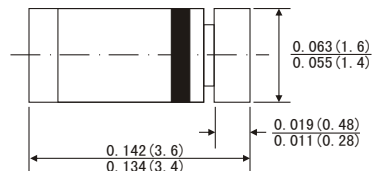


FEATURES

- In MiniMELF case especially for automated insertion
Standard Zener voltage tolerance is 5%. Add suffix "B" for 2% tolerance
Other tolerance, non standard and higher zener voltages are upon request
- High temperature soldering guaranteed: 260°C/10 seconds at terminals
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



MiniMELF



MECHANICAL DATA

- Case: MiniMELF(SOD-80) glass case
- Weight: Approx. 0.05 gram

Dimensions in inches and (millimeters)

ABSOLUTE MAXIMUM RATINGS(LIMITING VALUES) (TA=25°C)

	<i>Symbols</i>	<i>Value</i>	<i>Units</i>
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

ELECTRICAL CHARACTERISTICS (TA=25°C)

	<i>Symbols</i>	<i>Min</i>	<i>Typ</i>	<i>Max</i>	<i>Units</i>
Thermal resistance junction to ambient	R _{θJA}			300 ¹⁾	K/W
Forward Voltage at I _F = 100mA	V _F			1	V

1) Valid provided that electrodes case is kept at ambient temperature

ZMM1 THRU ZMM200 SILICON PLANAR ZENER DIODES

Type	Zener Voltage range ¹⁾		Maximum zener impedance ¹⁾				Maximum Reverse Leakage Current			Temp Coefficient of zener voltage		
	V _{ZNOM} ³⁾	I _{ZT}		r _{ZK} and r _{ZK} at I _{ZK}			I _R and I _R ²⁾ at V _R			TK _{VZ}		
	V	mA	V	Ω	Ω	mA	μA	μA	V	%/K		
ZMM1 ³⁾	0.75	5	0.7...0.8	<8	<50	1	--	--	1.0	-0.26...-0.23		
ZMM2.0	2		1.9...2.1	<85	<600		<100	<200		-0.09...-0.06		
ZMM2.4	2.4		2.28...2.56	<85	<600		<50	<100		-0.09...-0.06		
ZMM2.7	2.7		2.5...2.9	<85	<600		<10	<50		-0.09...-0.06		
ZMM3.0	3		2.8...3.2	<85	<600		<4	<40		-0.08...-0.05		
ZMM3.3	3.3		3.1...3.5	<85	<600		<2	<40		-0.08...-0.05		
ZMM3.6	3.6		3.4...3.8	<85	<600		<2	<40		-0.08...-0.05		
ZMM3.9	3.9		3.7...4.1	<85	<600		<2	<40		-0.08...-0.05		
ZMM4.3	4.3		4.0...4.6	<75	<600		<1	<20		-0.06...-0.03		
ZMM4.7	4.7		4.4...5.0	<60	<600		<0.5	<10		-0.05...+0.02		
ZMM5.1	5.1		4.8...5.4	<35	<550		0.1	<2		-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		7.7...8.7	<7	<50			6.2	0.03...0.09			
ZMM9.1	9.1		8.5...9.6	<10	<50			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	20		13.8...15.6	<30	<110			11	0.03...0.11			
ZMM16	15		15.3...17.1	<40	<170			12	0.03...0.11			
ZMM18	22		16.8...19.1	<50	<170			13	0.03...0.11			
ZMM20	16		18.8...21.2	<55	<220			15	0.03...0.11			
ZMM22	24		20.8...23.3	<55	<220			16	0.04...0.12			
ZMM24	27		22.8...25.6	<80	<220			18	0.04...0.12			
ZMM27	18		25.1...28.9	<80	<220			20	0.04...0.12			
ZMM30	30		28...32	<80	<220			22	0.04...0.12			
ZMM33	33		31...35	<80	<220			24	0.04...0.12			
ZMM36	36		34...38	<80	<220			27	0.04...0.12			
ZMM39	39	2.5	37...41	<90	<500	0.1	<5	30	0.04...0.12			
ZMM43	43		40...46	<90	<500			33	0.04...0.12			
ZMM47	47		44...50	<110	<600			36	0.04...0.12			
ZMM51	51		48...54	<125	<700			39	0.04...0.12			
ZMM56	56		52...60	<135	<700			43	0.04...0.12			
ZMM62	62		58...66	<150	<1000		<10	47	0.04...0.12			
ZMM68	68		64...72	<200	<1000			51	0.04...0.12			
ZMM75	75		70...79	<250	<1000			56	0.04...0.12			
ZMM82	82		77...87	<300	<1500			62	0.05...0.12			
ZMM91	91		85...96	<450	<2000			68	0.05...0.12			
ZMM100	100	1	94...106	<450	<5000			0.1			75	0.05...0.12
ZMM110	110		104...116	<600	<5000						82	0.05...0.12
ZMM120	120		114...127	<800	<5500						91	0.05...0.12
ZMM130	130		124...141	<950	<6000						100	0.05...0.12
ZMM150	150		138...156	<1250	<6500						110	0.05...0.12
ZMM160	160		153...171	<1400	<7000						120	0.05...0.12
ZMM180	180		168...191	<1700	<8500						130	0.05...0.12
ZMM200	200		188...212	<2000	<10000						150	0.05...0.12

