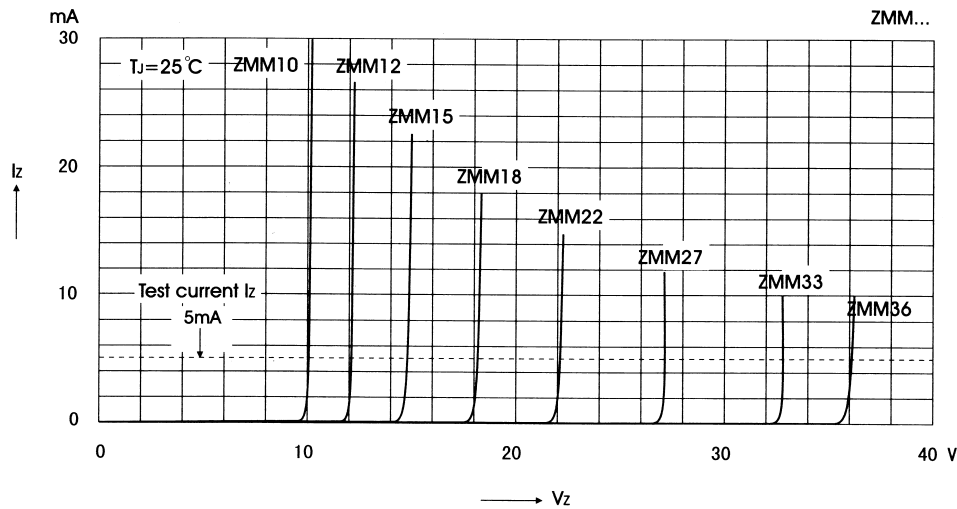
3) The ZMM1 is a silicon diode with operation in forward direction. Hence, the index of all parameters should be "F" instead of "Z", Connect the cathode to the negative pole.

ZMM1 .ZMM200 SILICON PLANER ZENER DIODES

BREAKDOWN CHARACTERISTICS AT T_J=CONSTANT (PULSED)

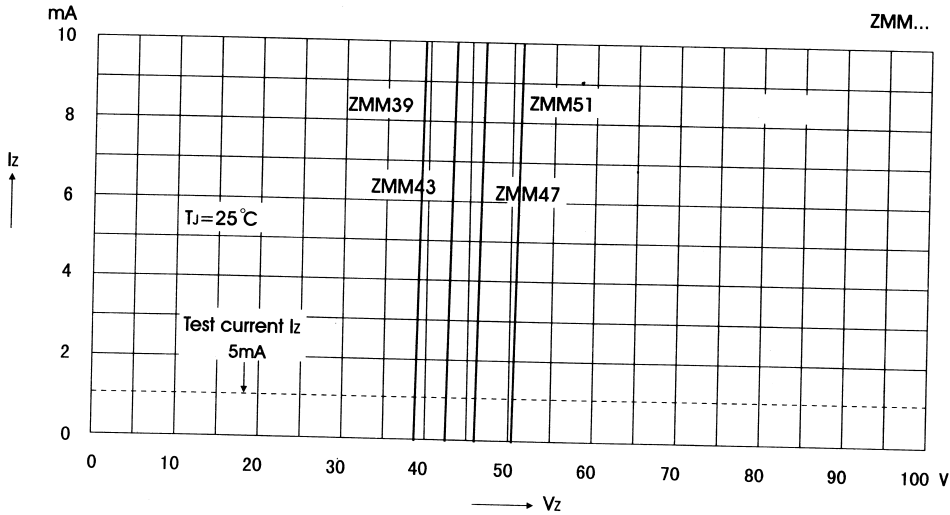


BREAKDOWN CHARACTERISTICS AT T_J=CONSTANT (PULSED)

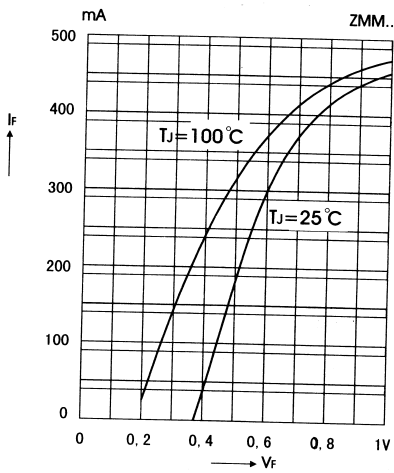


ZMM1. ZMM200 SILICON PLANER ZENER DIODES

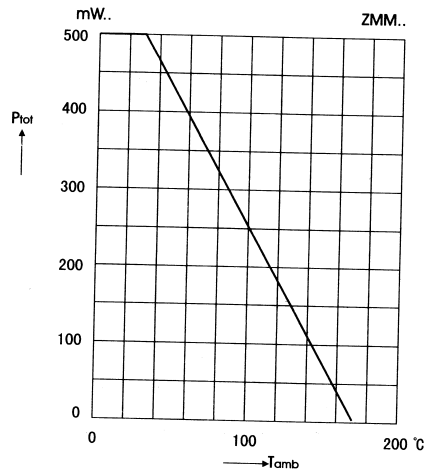
BREAKDOWN CHARACTERISTICS AT $T_J=CONSTANT$ (PULSED)



