ZMM1-ZMM75V
Silicon Epitaxial Planar Zener Diodes

Features

MiniMELF case especially for automatic insertion. The Zener voltages are graded according to theinternational E24 standard. Smaller voltage tolerancesand higher Zener voltages are upon request. These diodes are also available in DO-35 case withthe type designation BZX55C.

LL-34

Absolute Maximum Ratings (T_a = 25℃)

Parameter	Symbol	Value	Unit
Power Dissipation [1)]	P_{tot}	500	mW
Junction Temperature	T_j	175	℃
Storage Temperature Range	T_{stg}	- 55 to + 175	℃

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance Junction to Ambient [1)]	$R_{\theta JA}$	300	℃/W

[1)] Valid provided that electrodes are kept at ambient temperature.

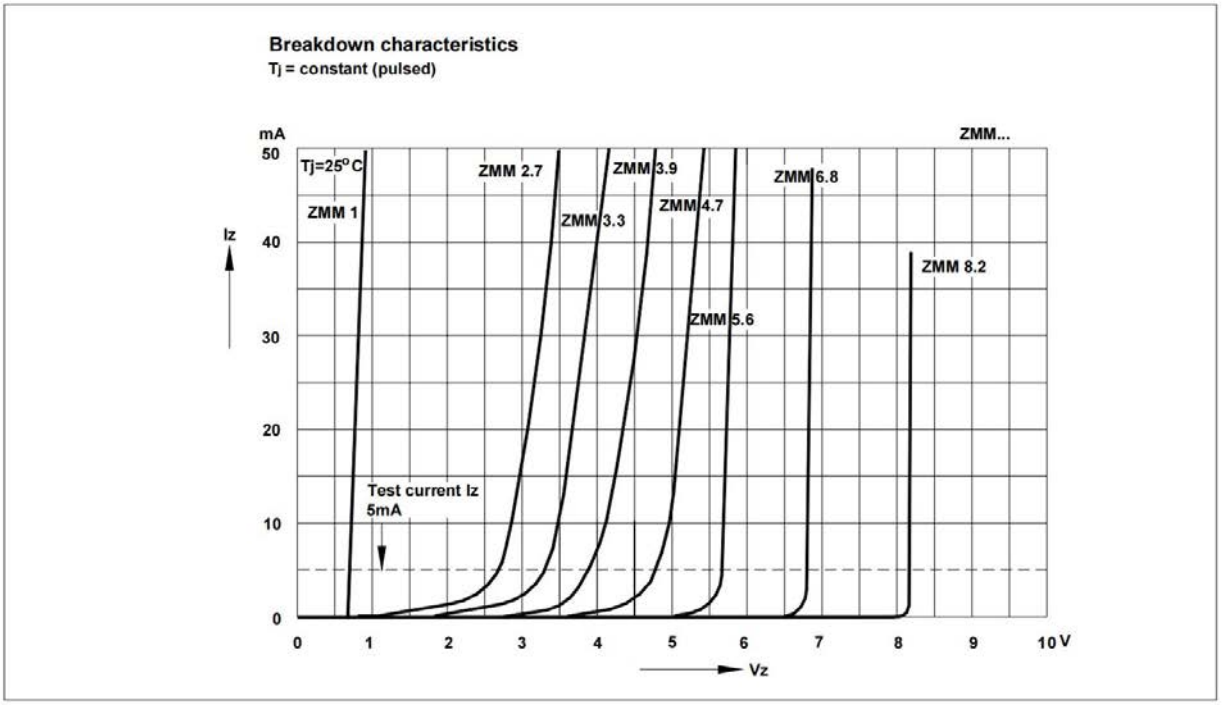
Characteristics at T_a = 25 °C

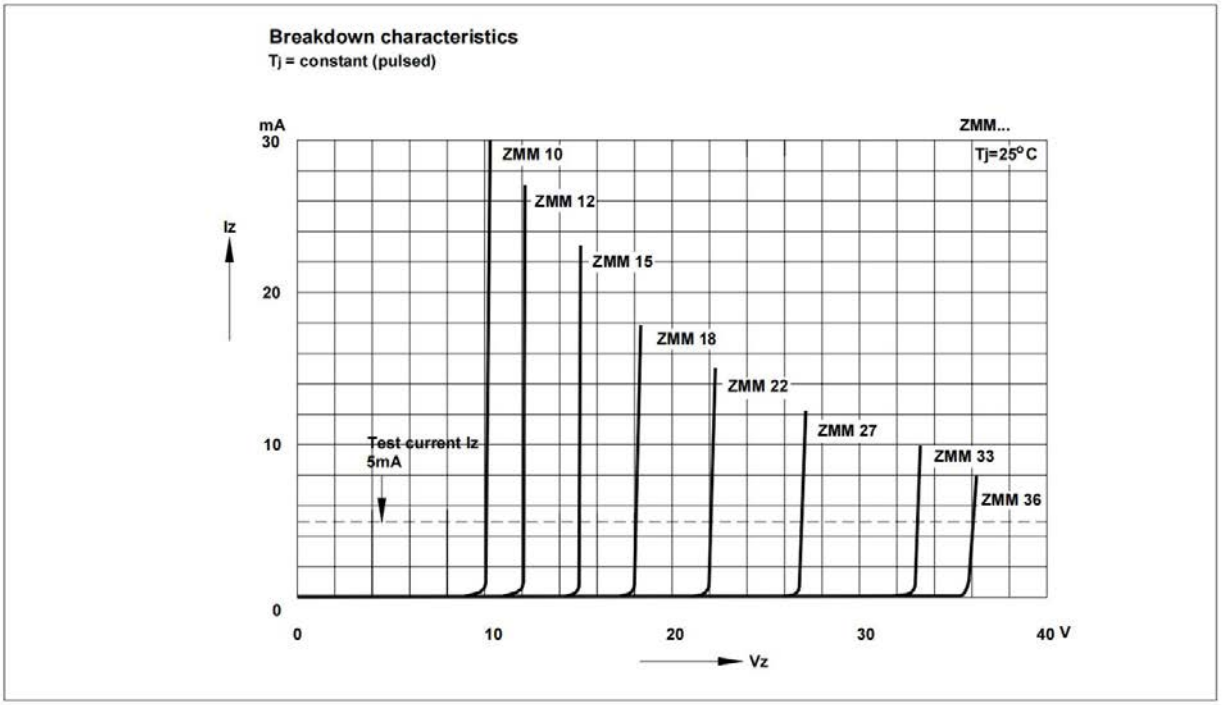
Type	Zener Voltage Range [1]			Dynamic Resistance			Reverse Leakage Current			Temp. Coefficient of Zener Voltage
	V_{Znom}	V_{ZT}	at I_{ZT}	Z_{ZT}	Z_{ZK}	at I_{ZK}	T_a = 25 °C	T_a = 125 °C	at V_R	
	(V)	(V)	(mA)	Max. (Ω)	Max. (Ω)	(mA)	Max. (µA)	Max. (µA)	(V)	TKvz (%/K)
ZMM1[2]	0.75	0.7...0.8	5	8	50	1	-	-	-	-0.26...-0.23
ZMM2V0	2	1.8...2.15	5	85	600	1	100	200	1	-0.09...-0.06
ZMM2V2	2.2	2.08...2.33	5	85	600	1	75	160	1	-0.09...-0.06
ZMM2V4	2.4	2.28...2.56	5	85	600	1	50	100	1	-0.09...-0.06
ZMM2V7	2.7	2.5...2.9	5	85	600	1	10	50	1	-0.09...-0.06
ZMM3V0	3	2.8...3.2	5	85	600	1	4	40	1	-0.08...-0.05
ZMM3V3	3.3	3.1...3.5	5	85	600	1	2	40	1	-0.08...-0.05
ZMM3V6	3.6	3.4...3.8	5	85	600	1	2	40	1	-0.08...-0.05
ZMM3V9	3.9	3.7...4.1	5	85	600	1	2	40	1	-0.08...-0.05
ZMM4V3	4.3	4...4.6	5	75	600	1	1	20	1	-0.06...-0.03
