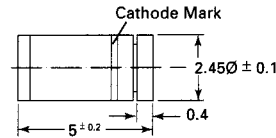


# ZMY 1 ... ZMY 100 (1W)

## Silicon Planar Power Zener Diodes

for use in stabilizing and clipping circuits with high power rating. The Zener voltages are graded according to the international E 24 standard. Smaller voltage tolerances on request.

These diodes are delivered taped.  
Details see "Taping".



Glass case MELF

Weight approx. 0.25g  
Dimensions in mm

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

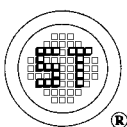
|   | Symbol    | Value           | Unit             |
|---|-----------|-----------------|------------------|
| Zener Current see Table "Characteristics"         |           |                 |                  |
| Power Dissipation at $T_{amb} = 25^\circ\text{C}$ | $P_{tot}$ | 1 <sup>1)</sup> | W                |
| Junction Temperature                              | $T_j$     | +175            | $^\circ\text{C}$ |
| Storage Temperature Range                         | $T_s$     | -55 to + 175    | $^\circ\text{C}$ |

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

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

|   | Symbol    | Min. | Typ. | Max.              | Unit |
|---|-----------|------|------|-------------------|------|
| Thermal Resistance<br>Junction to Ambient Air | $R_{thA}$ | -    | -    | 170 <sup>1)</sup> | K/W  |

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



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# ZMY 1 ... ZMY 100 (1W)

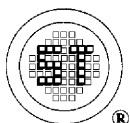
| Type               | Zener voltage <sup>2)</sup> at $I_{ZT}$<br>$V_Z$ V | Dynamic resistance at $I_{ZT}$<br>$f = 1$ kHz<br>$r_{zi}$ $\Omega$ | Temp. coeff. of Zener volt. at $I_{ZT}$<br>$\alpha_{VZ} 10^{-4} / K$ | Test current<br>$I_{ZT}$ mA | Reverse voltage at $I_R = 0.5 \mu A$<br>$V_R$ V | Admissible Zener current <sup>1)</sup> at $T_{amb} = 25^\circ C$<br>$I_Z$ mA |
|--------------------|--|--|--|-----------------------------|---|--|
| ZMY1 <sup>3)</sup> | 0.65 ... 0.75                                      | 6.5 (<8)   | -26 ... -23  | 5                           | -   | 406  |
| ZMY3,9             | 3.7 ... 4.1  | 4 (<7)   | -7 ... +2  | 1000                        | -   | 203  |
| ZMY4,3             | 4.0 ... 4.6  | 4 (<7)   | -7 ... +3  | 100                         | -   | 182  |
| ZMY4,7             | 4.4 ... 5.0  | 4 (<7)   | -7 ... +4  | 100                         | -   | 165  |
| ZMY5,1             | 4.8 ... 5.4  | 2 (<5)   | -6 ... +5  | 100                         | >0.7  | 150  |
| ZMY5,6             | 5.2 ... 6.0  | 1 (<2)   | -3 ... +5  | 100                         | >1.5  | 135  |
| ZMY 6,2            | 5.8 ... 6.6  | 1 (<2)   | -1 ... +6  | 100                         | >2.0  | 128  |
| ZMY6,8             | 6.4 ... 7.2  | 1 (<2)   | 0 ... +7   | 100                         | >3.0  | 110  |
| ZMY7,5             | 7.0 ... 7.9  | 1 (<2)   | 0 ... +7   | 100                         | >5.0  | 100  |
| ZMY8,2             | 7.7 ... 8.7  | 1 (<2)   | +3 ... +8  | 100                         | >6.0  | 89   |
| ZMY9,1             | 8.5 ... 9.6  | 2 (<4)   | +3 ... +8  | 50                          | >7.0  | 82   |
