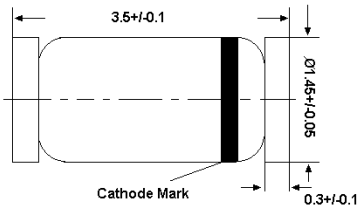
Silicon Epitaxial Planar Zener Diodes

in MiniMELF case especially for automatic insertion.
The Zener voltages are graded according to the international E24 standard. Smaller voltage tolerances and higher Zener voltages are upon request.

LL34



Glass case MiniMELF
Dimensions in mm

Absolute Maximum Ratings (T_a = 25 °C)

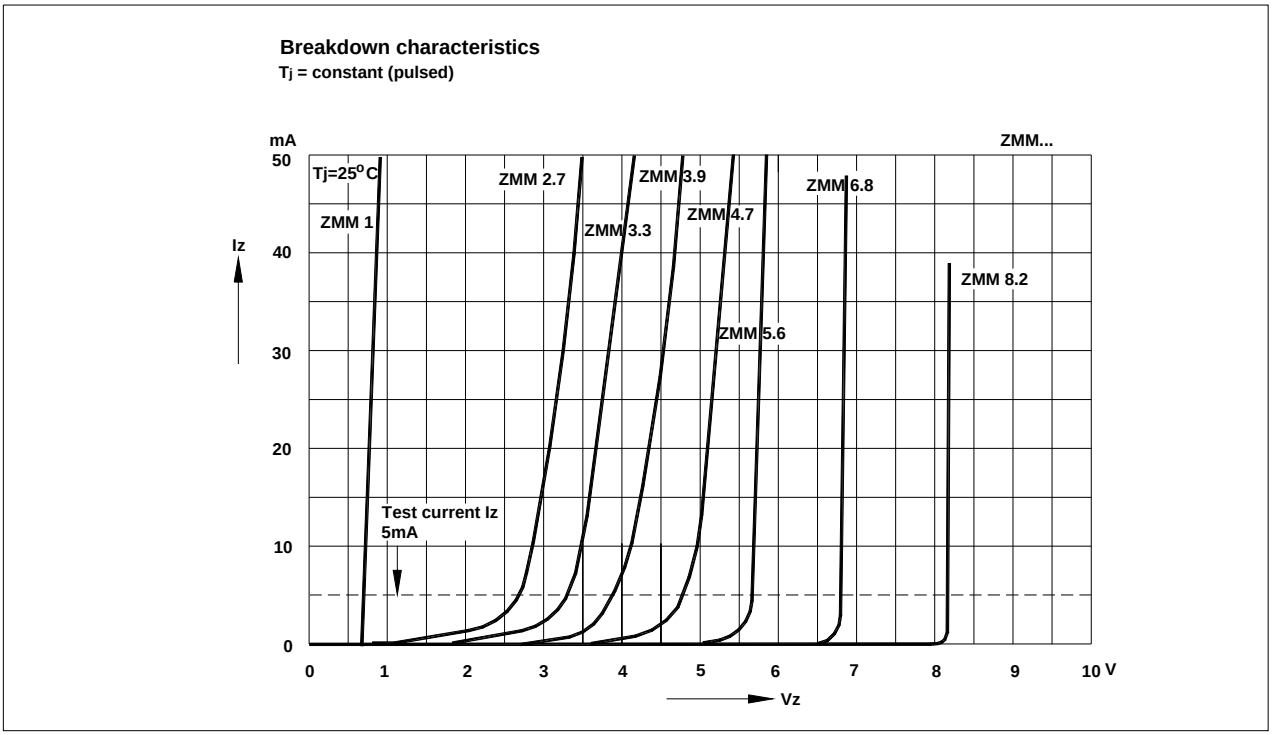
Parameter	Symbol	Value	Unit
Power Dissipation	P_{tot}	500 [1]	mW
Junction Temperature	T_j	175	°C
Storage Temperature Range	T_{stg}	- 55 to + 175	°C
[1] Valid provided that electrodes are kept at ambient temperature			

