



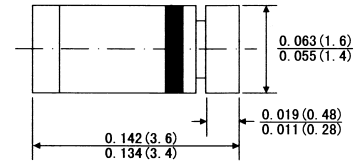
ZMM1 THRU ZMM200

0.5W SILICON PLANAR ZENER DIODES

FEATURES

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

ELECTRCAL 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

0.5W SILICON PLANAR ZENER DIODES

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 _{ZT} and r _{ZK} 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		<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	<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	5	7.0.7.9	<7	<50		5	0.03.0.08		
ZMM8.2	8.2		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	52.60		<150	<1000	43				
ZMM62	62	58.66	<200	<1000	47					
ZMM68	68	64.72	<250	<1500	51					
ZMM75	75	70..79	<300	<1500	56					
ZMM82	82	77.87	<450	<2000	62					
ZMM91	91	85.96	<450	<5000	68					
ZMM100	100	94.106	<600	<5500	75					
ZMM110	110	104.116	<800	<6000	82					
ZMM120	120	114.127	<950	<6500	91					
ZMM130	130	124.141	<1250	<7000	100					
ZMM150	150	138.156	<1400	<8500	110					
ZMM160	160	153.171	<2000	<10000	120					
ZMM180	180	168.191			130					
ZMM200	200	188.212			150					

1) Tested with pluse tp=20ms

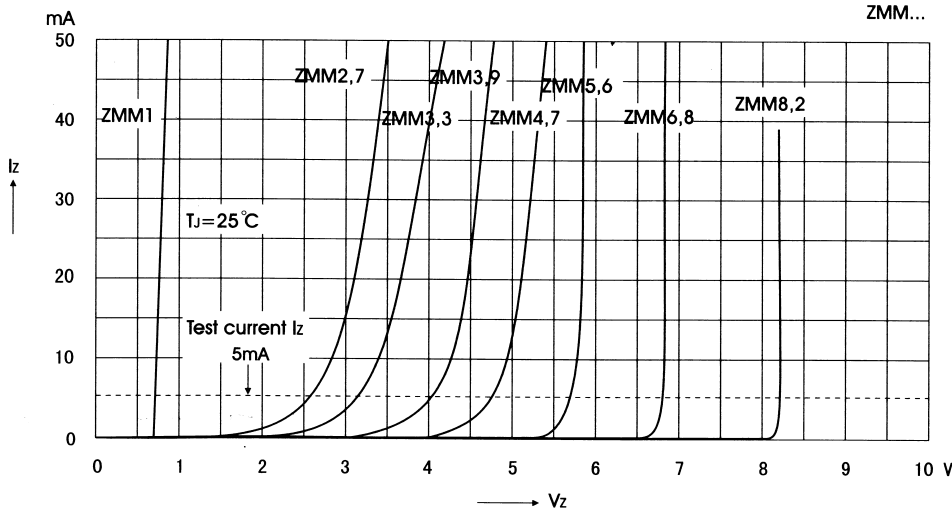
2) Valid provided that electrodes are kept at ambient temperature

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.

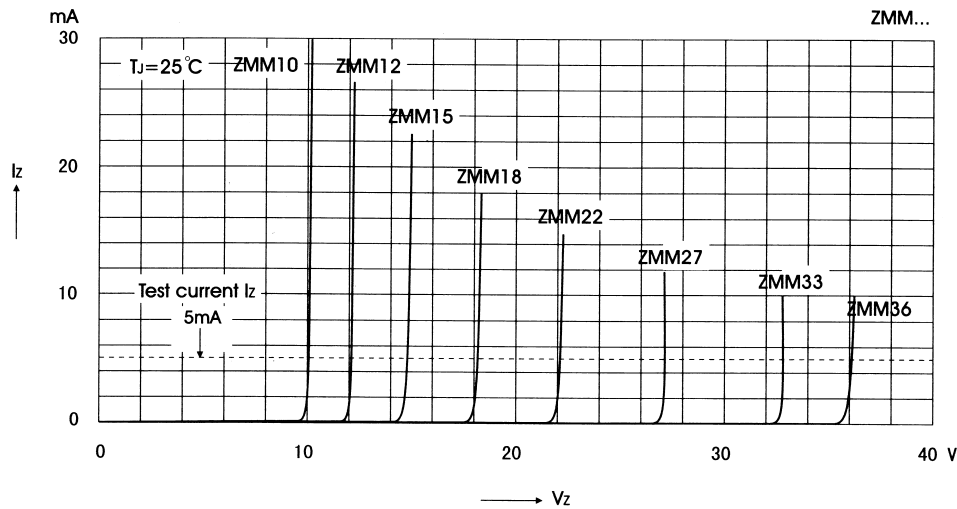


ZMM1 .ZMM200 SILICON PLANER ZENER DIODES

BREAKDOWN CHARACTERISTICS AT $T_J=CONSTANT$ (PULSED)