Forward Characteristics

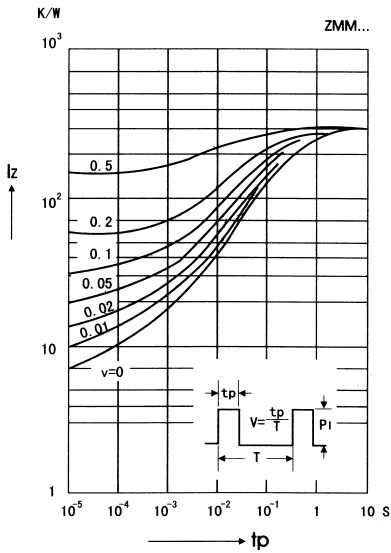


Admissible power dissipation versus ambient temperature

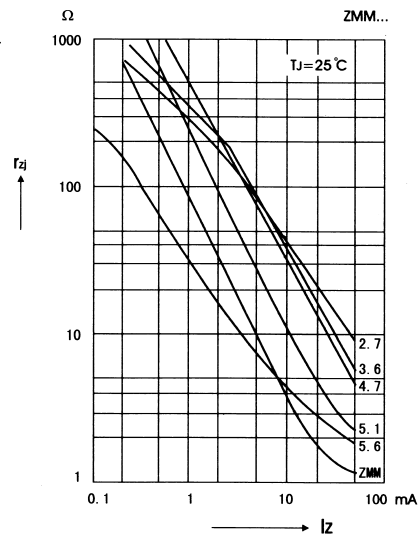


ZMM1. ZMM200 SILICON PLANER ZENER DIODES

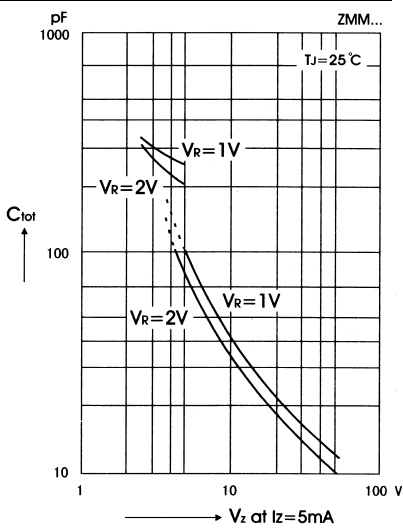
Pulse thermal resistance versus pulse duration