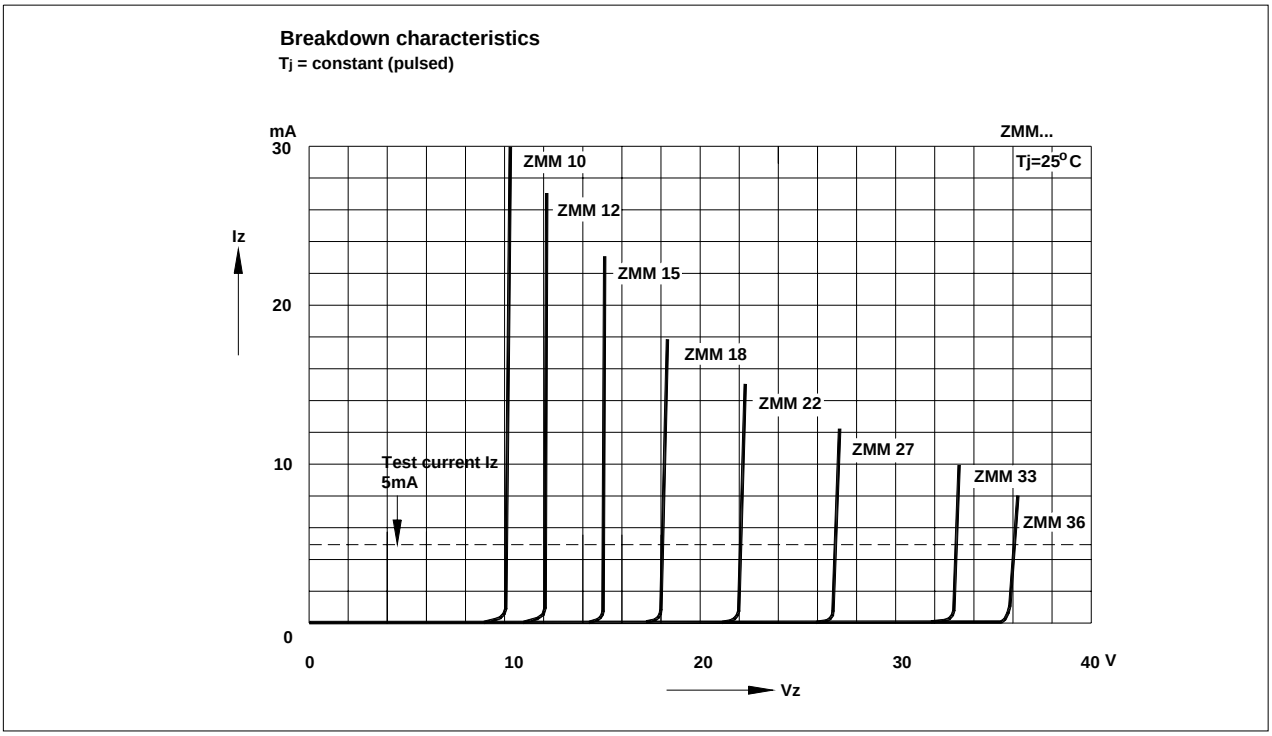
Characteristics at T_a = 25 °C

Parameter	Symbol	Max.	Unit
Thermal Resistance Junction to Ambient Air	R_{thA}	0.3 [1]	K/mW
Forward Voltage at I_F = 100 mA	V_F	1	V
Reverse Leakage Current	I_R	0.2	µA
[1] Valid provided that electrodes are kept at ambient temperature			