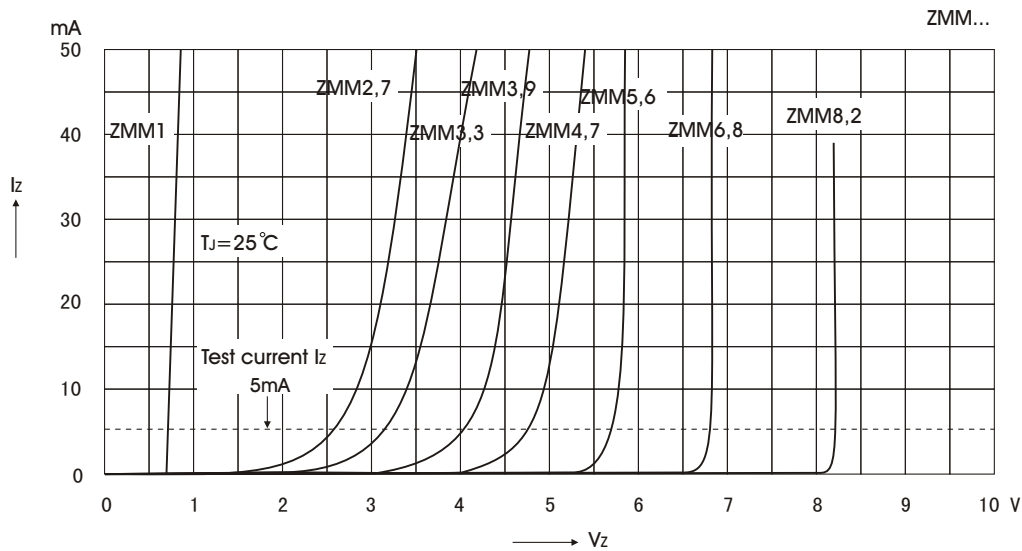
1) Tested with pulse tp=20ms

2) Valid provided that electrodes are kept at ambient temperature

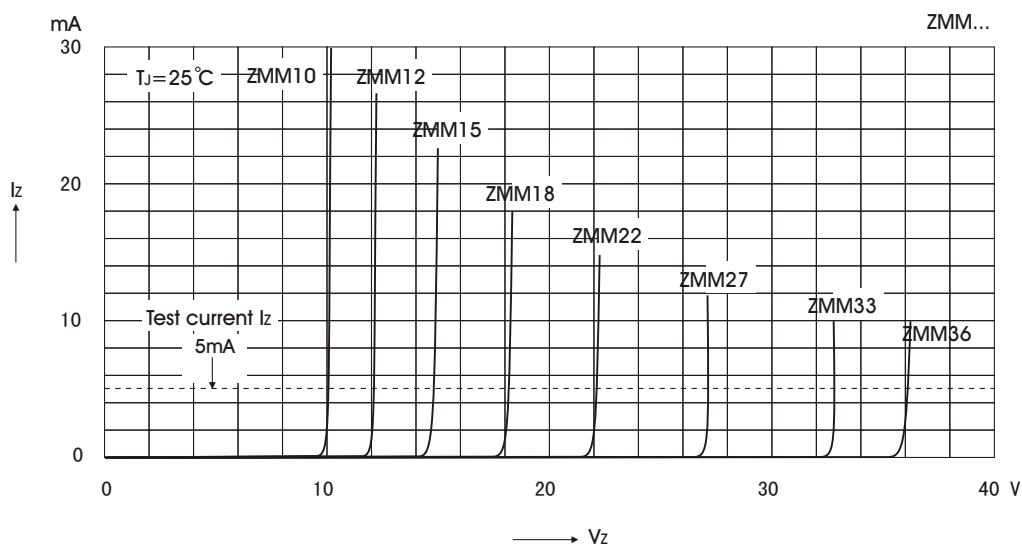
3) The ZMM1 is a silicon diode with operation in forward direction. Hence, the index of all parameters should be "F" instead of "Z". Connect the cathode to the negative pole.