ZMM4V7	4.7	4.4...5	5	60	600	1	0.5	10	1	-0.05...+0.02
ZMM5V1	5.1	4.8...5.4	5	35	550	1	0.1	2	1	-0.02...+0.02
ZMM5V6	5.6	5.2...6	5	25	450	1	0.1	2	1	-0.05...+0.05
ZMM6V2	6.2	5.8...6.6	5	10	200	1	0.1	2	2	0.03...0.06
ZMM6V8	6.8	6.4...7.2	5	8	150	1	0.1	2	3	0.03...0.07
ZMM7V5	7.5	7...7.9	5	7	50	1	0.1	2	5	0.03...0.07
ZMM8V2	8.2	7.7...8.7	5	7	50	1	0.1	2	6.2	0.03...0.08
ZMM9V1	9.1	8.5...9.6	5	10	50	1	0.1	2	6.8	0.03...0.09
ZMM10V	10	9.4...10.6	5	15	70	1	0.1	2	7.5	0.03...0.1
ZMM11V	11	10.4...11.6	5	20	70	1	0.1	2	8.2	0.03...0.11
ZMM12V	12	11.4...12.7	5	20	90	1	0.1	2	9.1	0.03...0.11
ZMM13V	13	12.4...14.1	5	26	110	1	0.1	2	10	0.03...0.11
ZMM15V	15	13.8...15.6	5	30	110	1	0.1	2	11	0.03...0.11
ZMM16V	16	15.3...17.1	5	40	170	1	0.1	2	12	0.03...0.11
ZMM18V	18	16.8...19.1	5	50	170	1	0.1	2	13	0.03...0.11
ZMM20V	20	18.8...21.2	5	55	220	1	0.1	2	15	0.03...0.11
ZMM22V	22	20.8...23.3	5	55	220	1	0.1	2	16	0.04...0.12
ZMM24V	24	22.8...25.6	5	80	220	1	0.1	2	18	0.04...0.12
ZMM27V	27	25.1...28.9	5	80	220	1	0.1	2	20	0.04...0.12
ZMM30V	30	28...32	5	80	220	1	0.1	2	22	0.04...0.12
ZMM33V	33	31...35	5	80	220	1	0.1	2	24	0.04...0.12
ZMM36V	36	34...38	5	80	220	1	0.1	2	27	0.04...0.12
ZMM39V	39	37...41	2.5	90	500	0.5	0.1	5	30	0.04...0.12
ZMM43V	43	40...46	2.5	90	500	0.5	0.1	5	33	0.04...0.12
ZMM47V	47	44...50	2.5	110	600	0.5	0.1	5	36	0.04...0.12
ZMM51V	51	48...54	2.5	125	700	0.5	0.1	10	39	0.04...0.12
ZMM56V	56	52...60	2.5	135	700	0.5	0.1	10	43	0.04...0.12
ZMM62V	62	58...66	2.5	150	1000	0.5	0.1	10	47	0.04...0.12
ZMM68V	68	64...72	2.5	200	1000	0.5	0.1	10	51	0.04...0.12
ZMM75V	75	70...79	2.5	250	1000	0.5	0.1	10	56	0.04...0.12

