SEMICONDUCTOR

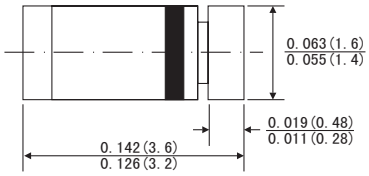
ZMM1 THRU ZMM200

0.5W SILICON PLANAR ZENER DIODES

FEATURES

- In MinMELF 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 2011/65/EU

MiniMELF



Dimensions in inches and (millimeters)

MECHANICAL DATA

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

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

	Symbols	*Value*	*Units*
Zener current see table "Characteristics"			
Power dissipation at T_A=25℃	P_{tot}	500[1)]	mW
Junction temperature	T_J	175	℃
Storage temperature range	T_{STG}	-55 to+175	℃

ELECTRICAL CHARACTERISTICS (T_A=25°C)

	Symbols	*Min*	*Typ*	*Max*	*Units*
Thermal resistance junction to ambient	$R_{\theta JA}$			300[1)]	K/W
Forward Voltage at I_F = 100mA	V_F			1	V

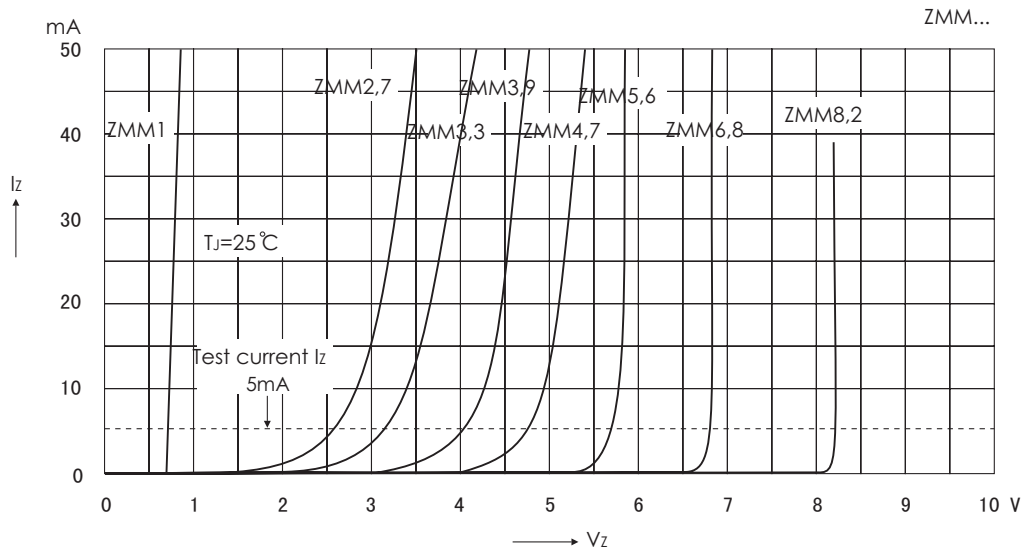
1) Valid provided that electrodes case is kept at ambient temperature