ZMM1...ZMM200 SILICON PLANAR ZENER DIODES

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

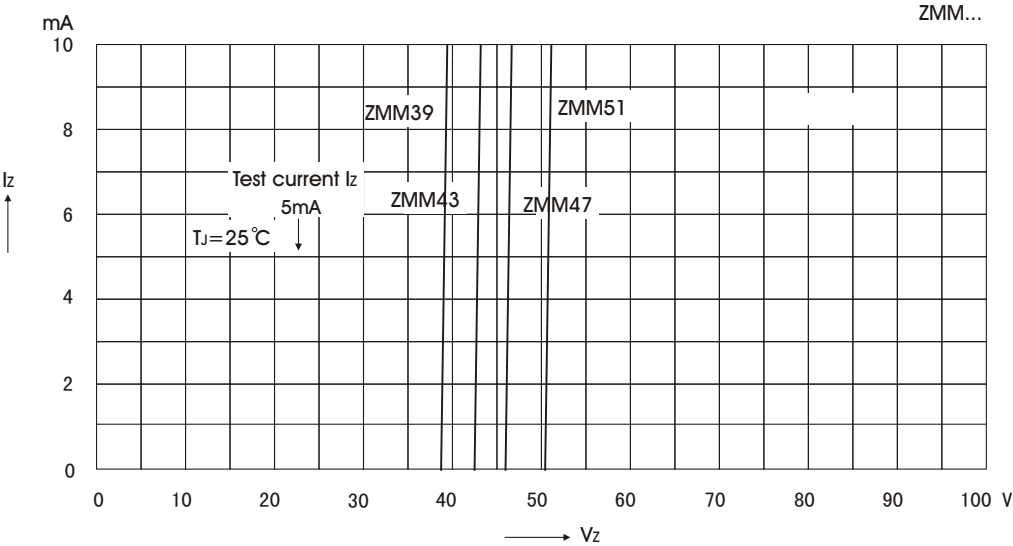


BREAKDOWN CHARACTERISTICS AT $T_J = \text{CONSTANT}$ (PULSED)



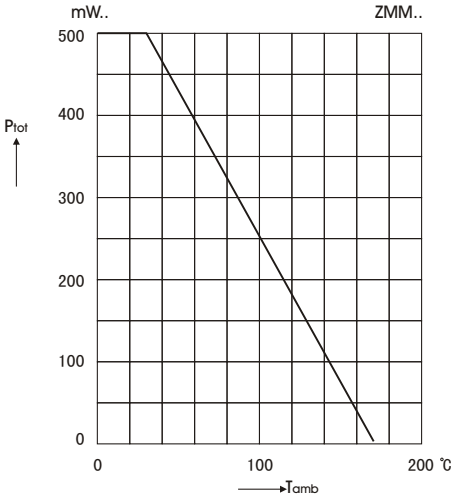
ZMM1...ZMM200 SILICON PLANAR ZENER DIODES