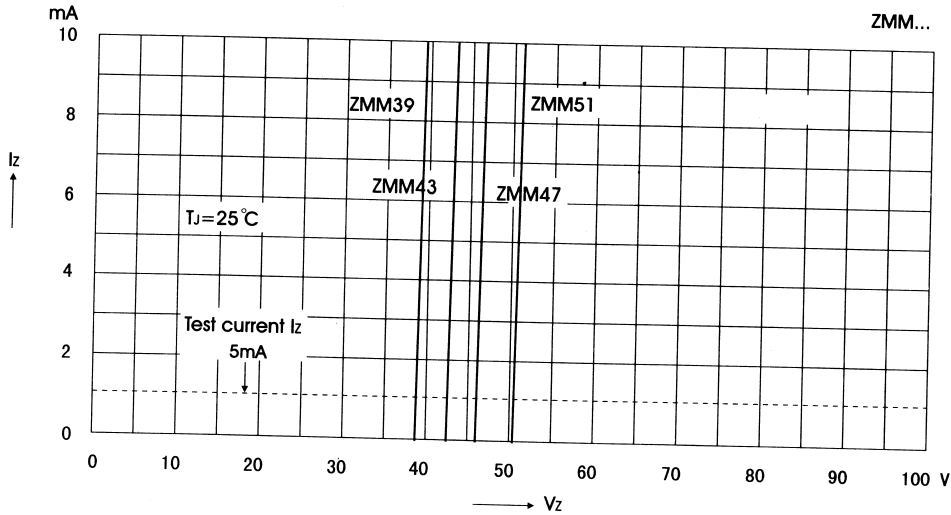
BREAKDOWN CHARACTERISTICS AT $T_J=CONSTANT$ (PULSED)



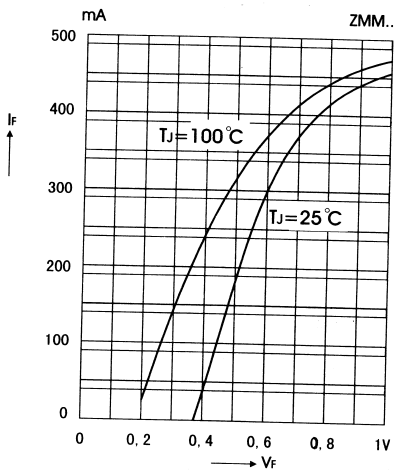


ZMM1. ZMM200 SILICON PLANER ZENER DIODES

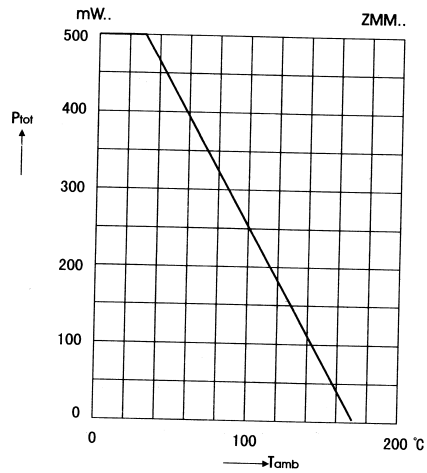
BREAKDOWN CHARACTERISTICS AT $T_J = \text{CONSTANT}$ (PULSED)



