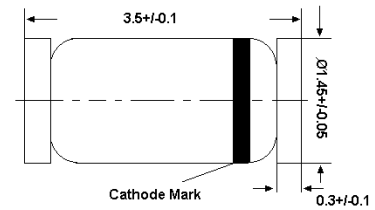


# ZMM1V0 THRU ZMM75

## 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.

LL-34



Glass case MiniMELF  
 Dimensions in mm

### Absolute Maximum Ratings ( $T_a = 25\text{ }^\circ\text{C}$ )

| Parameter                 | Symbol           | Value             | Unit             |
|---------------------------|------------------|-------------------|------------------|
| Power Dissipation         | $P_{\text{tot}}$ | 500 <sup>1)</sup> | mW               |
| Junction Temperature      | $T_j$            | 175               | $^\circ\text{C}$ |
| Storage Temperature Range | $T_{\text{stg}}$ | - 55 to + 175     | $^\circ\text{C}$ |

<sup>1)</sup> Valid provided that electrodes are kept at ambient temperature

### Characteristics at $T_a = 25\text{ }^\circ\text{C}$

| Parameter                                   | Symbol           | Max.              | Unit |
|---|------------------|-------------------|------|
| Thermal Resistance Junction to Ambient Air  | $R_{\text{thA}}$ | 0.3 <sup>1)</sup> | K/mW |
| Forward Voltage<br>at $I_F = 100\text{ mA}$ | $V_F$            | 1                 | V    |

<sup>1)</sup> Valid provided that electrodes are kept at ambient temperature

# ZMM1V0 THRU ZMM75

## Characteristics at $T_a = 25\text{ °C}$

| Type   | Zener Voltage Range <sup>1)</sup> |             |             | Dynamic Resistance |                   |             | Reverse Leakage Current |                       |          | Temp. Coefficient of Zener Voltage |
|--------|-----------------------------------|-------------|-------------|--------------------|-------------------|-------------|-------------------------|-----------------------|----------|------------------------------------|
|        | $V_{Znom}$                        | $V_{ZT}$    | at $I_{ZT}$ | $Z_{ZT}$           | $Z_{ZK}$          | at $I_{ZK}$ | $T_a = 25\text{ °C}$    | $T_a = 125\text{ °C}$ | at $V_R$ |                                    |
|        | (V)                               | (V)         | (mA)        | Max. ( $\Omega$ )  | Max. ( $\Omega$ ) | (mA)        | Max. ( $\mu A$ )        | Max. ( $\mu A$ )      | (V)      |                                    |
| ZMM1V0 | 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                        |
| ZMM10  | 10                                | 9.4...10.6  | 5           | 15                 | 70                | 1           | 0.1                     | 2                     | 7.5      | 0.03...0.1                         |
| ZMM11  | 11                                | 10.4...11.6 | 5           | 20                 | 70                | 1           | 0.1                     | 2                     | 8.2      | 0.03...0.11                        |
| ZMM12  | 12                                | 11.4...12.7 | 5           | 20                 | 90                | 1           | 0.1                     | 2                     | 9.1      | 0.03...0.11                        |
| ZMM13  | 13                                | 12.4...14.1 | 5           | 26                 | 110               | 1           | 0.1                     | 2                     | 10       | 0.03...0.11                        |
| ZMM15  | 15                                | 13.8...15.6 | 5           | 30                 | 110               | 1           | 0.1                     | 2                     | 11       | 0.03...0.11                        |
| ZMM16  | 16                                | 15.3...17.1 | 5           | 40                 | 170               | 1           | 0.1                     | 2                     | 12       | 0.03...0.11                        |
| ZMM18  | 18                                | 16.8...19.1 | 5           | 50                 | 170               | 1           | 0.1                     | 2                     | 13       | 0.03...0.11                        |
| ZMM20  | 20                                | 18.8...21.2 | 5           | 55                 | 220               | 1           | 0.1                     | 2                     | 15       | 0.03...0.11                        |
| ZMM22  | 22                                | 20.8...23.3 | 5           | 55                 | 220               | 1           | 0.1                     | 2                     | 16       | 0.04...0.12                        |
| ZMM24  | 24                                | 22.8...25.6 | 5           | 80                 | 220               | 1           | 0.1                     | 2                     | 18       | 0.04...0.12                        |
| ZMM27  | 27                                | 25.1...28.9 | 5           | 80                 | 220               | 1           | 0.1                     | 2                     | 20       | 0.04...0.12                        |
| ZMM30  | 30                                | 28...32     | 5           | 80                 | 220               | 1           | 0.1                     | 2                     | 22       | 0.04...0.12                        |
| ZMM33  | 33                                | 31...35     | 5           | 80                 | 220               | 1           | 0.1                     | 2                     | 24       | 0.04...0.12                        |
| ZMM36  | 36                                | 34...38     | 5           | 80                 | 220               | 1           | 0.1                     | 2                     | 27       | 0.04...0.12                        |
| ZMM39  | 39                                | 37...41     | 2.5         | 90                 | 500               | 0.5         | 0.1                     | 5                     | 30       | 0.04...0.12                        |
| ZMM43  | 43                                | 40...46     | 2.5         | 90                 | 500               | 0.5         | 0.1                     | 5                     | 33       | 0.04...0.12                        |
| ZMM47  | 47                                | 44...50     | 2.5         | 110                | 600               | 0.5         | 0.1                     | 5                     | 36       | 0.04...0.12                        |
| ZMM51  | 51                                | 48...54     | 2.5         | 125                | 700               | 0.5         | 0.1                     | 10                    | 39       | 0.04...0.12                        |
| ZMM56  | 56                                | 52...60     | 2.5         | 135                | 700               | 0.5         | 0.1                     | 10                    | 43       | 0.04...0.12                        |
| ZMM62  | 62                                | 58...66     | 2.5         | 150                | 1000              | 0.5         | 0.1                     | 10                    | 47       | 0.04...0.12                        |
| ZMM68  | 68                                | 64...72     | 2.5         | 200                | 1000              | 0.5         | 0.1                     | 10                    | 51       | 0.04...0.12                        |
| ZMM75  | 75                                | 70...79     | 2.5         | 250                | 1000              | 0.5         | 0.1                     | 10                    | 56       | 0.04...0.12                        |