| ZMY10              | 9.4 ... 10.6                                       | 2 (<4)   | +5 ... +9  | 50                          | >7.5  | 74   |
| ZMY11              | 10.4 ... 11.6                                      | 3 (<7)   | +5 ... +10   | 50                          | >8.5  | 66   |
| ZMY12              | 11.4 ... 12.7                                      | 3 (<7)   | +5 ... +10   | 50                          | >9.0  | 60   |
| ZMY13              | 12.4 ... 14.1                                      | 4 (<9)   | +5 ... +10   | 50                          | >10   | 55   |
| ZMY15              | 13.8 ... 15.8                                      | 4 (<9)   | +5 ... +10   | 50                          | >11   | 49   |
| ZMY16              | 15.3 ... 17.1                                      | 5 (<10)  | +7 ... +11   | 25                          | >12   | 44   |
| ZMY18              | 16.8 ... 19.1                                      | 5 (<11)  | +7 ... +11   | 25                          | >14   | 40   |
| ZMY20              | 18.8 ... 21.2                                      | 6 (<12)  | +7 ... +11   | 25                          | >15   | 36   |
| ZMY22              | 20.8 ... 23.3                                      | 7 (<13)  | +7 ... +11   | 25                          | >17   | 34   |
| ZMY24              | 22.8 ... 25.6                                      | 8 (<14)  | +7 ... +12   | 25                          | >18   | 29   |
| ZMY27              | 25.1 ... 28.9                                      | 9 (<15)  | +7 ... +12   | 25                          | >20   | 27   |
| ZMY30              | 28 ... 32  | 10 (<20)   | +7 ... +12   | 25                          | >22.5   | 25   |
| ZMY33              | 31 ... 35  | 11 (<20)   | +7 ... +12   | 25                          | >25   | 22   |
| ZMY36              | 34 ... 38  | 25 (<60)   | +7 ... +12   | 10                          | >27   | 20   |
| ZMY39              | 37 ... 41  | 30 (<60)   | +8 ... +12   | 10                          | >29   | 18   |
| ZMY43              | 40 ... 46  | 35 (<80)   | +8 ... +13   | 10                          | >32   | 17   |
| ZMY47              | 44 ... 50  | 40 (<80)   | +8 ... +13   | 10                          | >35   | 15   |
| ZMY51              | 48 ... 54  | 45 (<100)  | +8 ... +13   | 10                          | >38   | 14   |
| ZMY56              | 52 ... 60  | 50 (<100)  | +8 ... +13   | 10                          | >42   | 13   |
| ZMY62              | 58 ... 66  | 60 (<130)  | +8 ... +13   | 10                          | >47   | 11   |
| ZMY68              | 64 ... 72  | 65 (<130)  | +8 ... +13   | 10                          | >51   | 10   |
| ZMY75              | 70 ... 79  | 70 (<160)  | +8 ... +13   | 10                          | >56   | 9  |
| ZMY82              | 77 ... 88  | 80 (<160)  | +8 ... +13   | 10                          | >61   | 8  |
| ZMY91              | 85 ... 96  | 120 (<250)   | +9 ... +13   | 5                           | >68   | 7.5  |
| ZMY100             | 94 ... 106   | 130 (<250)   | +9 ... +13   | 5                           | >75   | 7  |