ZMM1 THRU ZMM200 SILICON PLANAR ZENER DIODES

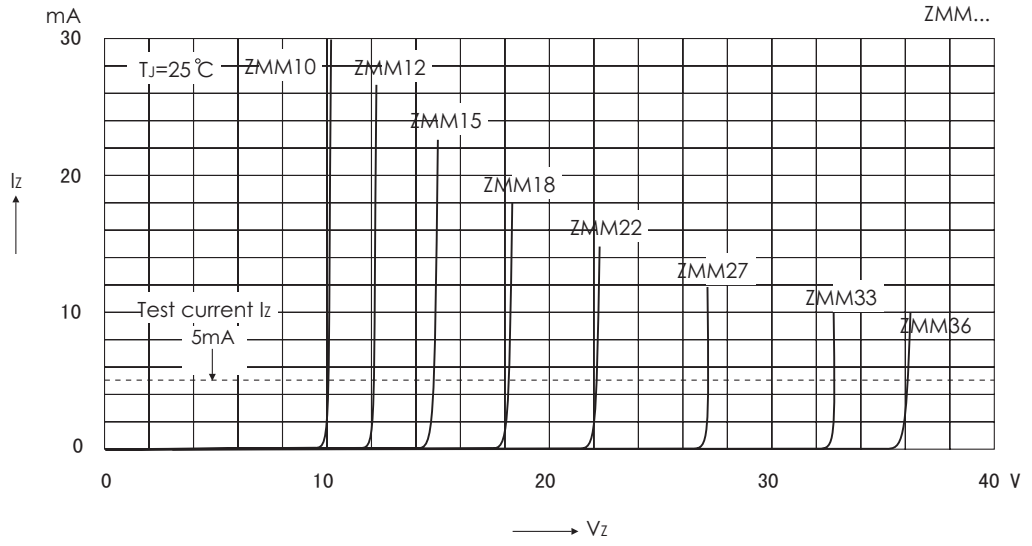
Type	Zener Voltage range 1)			Maximum zener impedance 1)			Maximum Reverse Leakage Current			Temp Coefficient of zener voltage
	V_{ZNOM}	I_{ZT} 2)		r_{ZJT} and r_{ZJK} at I_{ZK}			I_R at $V_{R(25℃)}$	I_R at $V_{R(125℃)}$	V_R	TK_{VZ}
	V	mA	V	Ω	Ω	mA	μA	μA	V	%/K
ZMM1 3)	0.75		0.7…0.8	<8	<50		--	--		-0.26…-0.23
ZMM2.0	2		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	1.0	-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					-0.02…+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	5	6.4…7.2	<8	<150	1		<2	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	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	<220				16	0.04…0.12
ZMM24	24		22.8…25.6	<80	<220				18	0.04…0.12
ZMM27	27		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		37…41	<90	<500		0.1		30	0.04…0.12
ZMM43	43		40…46	<90	<500			<5	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	2.5	52…60	<135	<700	0.25			43	0.04…0.12
ZMM62	62		58…66	<150	<1000				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		94…106	<450	<5000			<10	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	1	124…141	<950	<6000	0.1			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.

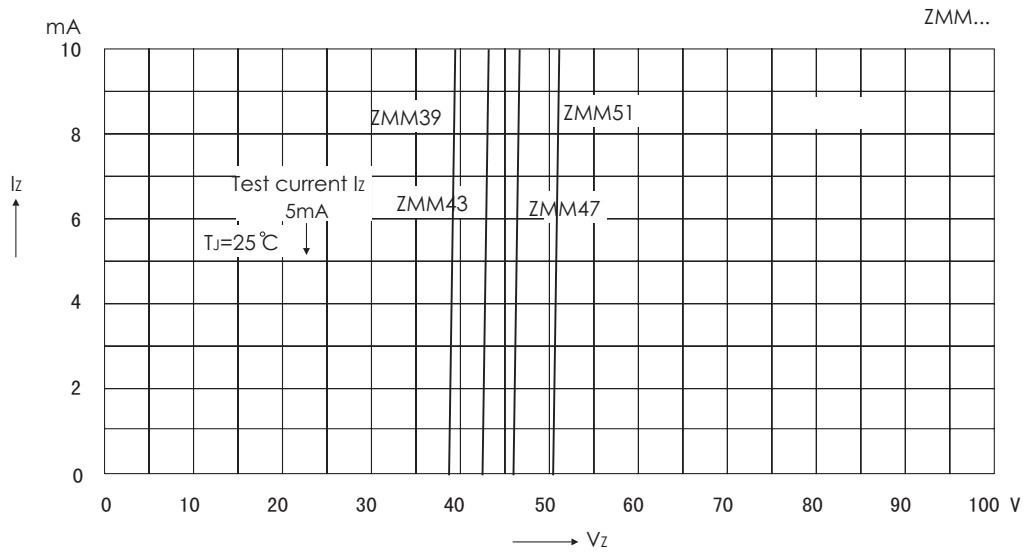
BREAKDOWN CHARACTERISTICS AT T_J= CONSTANT (PULSED)