Characteristics at T_a = 25 °C

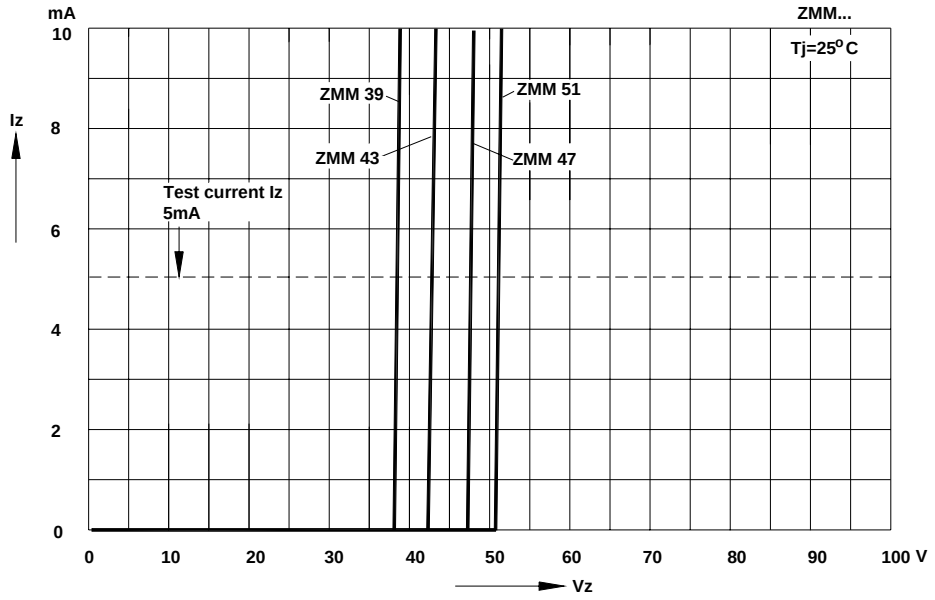
Type	Zener Voltage Range [1]			Dynamic Resistance			Reverse Leakage Current			Temp. Coefficient of Zener Voltage
	V_{Znom}	V_{ZT}	at I_{ZT}	Z_{ZT}	Z_{ZK}	at I_{ZK}	T_a = 25 °C	T_a = 125 °C	at V_R	
	(V)	(V)	(mA)	Max. (Ω)	Max. (Ω)	(mA)	Max. (µA)	Max. (µA)	(V)	TKvz (%/K)
ZMM16B	16	15.68…16.32	5	40	170	1	0.1	2	12	0.03...0.11


Breakdown characteristics
Tj = constant (pulsed)
mA
ZMM...
Tj=25°C
ZMM 1
ZMM 2.7
ZMM 3.3
ZMM 3.9
ZMM 4.7
ZMM 5.6
ZMM 6.8
ZMM 8.2
Iz
Test current Iz
5mA
0
10
20
30
40
50
0
1
2
3
4
5
6
7
8
9
10 V
Vz

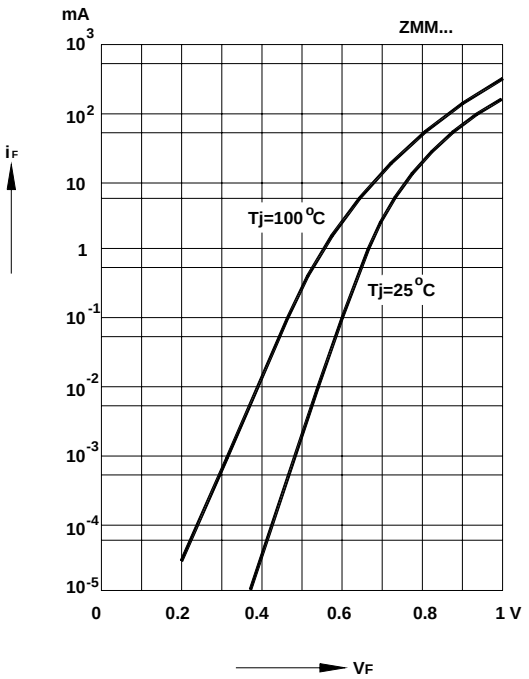

Breakdown characteristics
Tj = constant (pulsed)
mA
ZMM...
Tj=25°C
ZMM 10
ZMM 12
ZMM 15
ZMM 18
ZMM 22
ZMM 27
ZMM 33
ZMM 36
Iz
Test current Iz
5mA
0
10
20
30
0
10
20
30
40 V
Vz

Breakdown characteristics

T_j = constant (pulsed)