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

2) Tested with pulses  $t_p = 20$  ms.

3) The ZMY1 is a silicon diode operated in forward direction. Hence, the index of all characteristics and maximum ratings should be "F" instead of "Z". Connect the cathode terminal to the negative pole.

For devices in glass case MELF with higher Zener voltage but same power dissipation see types ZMU100...ZMU180



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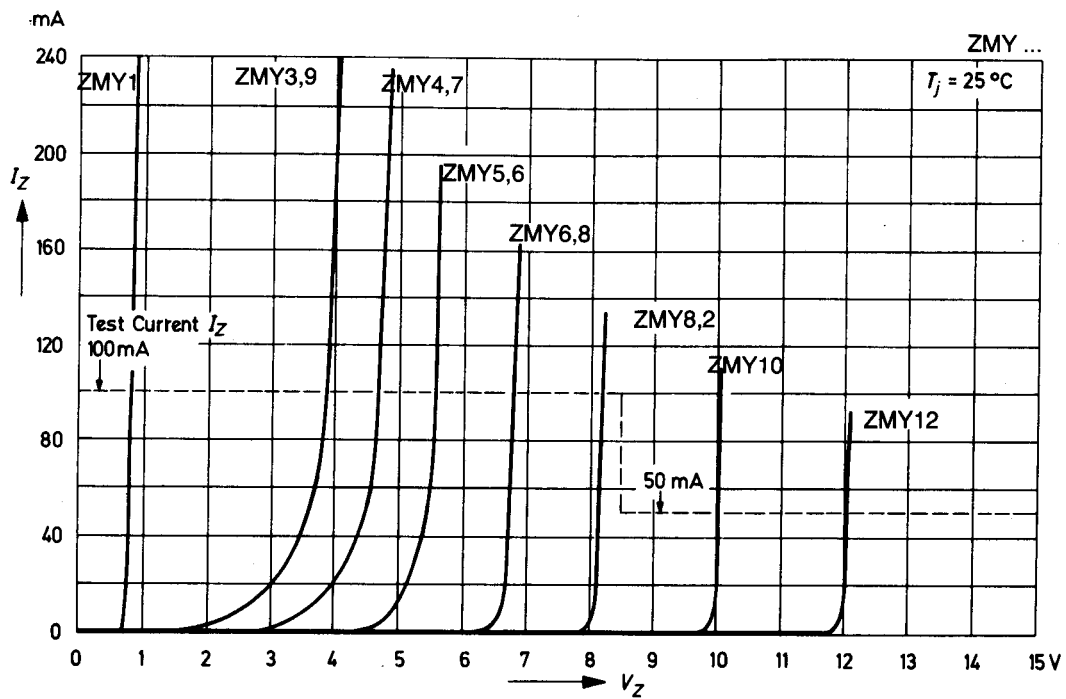
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# ZMY 1 ... ZMY 100 (1W)

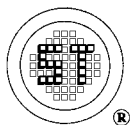
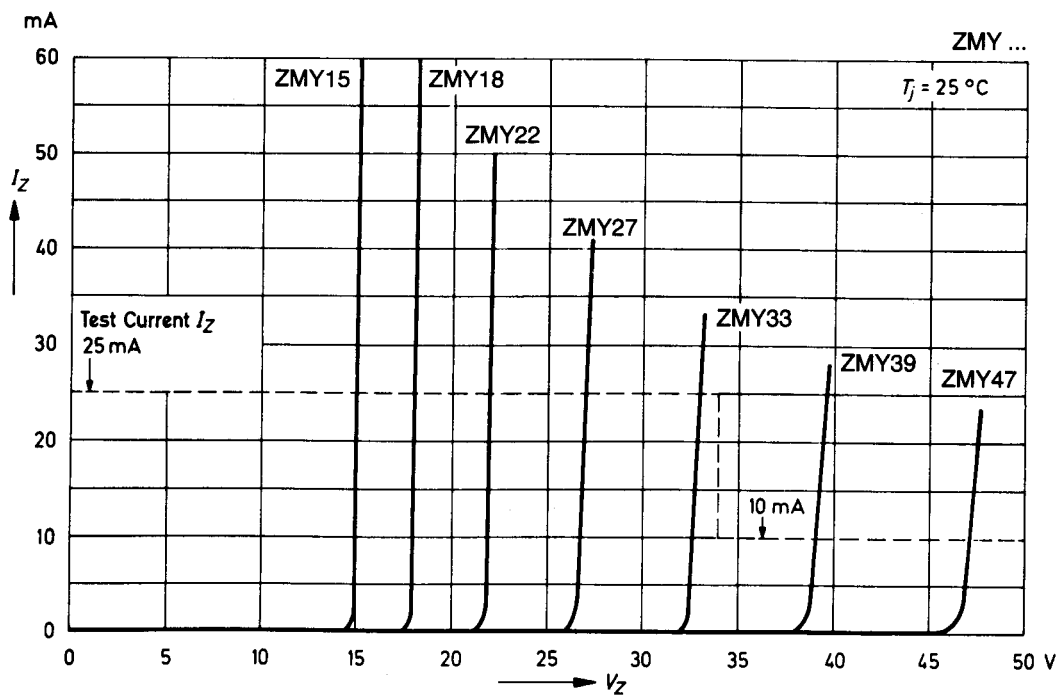
## Breakdown characteristics