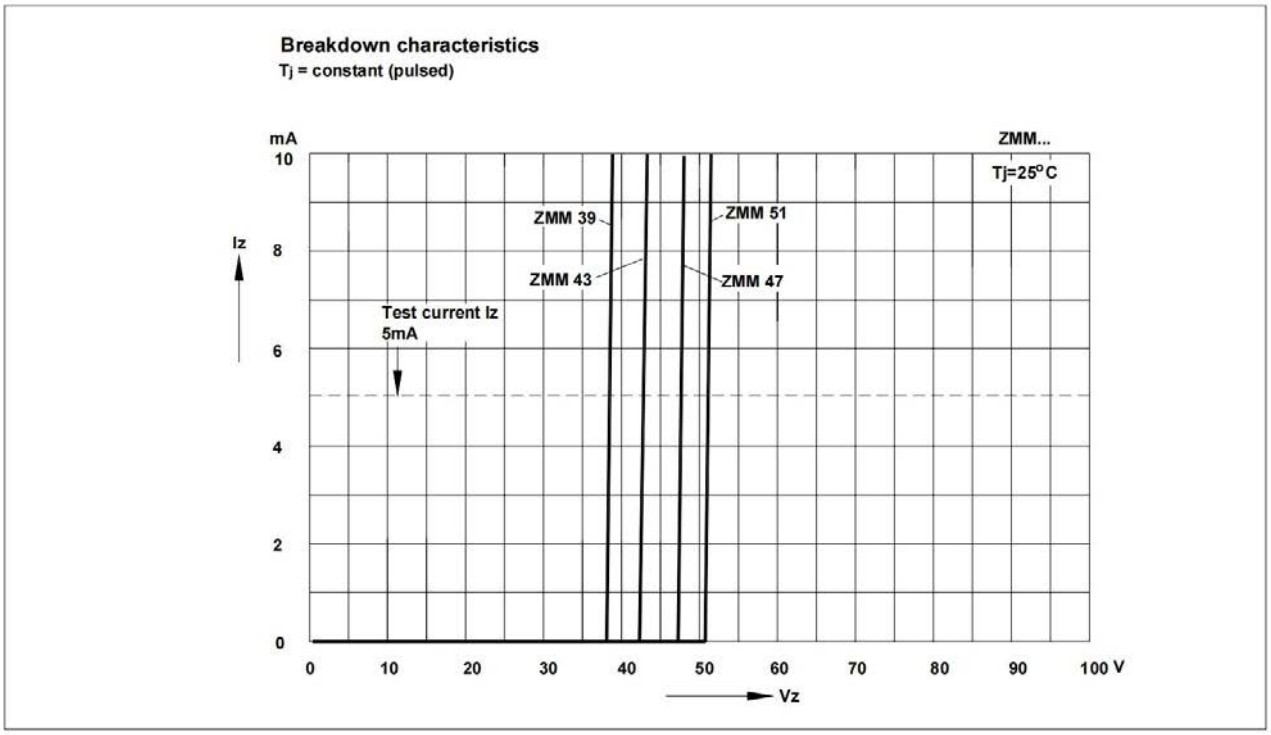
[1] Tested with pulses t_p = 20 ms.