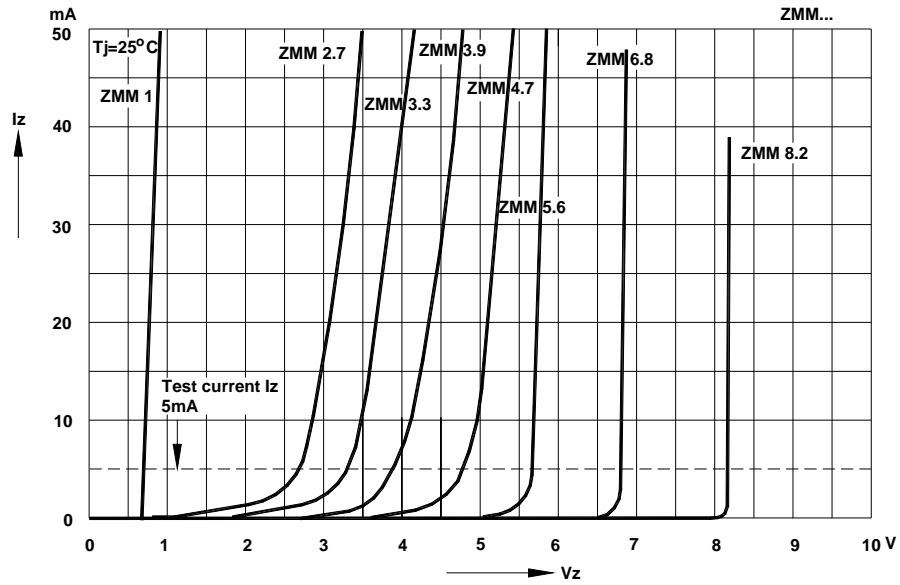
<sup>1)</sup> Tested with pulses  $t_p = 20\text{ ms}$ .

<sup>2)</sup> 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.