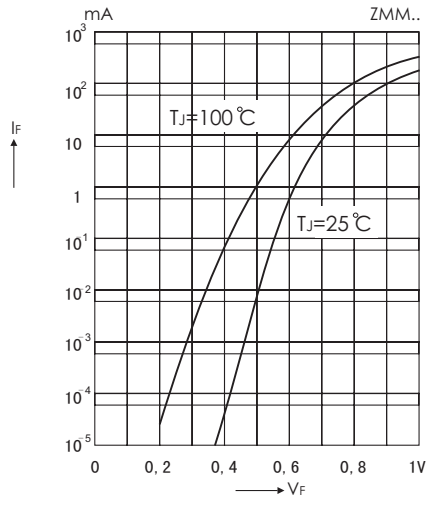
BREAKDOWN CHARACTERISTICS AT T_J= CONSTANT (PULSED)



BREAKDOWN CHARACTERISTICS AT T_J= CONSTANT (PULSED)

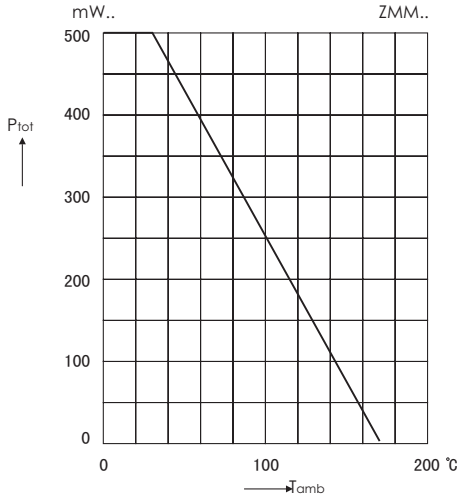


Forward Characteristics

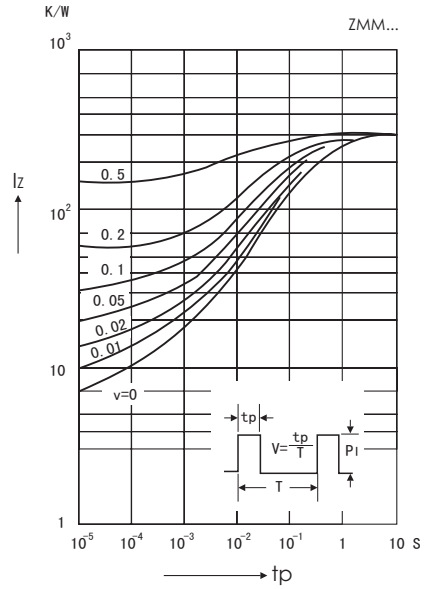


Admissible power dissipation versus ambient temperature

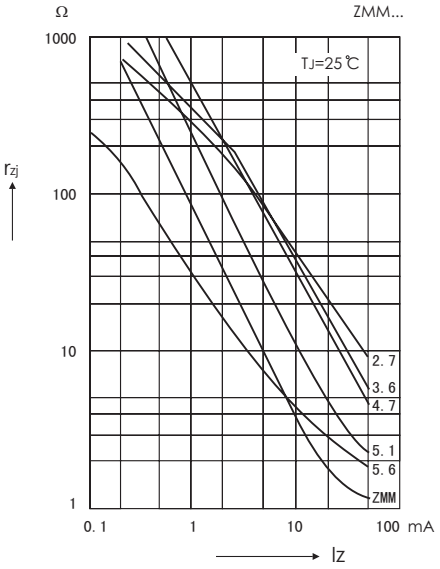
valid provided that electrodes are kept at ambient temperature



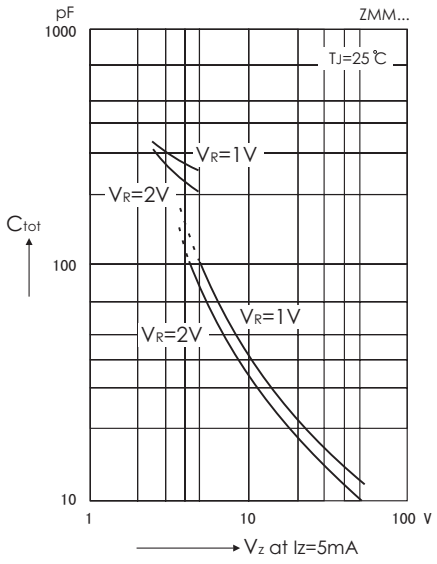
Pulse thermal resistance versus pulse duration