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

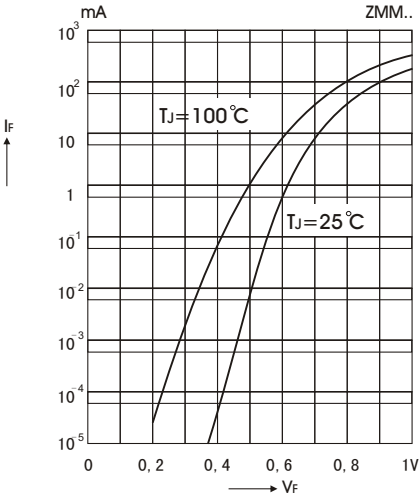


Admissible power dissipation versus ambient temperature

valid provided that electrodes are kept at ambient temperature

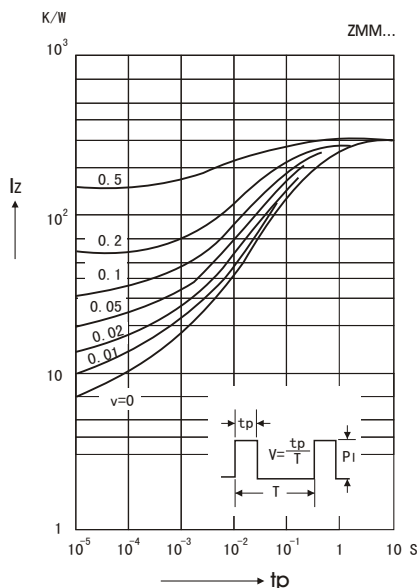


Forward Characteristics

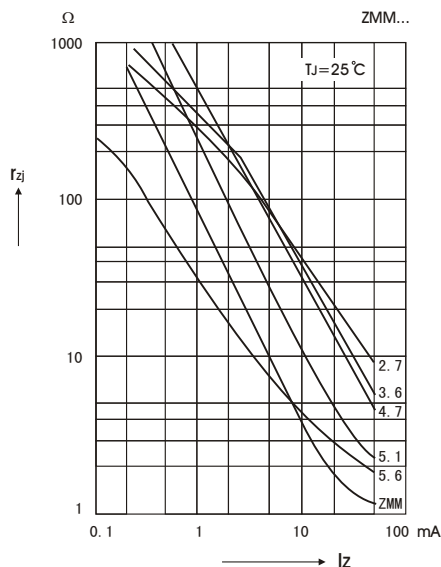


ZMM1...ZMM200 SILICON PLANAR ZENER DIODES

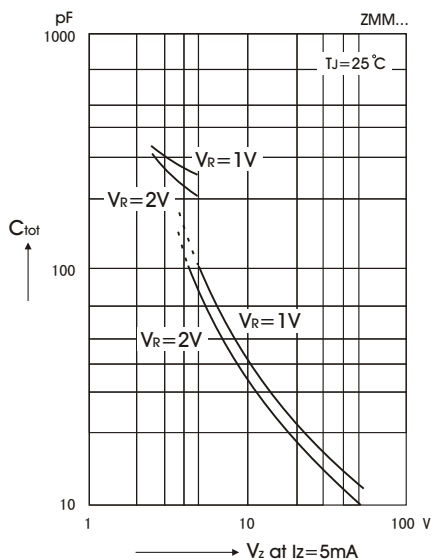
Pulse thermal resistance versus pulse duration