# ZMM1V0 THRU ZMM75

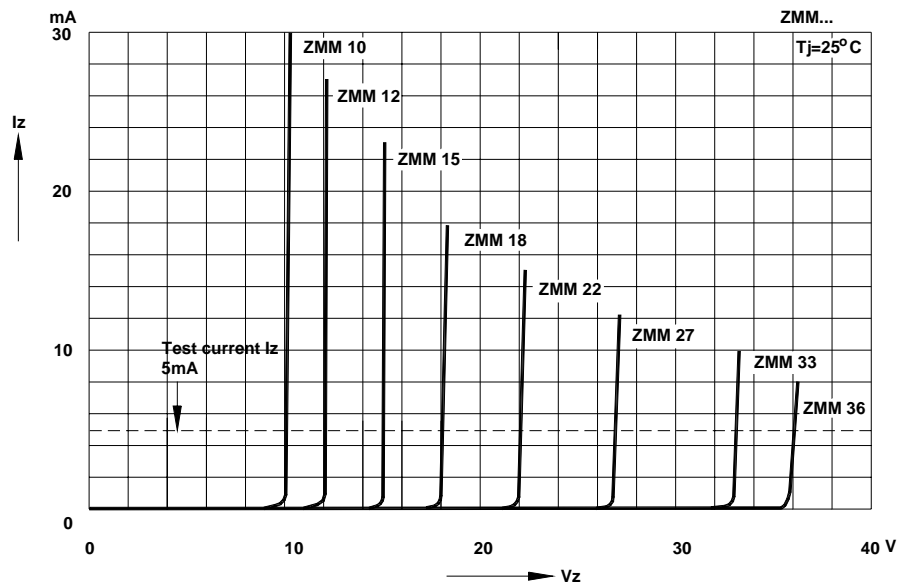
## Breakdown characteristics

$T_j = \text{constant (pulsed)}$



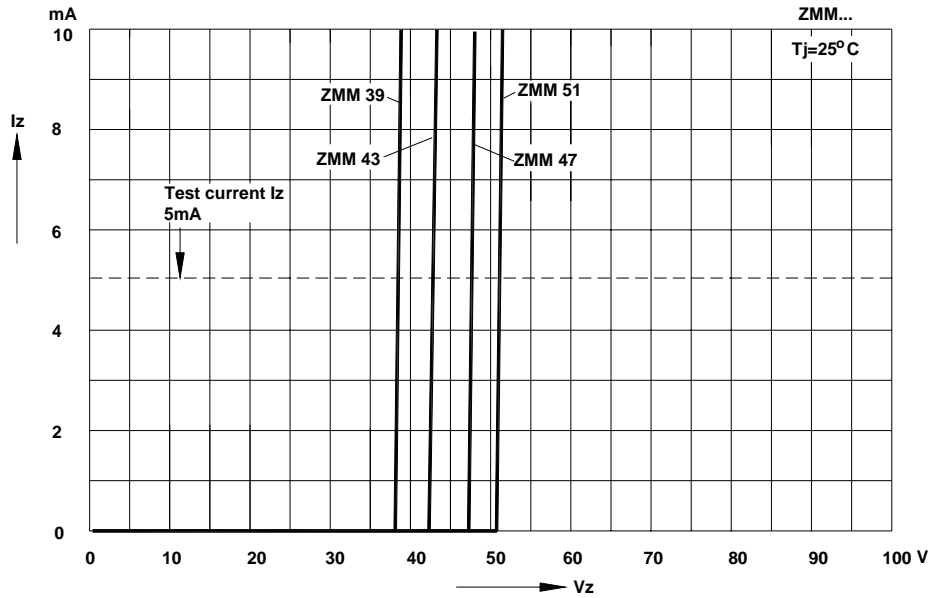
## Breakdown characteristics