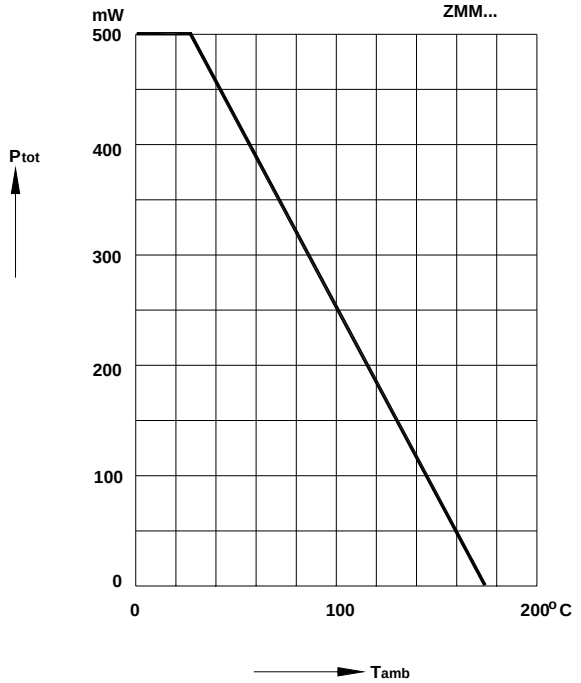


Forward characteristics



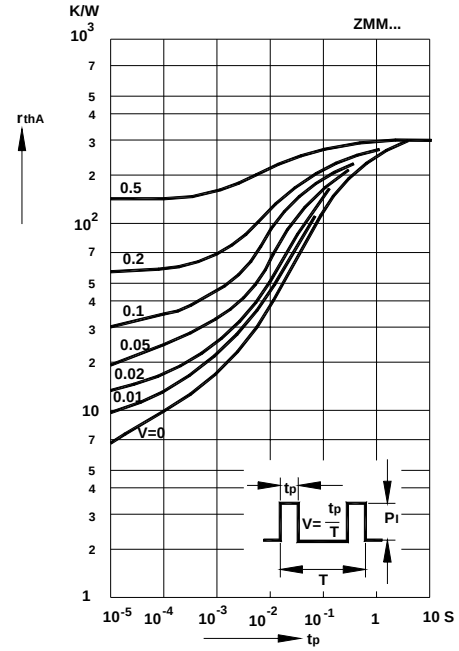
Admissible power dissipation versus ambient temperature

Valid provided that electrodes are kept at ambient temperature.

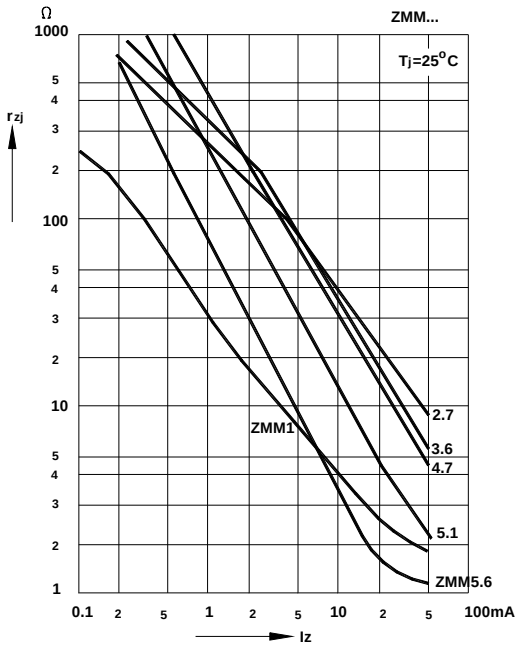


Pulse thermal resistance versus pulse duration

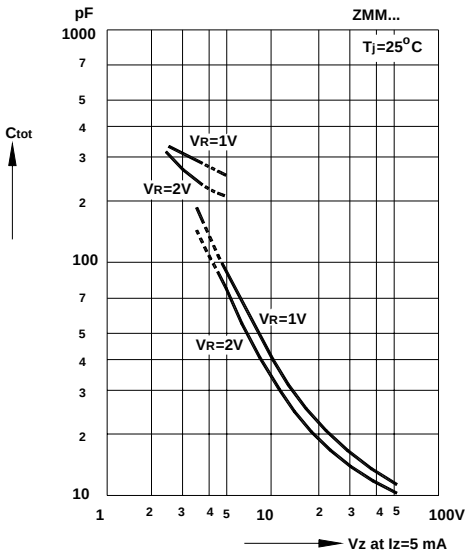
Valid provided that the electrodes are kept at ambient temperature.