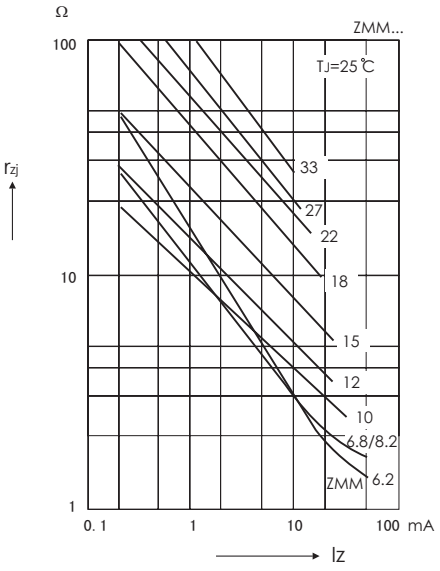
Dynamic resistance versus Zener current



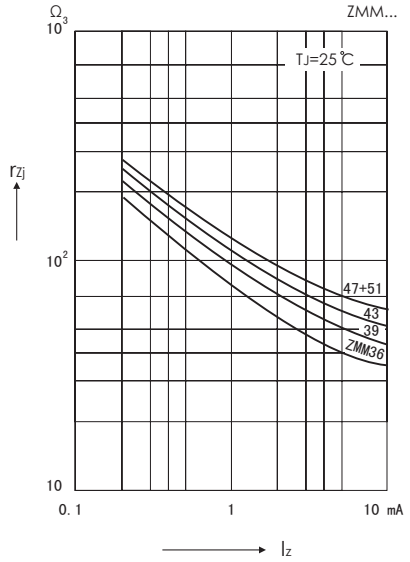
Capacitance versus Zener voltage



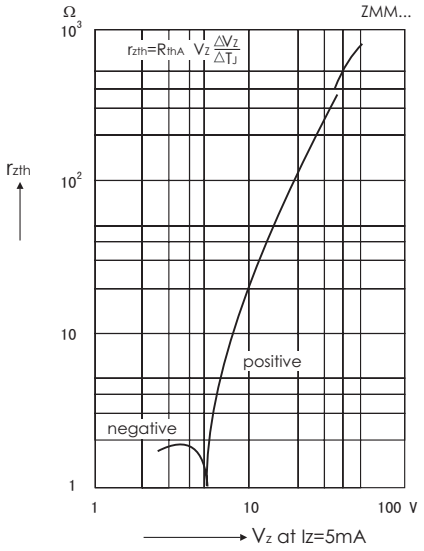
Dynamic resistance versus Zener current



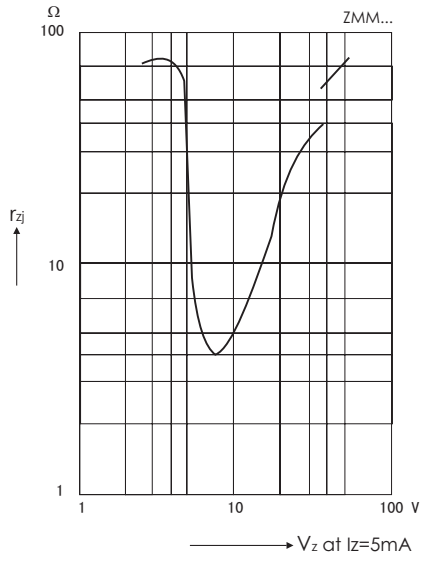
Dynamic resistance versus Zener current



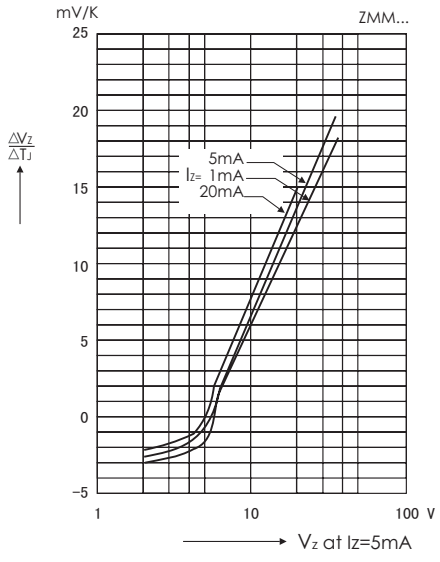
Thermal differential resistance versus Zener voltage