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



## Breakdown characteristics

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



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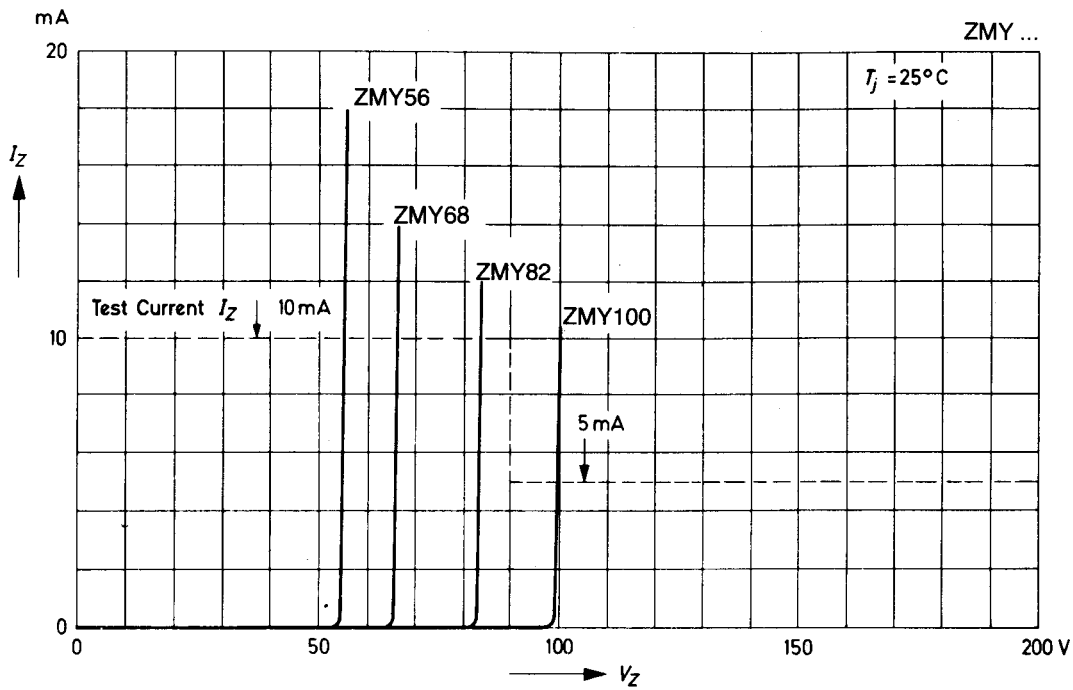
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# ZMY 1 ... ZMY 100 (1W)

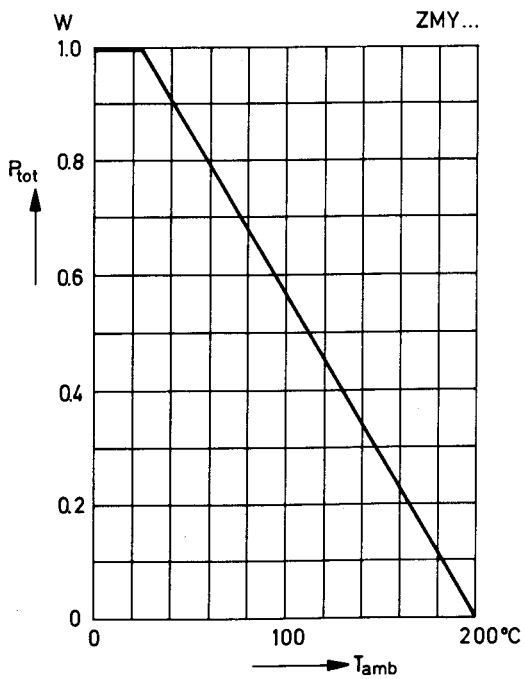
## Breakdown characteristics

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



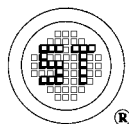
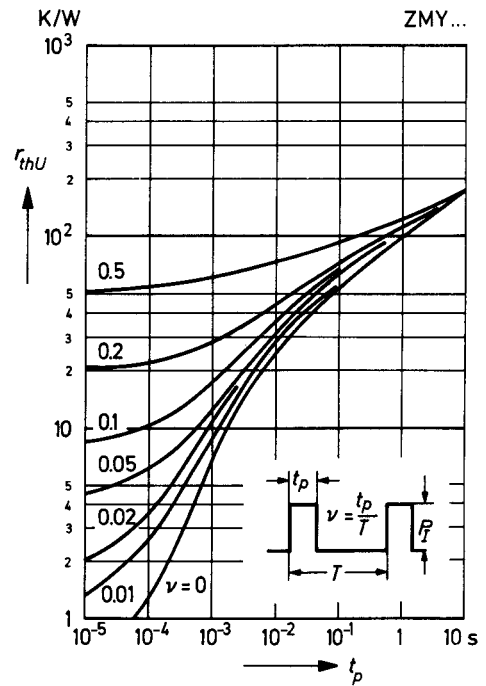
## Admissible power dissipation versus ambient temperature