$T_j = \text{constant (pulsed)}$

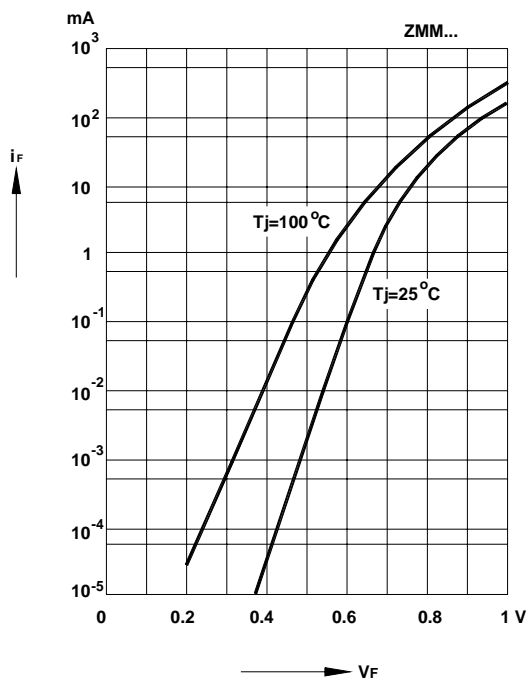


# ZMM1V0 THRU ZMM75

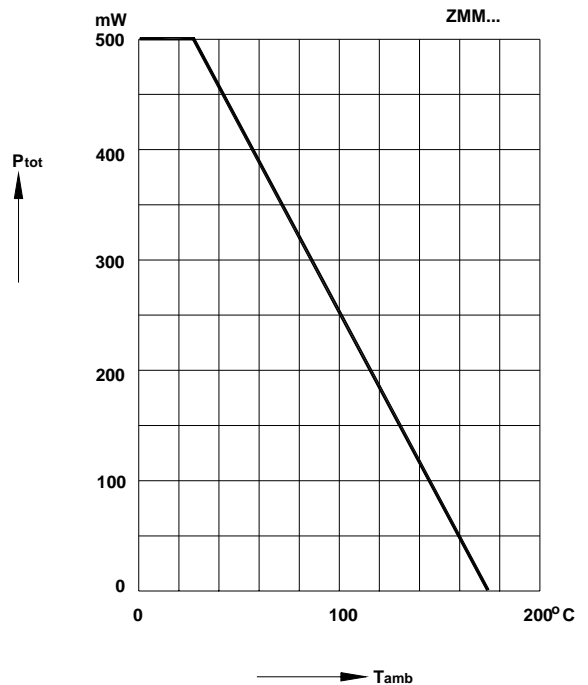
**Breakdown characteristics**  
 $T_j = \text{constant (pulsed)}$