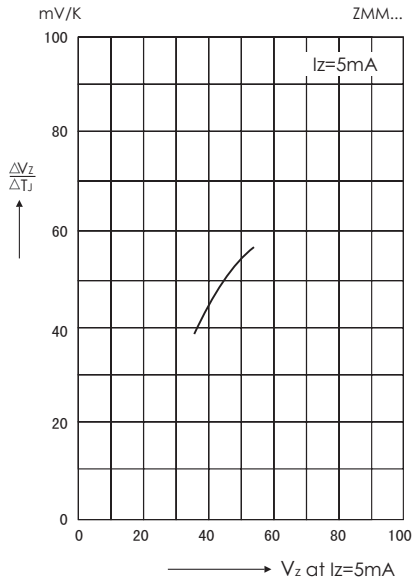
Dynamic resistance versus Zener voltage



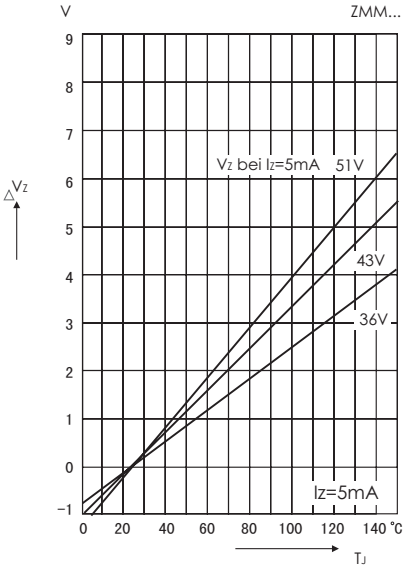
Temperature dependence of Zener voltage versus voltage



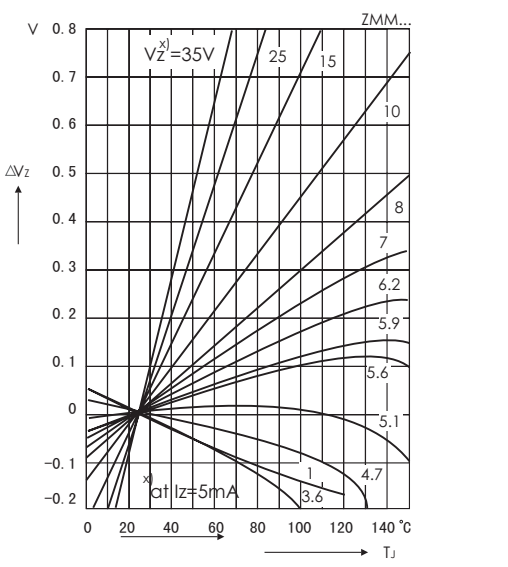
Temperature dependence of Zener voltage versus voltage



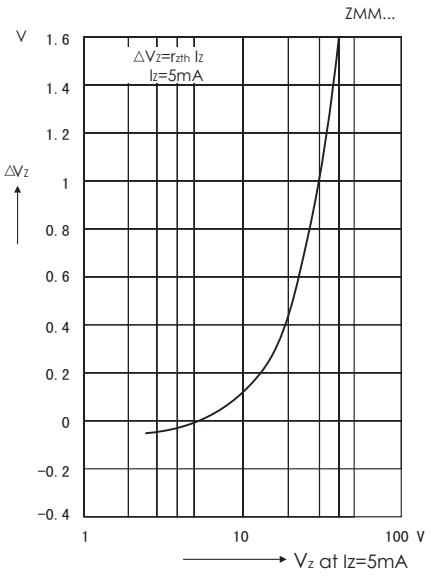
Change of Zener voltage versus junction temperature



Change of Zener voltage versus junction temperature



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



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