Valid provided that electrodes are kept at ambient temperature



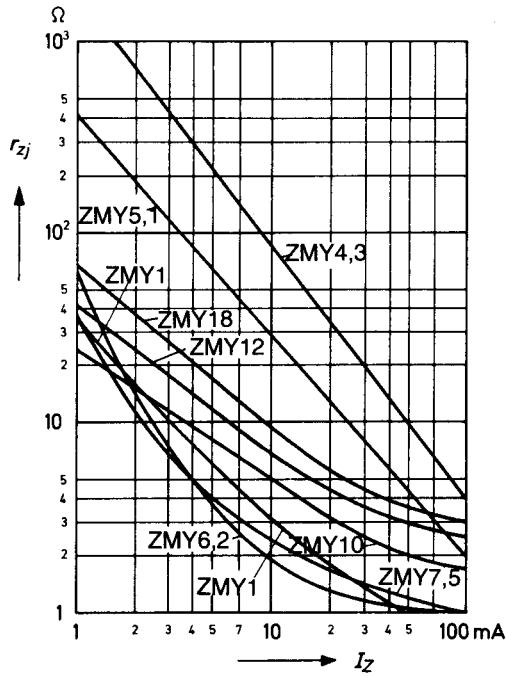
## Pulse thermal resistance versus pulse duration

Valid provided that electrodes are kept at ambient temperature

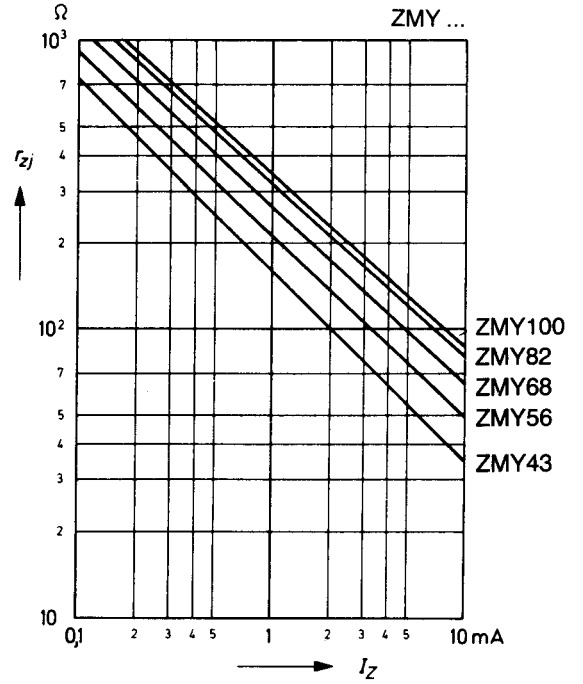


# ZMY 1 ... ZMY 100 (1W)

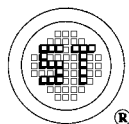
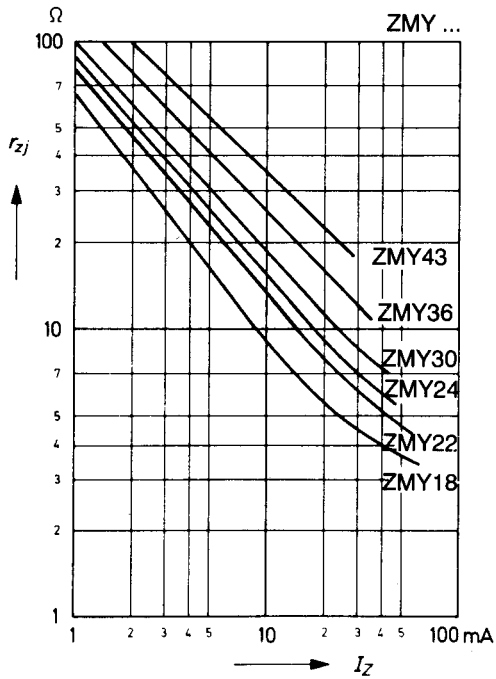
Dynamic resistance versus Zener current



Dynamic resistance versus Zener current



Dynamic resistance versus Zener current



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