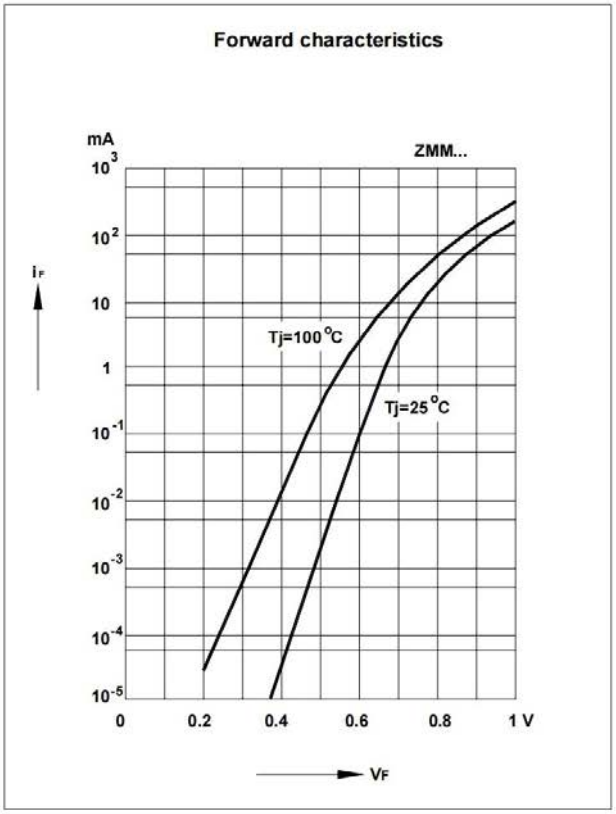
[2] The ZMM1 is a silicon diode with operation in forward direction. Hence, the index of all parameters should be "F" instead of "Z". Connect the cathode electrode to the negative pole.