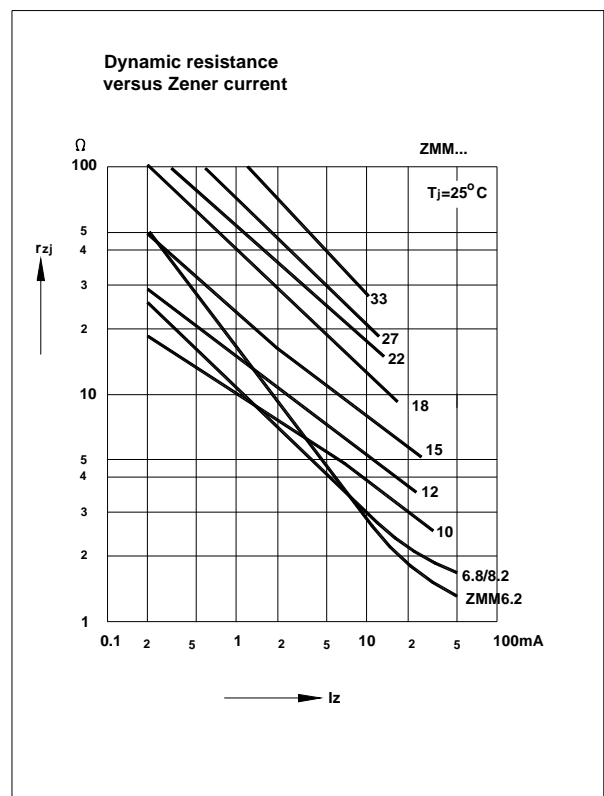
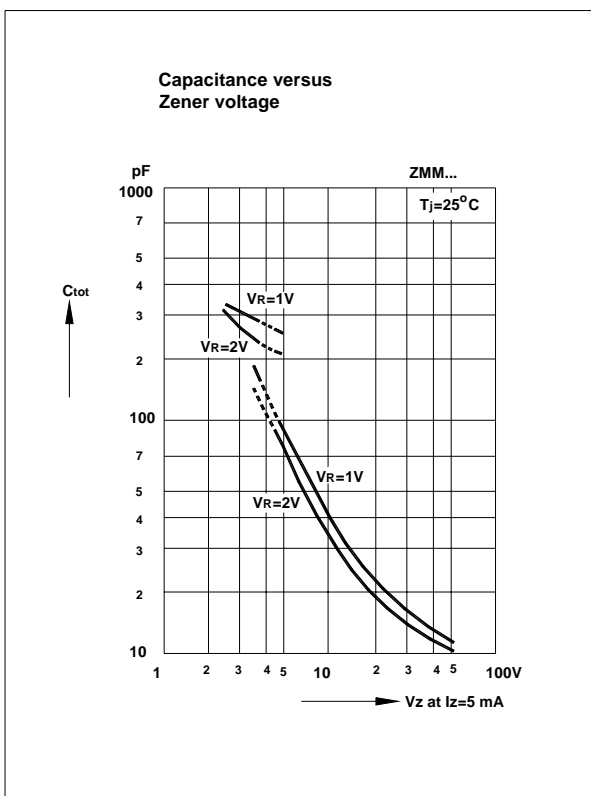
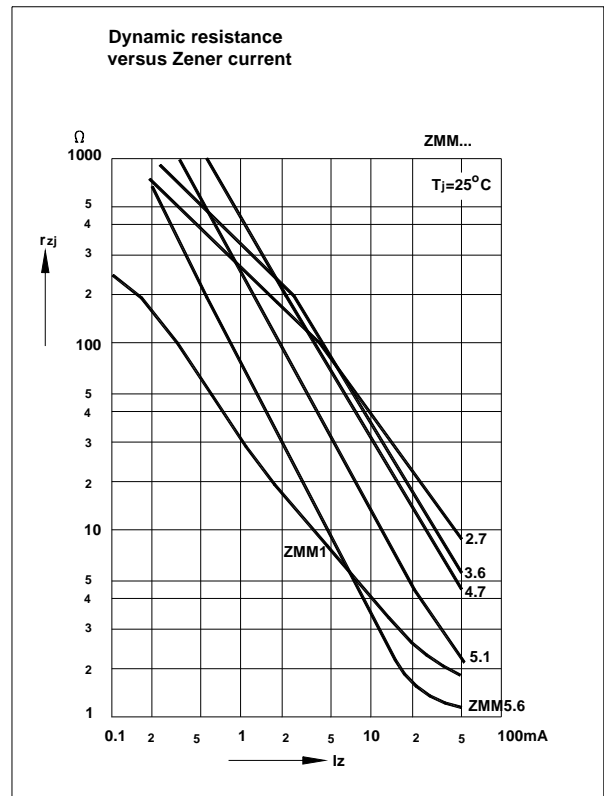
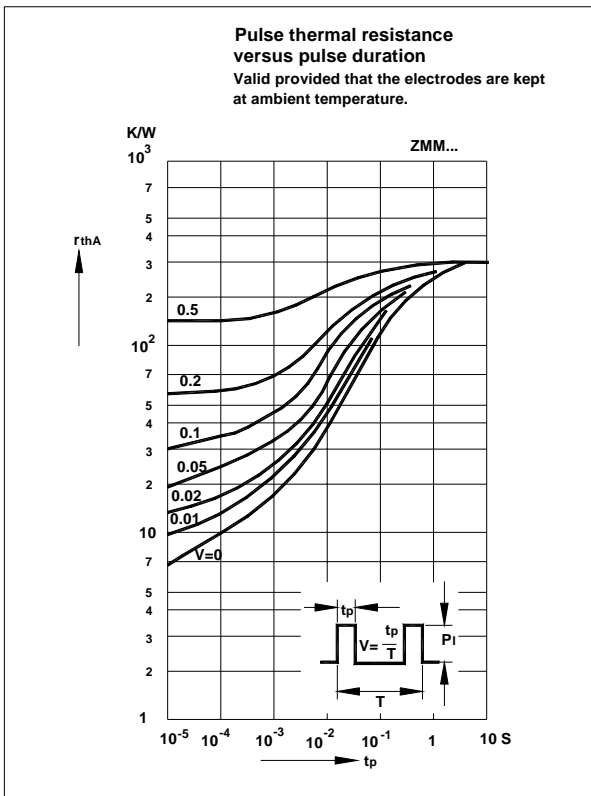
**Forward characteristics**