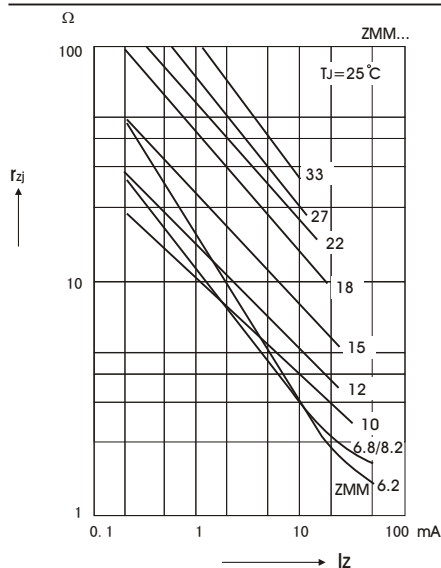
Dynamic resistance versus Zener current



Capacitance versus Zener voltage

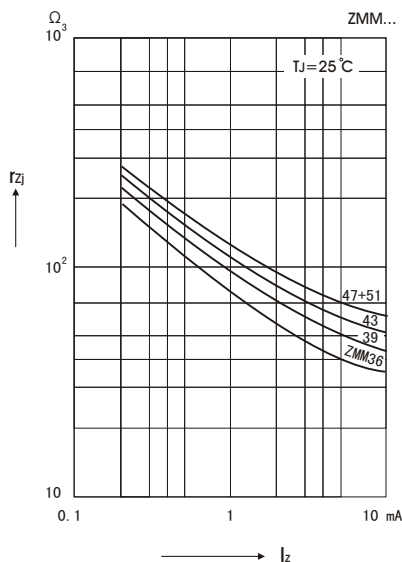


Dynamic resistance versus Zener current

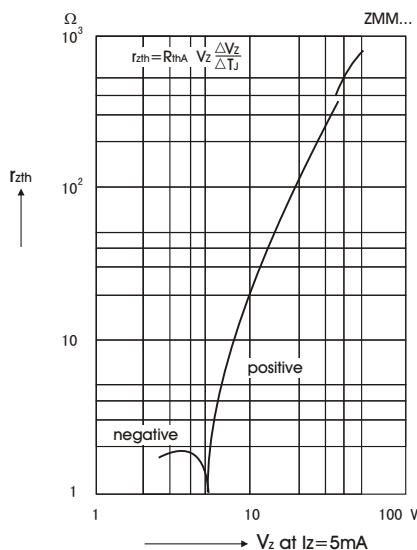


ZMM1...ZMM200 SILICON PLANAR ZENER DIODES

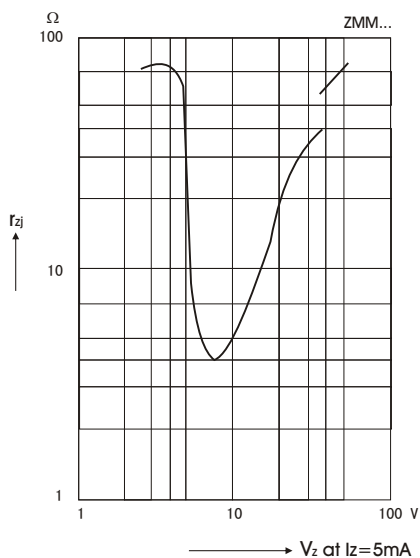
Dynamic resistance versus Zener current



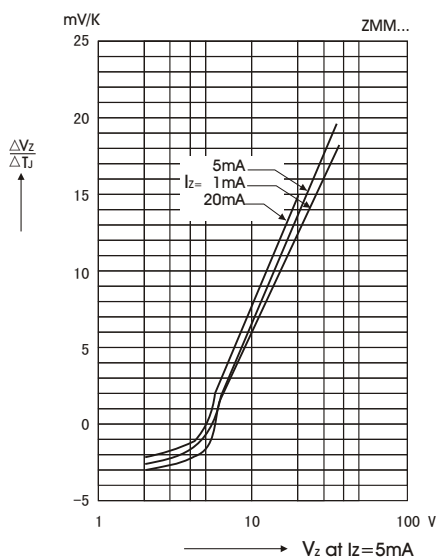
Thermal differential resistance versus Zener voltage