Forward Characteristics



Admissible power dissipation versus ambient temperature



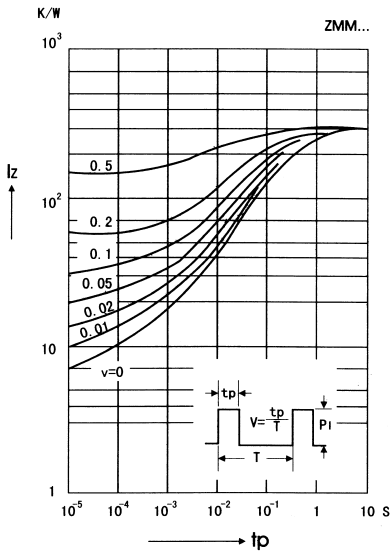


ZMM1 THRU ZMM200

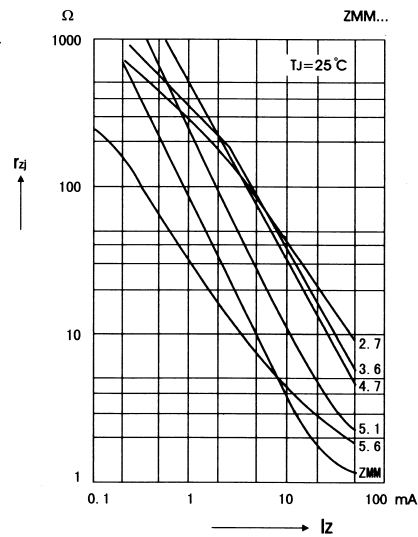
0.5W SILICON PLANAR ZENER DIODES

ZMM1. ZMM200 SILICON PLANER ZENER DIODES

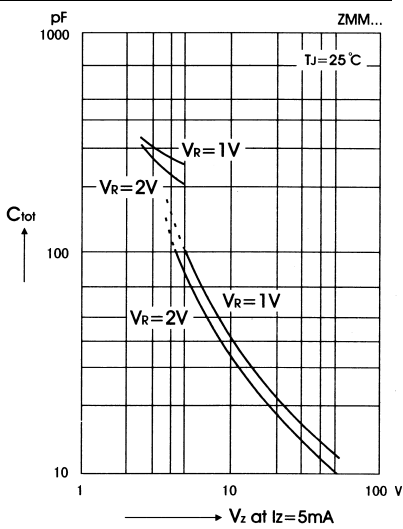
Pulse thermal resistance versus pulse duration