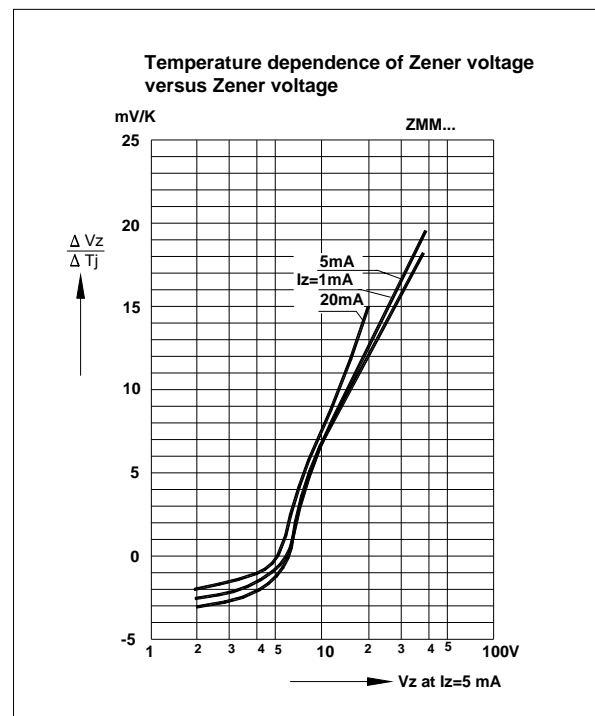
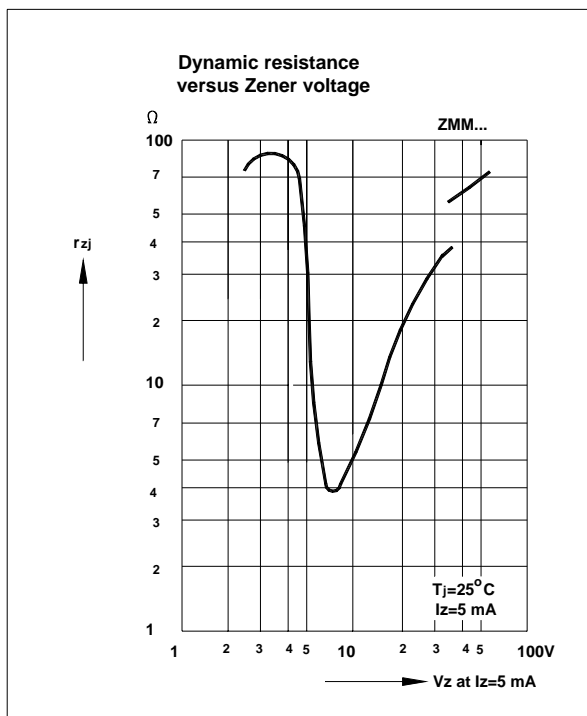
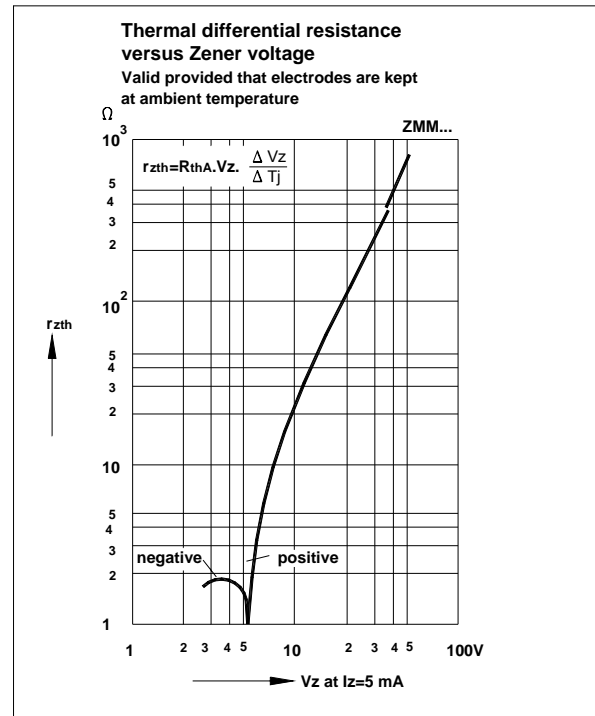
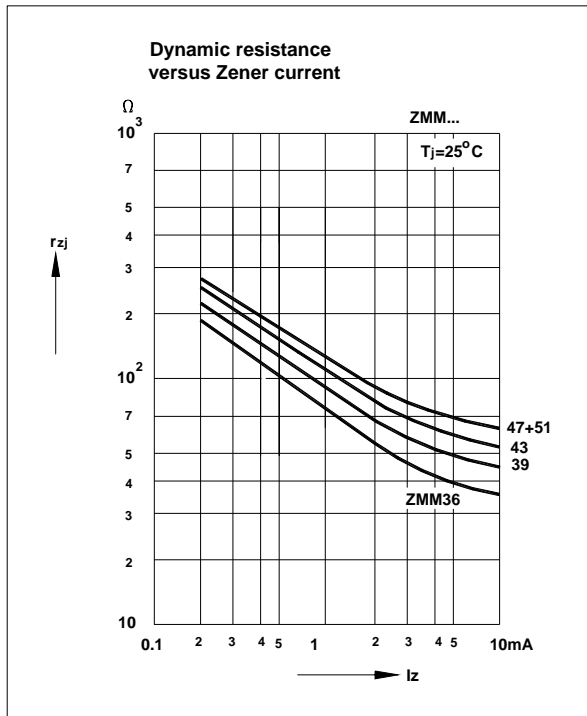
**Admissible power dissipation versus ambient temperature**  
 Valid provided that electrodes are kept at ambient temperature.