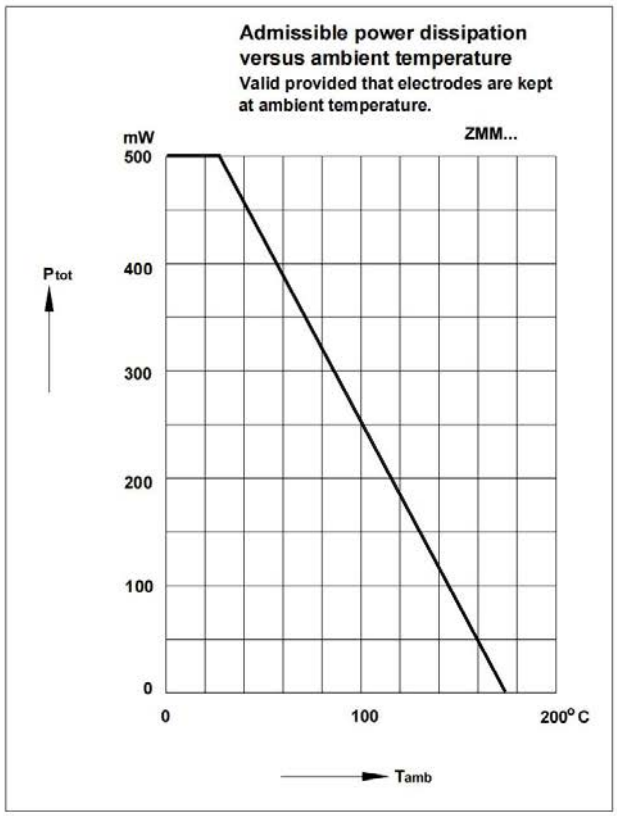
Typical Characteristics



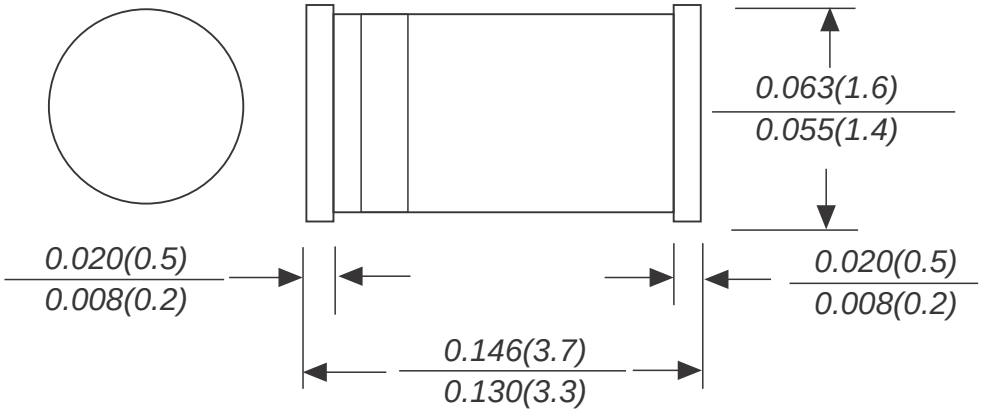



Breakdown characteristics
Tj = constant (pulsed)
mA
ZMM...
Tj=25°C
ZMM 39
ZMM 51
ZMM 43
ZMM 47
Iz
Test current Iz
5mA
10
8
6
4
2
0
0
10
20
30
40
50
60
70
80
90
100 V
Vz


Forward characteristics
mA
ZMM...
iF
Tj=100°C
Tj=25°C
10^3
10^2
10
1
10^-1
10^-2
10^-3
10^-4
10^-5
0
0.2
0.4
0.6
0.8
1 V
VF


Admissible power dissipation
versus ambient temperature
Valid provided that electrodes are kept
at ambient temperature.
mW
ZMM...
Ptot
500
400
300
200
100
0
0
100
200° C
Tamb

LL-34 Package Information



Dimensions in inches and (millimeters)

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