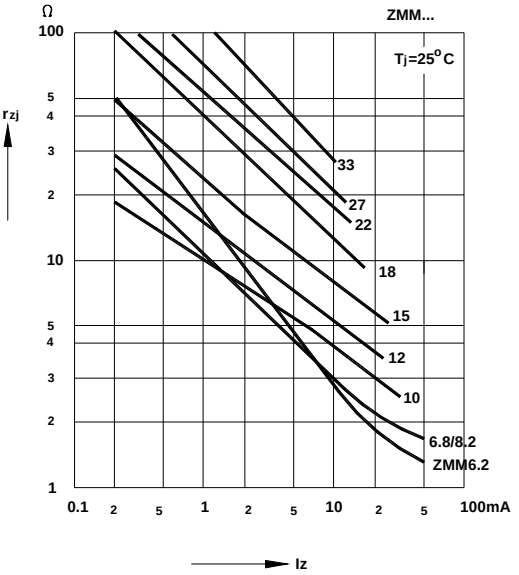
Dynamic resistance versus Zener current



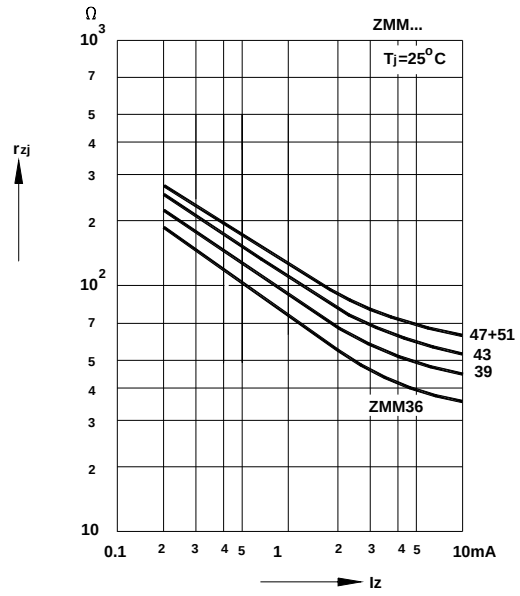
Capacitance versus Zener voltage



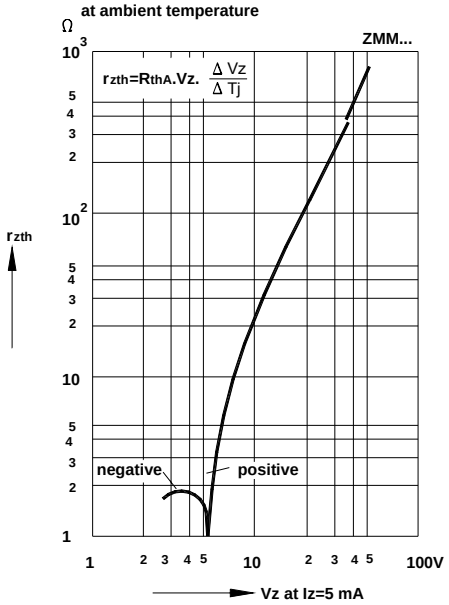
Dynamic resistance versus Zener current



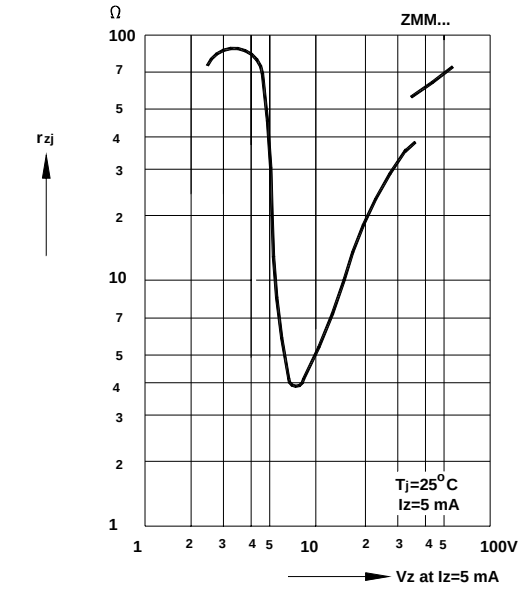
Dynamic resistance versus Zener current