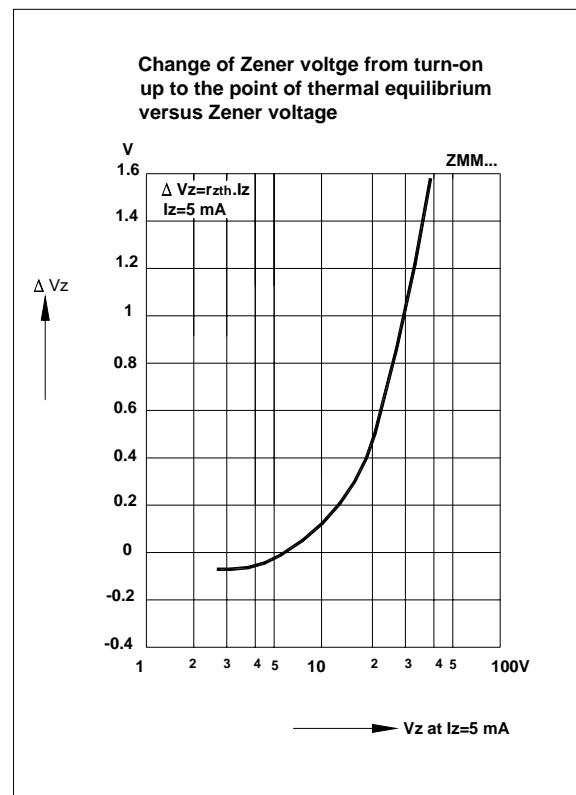
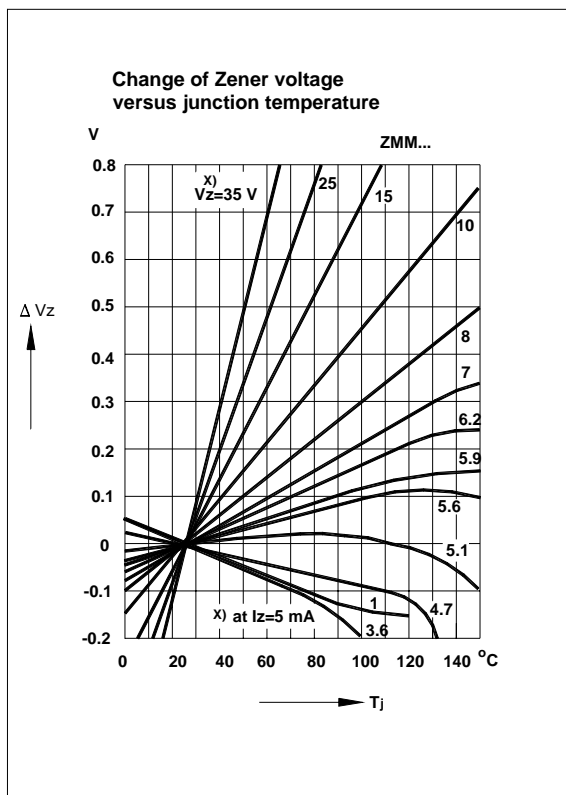
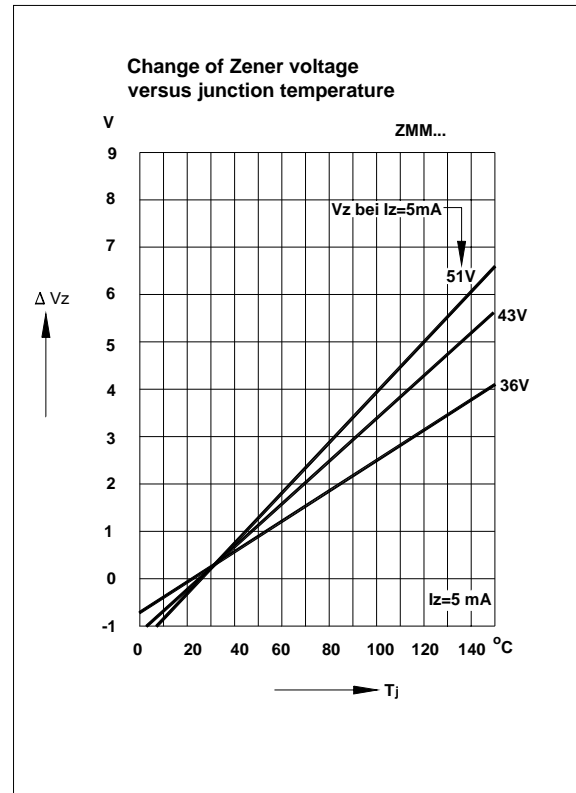
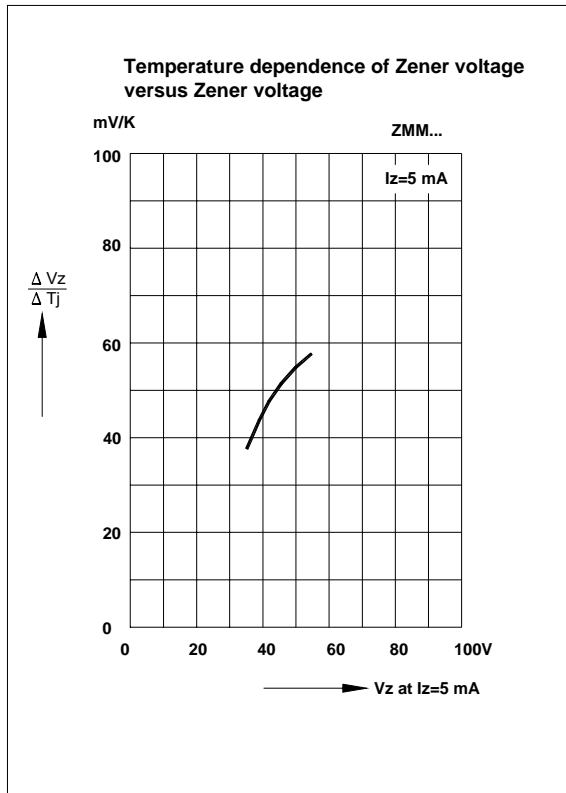
# ZMM1V0 THRU ZMM75