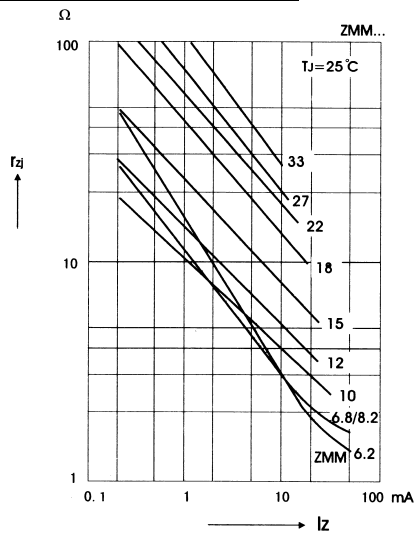
Dynamic resistance versus Zener current



Capacitance versus Zener voltage

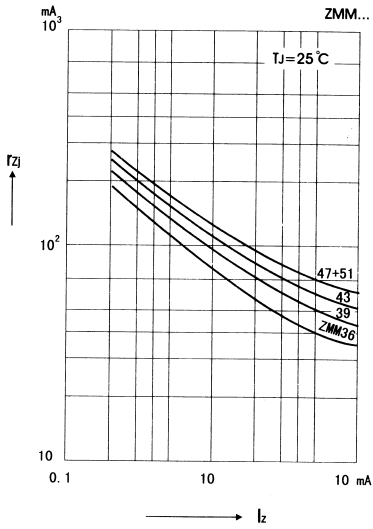


Dynamic resistance versus Zener current

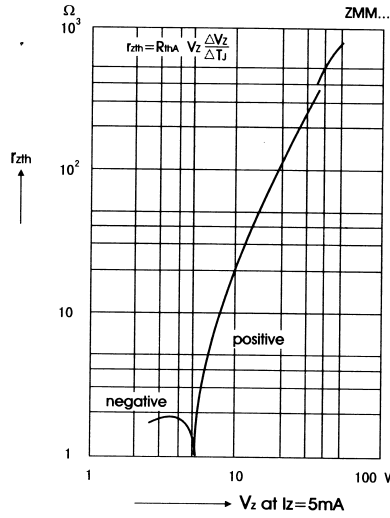


ZMM1. ZMM200 SILICON PLANER ZENER DIODES

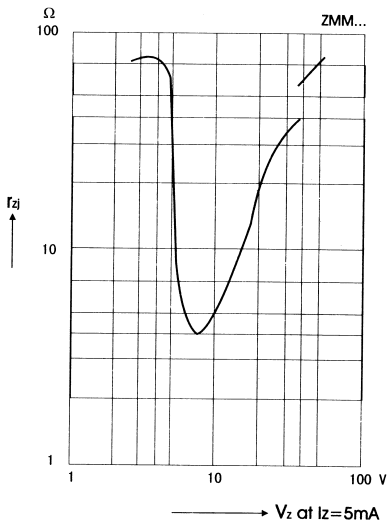
Dynamic resistance versus Zener current



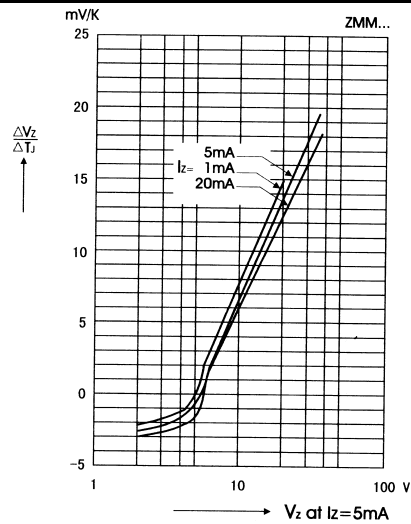
Thermal differential resistance versus Zener voltage



Dynamic resistance versus Zener voltage

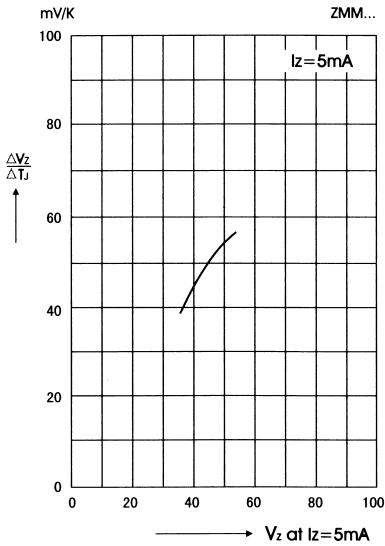


Temperature dependence of Zener voltage versus voltage

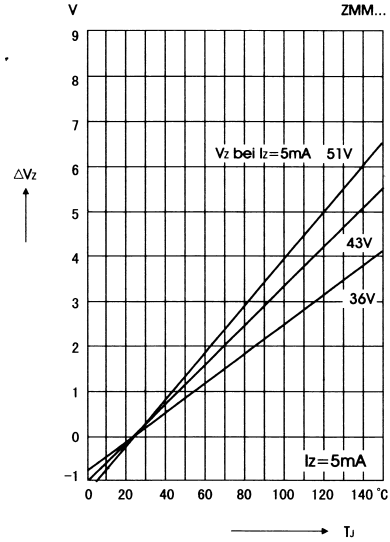


ZMM1. ZMM200 SILICON PLANER ZENER DIODES

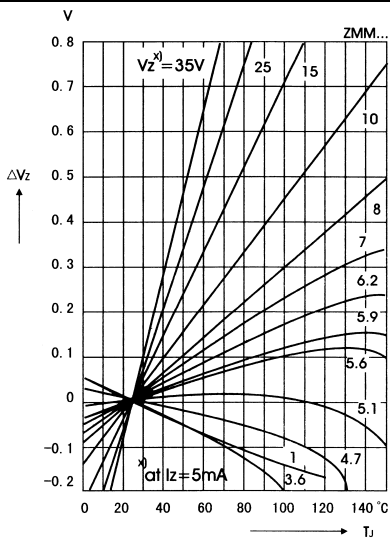
Temperature dependence of Zener voltage versus voltage



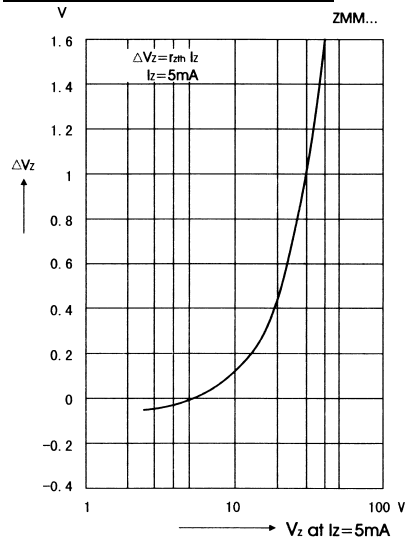
Thermal differential resistance versus Zener voltage



Dynamic resistance versus Zener voltage



Temperature dependence of Zener voltage versus voltage



ZMM1 . ZMM200 SILICON PLANER ZENER DIODES

**Temperature dependence of
Zener voltage versus voltage**