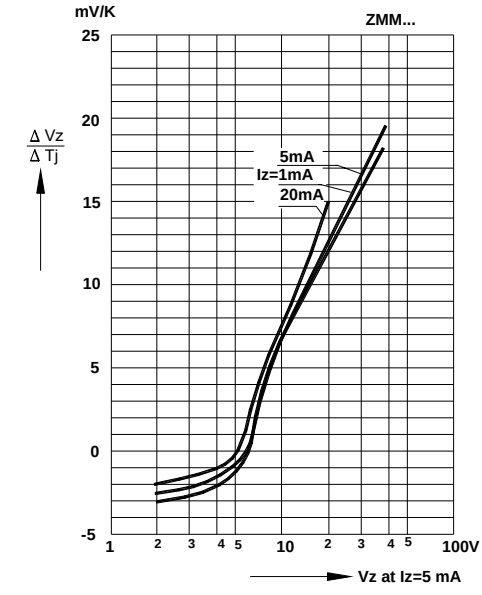
Thermal differential resistance versus Zener voltage
Valid provided that electrodes are kept at ambient temperature



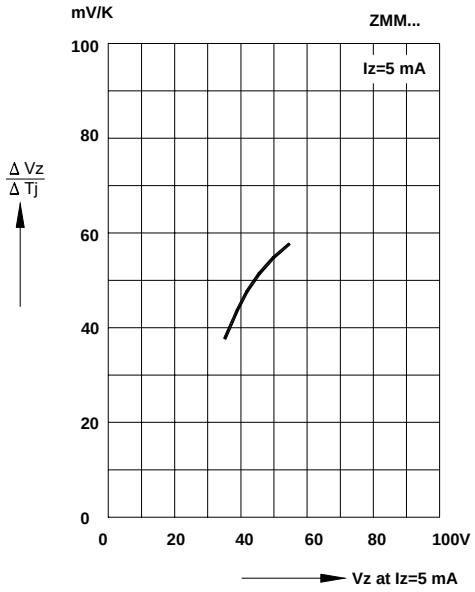
Dynamic resistance versus Zener voltage



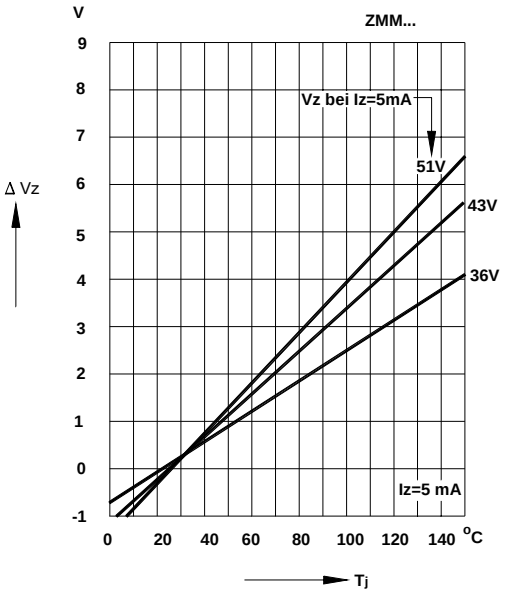
Temperature dependence of Zener voltage versus Zener voltage