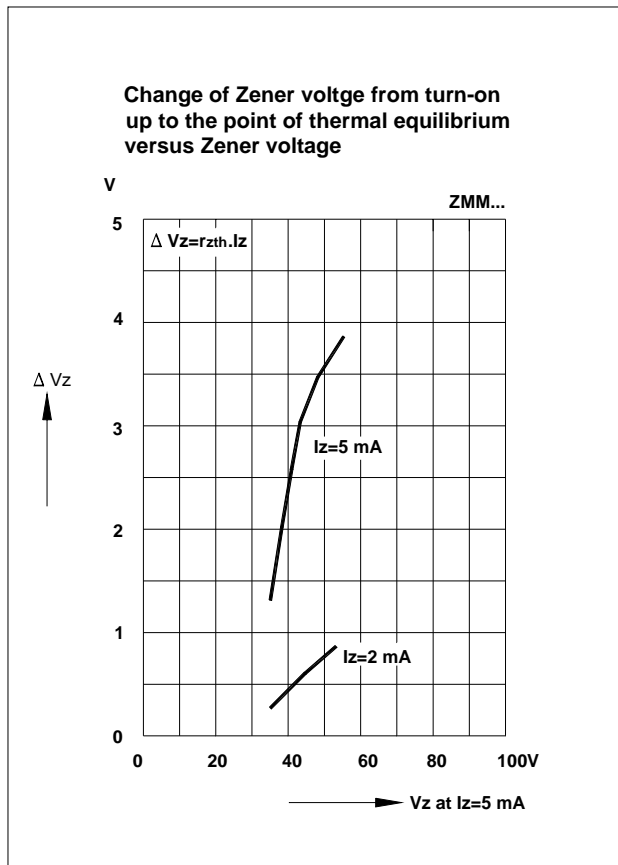
# ZMM1V0 THRU ZMM75



# ZMM1V0 THRU ZMM75



# ZMM1V0 THRU ZMM75





## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Zener Diodes](#) category:*

*Click to view products by [Yongyutai Electronics](#) manufacturer:*

Other Similar products are found below :

[RKZ13B2KG#P1](#) [DL5234B](#) [EDZTE6113B](#) [1N4682](#) [1N4693](#) [1N4732A](#) [1N4736A](#) [1N4750A](#) [1N4759ARL](#) [1N5241B](#) [1N5365B](#) [1N5369B](#)  
[1N747A](#) [1N964B](#) [1N966B](#) [1N968B](#) [1N972B](#) [JANS1N4974US](#) [JANTX1N5907](#) [1N4692](#) [1N4700](#) [1N4702](#) [1N4704](#) [1N4711](#) [1N4714](#)  
[1N4745ARL](#) [1N4752ARL](#) [1N4760ARL](#) [1N5221B](#) [1N5242BTR](#) [1N5350B](#) [1N5352B](#) [1N961BRR1](#) [1N964BRL](#) [RKZ5.1BKU#P6](#)  
[3SMAJ5946B-TP](#) [3SMAJ5950B-TP](#) [3SMBJ5925B-TP](#) [MMSZ5230BQ-13-F](#) [MMSZ5232BQ-13-F](#) [BZX84C7V5](#) [3SMAJ5945B-TP](#)  
[3SMAJ5947B-TP](#) [3SMBJ5941B-TP](#) [DL4732A-T3](#) [DZ2S240M0L](#) [SMAZ27-TP](#) [ZMM5224B-7](#) [RD16UM-T1-A](#) [RD39S-T1-A](#)