Dynamic resistance versus Zener voltage

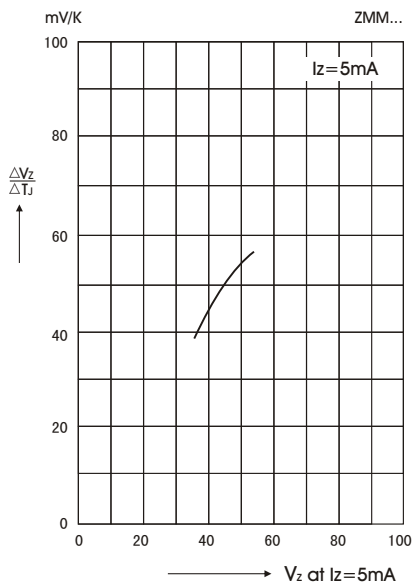


Temperature dependence of Zener voltage versus voltage

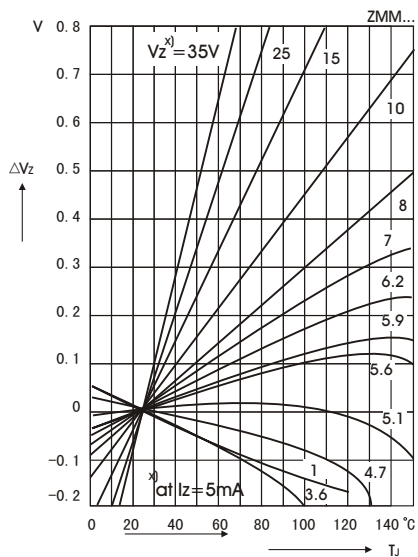


ZMM1...ZMM200 SILICON PLANAR ZENER DIODES

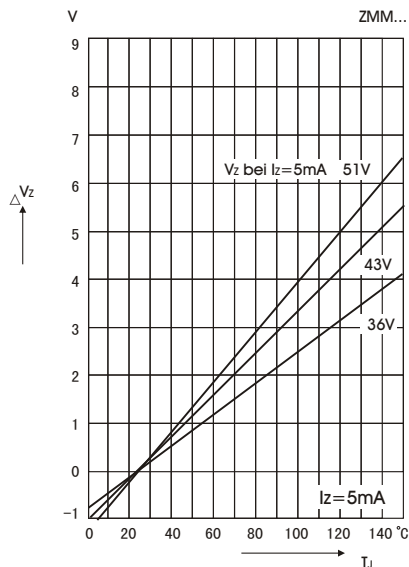
Temperature dependence of
Zener voltage versus voltage



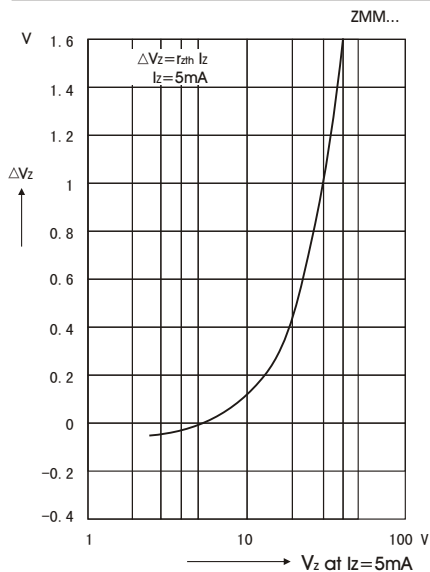
Change of Zener voltage
versus junction temperature



Change of Zener voltage
versus junction temperature



Change of Zener voltage from turn-on
up to the point of thermal equilibrium
versus Zener voltage



ZMM1...ZMM200 SILICON PLANAR ZENER DIODES

Change of Zener voltage from turn-on
up to the point of thermal equilibrium
versus Zener voltage