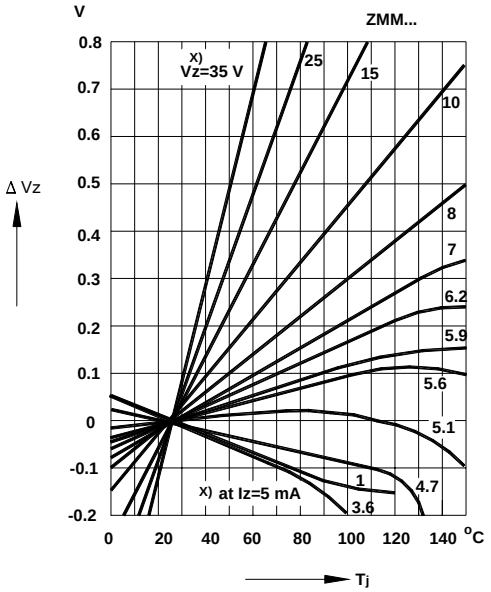
Temperature dependence of Zener voltage versus Zener voltage



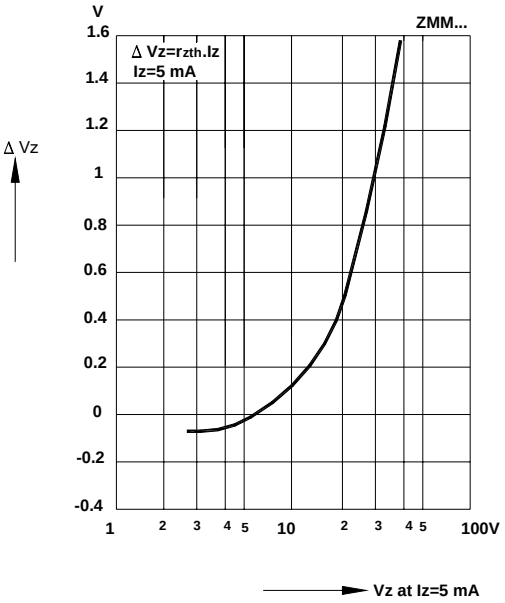
Change of Zener voltage versus junction temperature

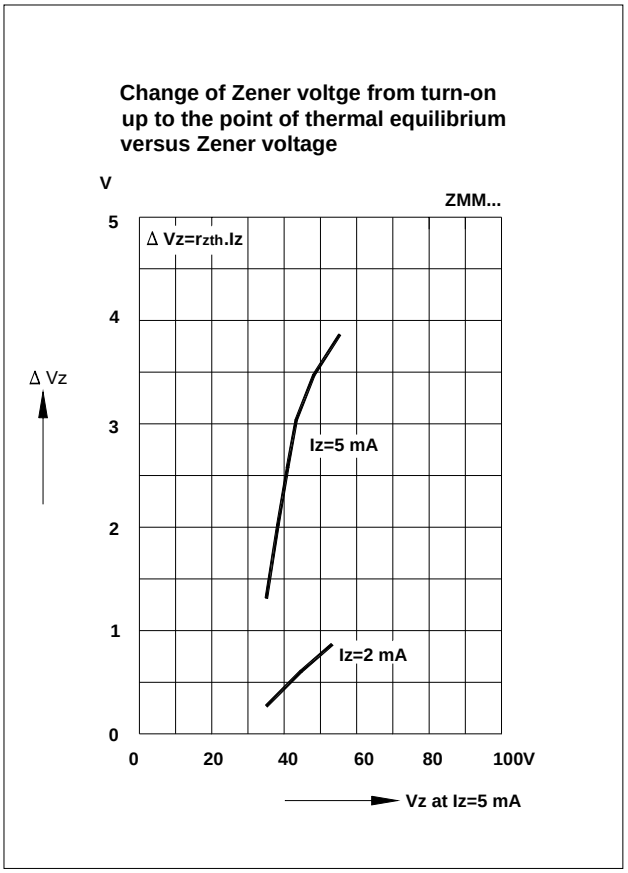


Change of Zener voltage versus junction temperature



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




Change of Zener voltge from turn-on
up to the point of thermal equilibrium
versus Zener voltage
V
ZMM...
5
4
3
2
1
0
Δ Vz=rzth.Iz
Δ Vz
Iz=5 mA
Iz=2 mA
0
20
40
60
80
100V
Vz at Iz=5 mA