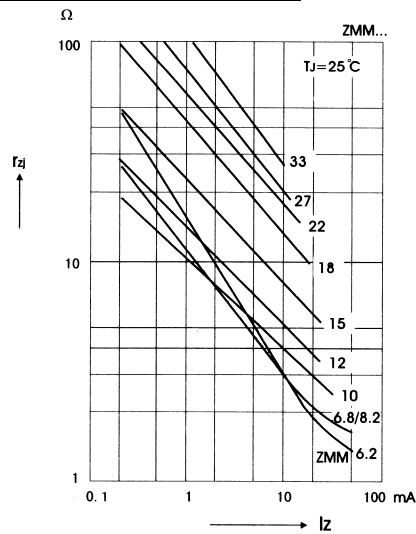
Dynamic resistance versus Zener current



Capacitance versus Zener voltage



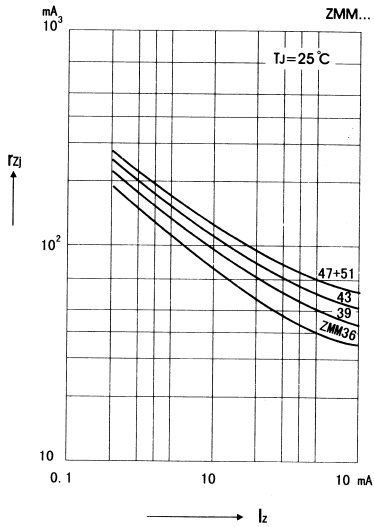
Dynamic resistance versus Zener current



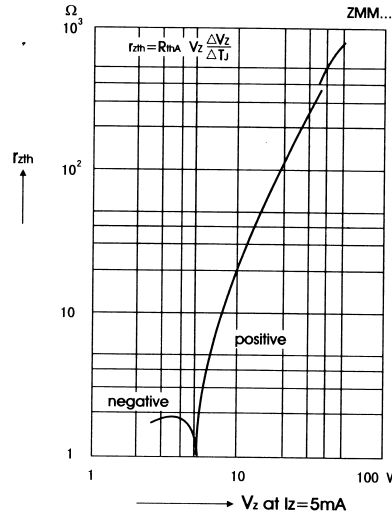


ZMM1. ZMM200 SILICON PLANER ZENER DIODES

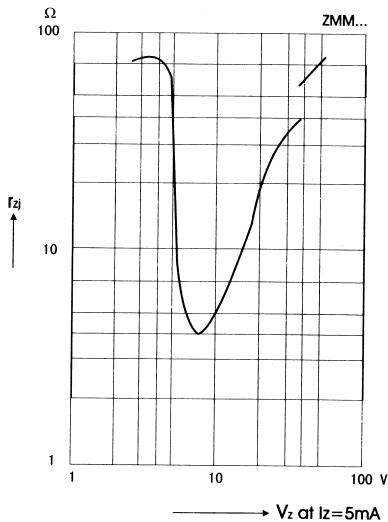
Dynamic resistance versus Zener current



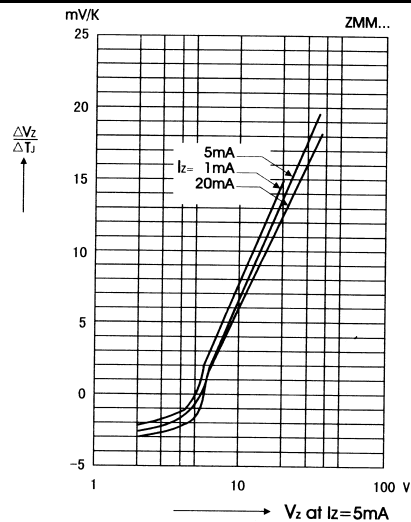
Thermal differential resistance versus Zener voltage



Dynamic resistance versus Zener voltage



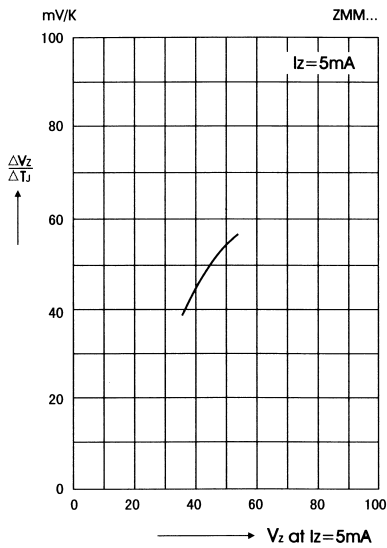
Temperature dependence of Zener voltage versus voltage



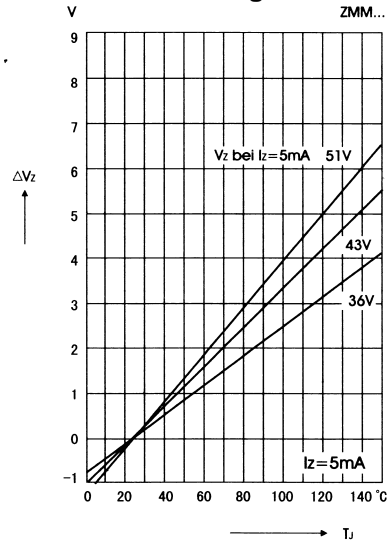


ZMM1. ZMM200 SILICON PLANER ZENER DIODES

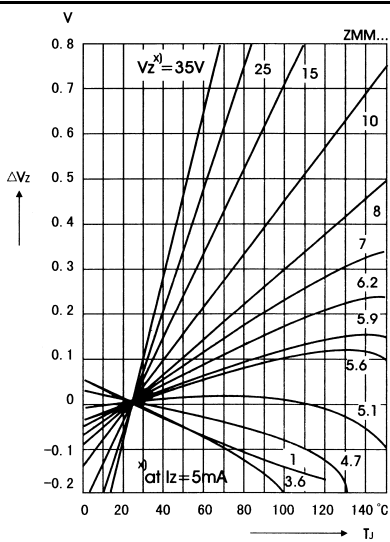
Temperature dependence of Zener voltage versus voltage



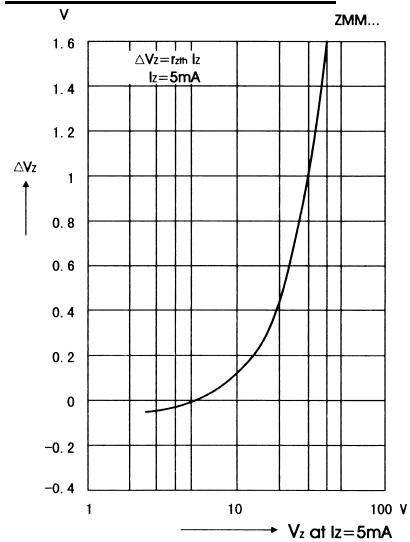
Thermal differential resistance versus Zener voltage



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

