

## ZPY3.9 - ZPY100

$V_Z$  : 3.9 to 100V

$P_D$  : 1.3W

### FEATURES :

- Silicon planar zener diodes
- For use in stabilizing and clipping circuits with high power rating.
- Other tolerances are available upon request.
- These diodes are also available in the MELF case with the type designation ZMY3.9 ... ZMY100.
- **Pb / RoHS Free**

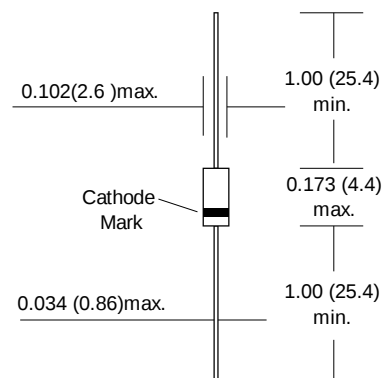
### MECHANICAL DATA :

**Case:** DO-41 Glass Case

**Weight:** approx. 0.35g

## ZENER DIODES

**DO - 41 Glass  
(DO-204AL)**



Dimensions in inches and ( millimeters )

### Maximum Ratings and Thermal Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

| Parameter                                  | Symbol          | Value              | Unit |
|--------------------------------------------|-----------------|--------------------|------|
| Zener Current see Table "Characteristics"  |                 |                    |      |
| Power Dissipation                          | $P_D$           | 1.3 <sup>(1)</sup> | W    |
| Thermal Resistance Junction to Ambient Air | $R_{\theta JA}$ | 130 <sup>(1)</sup> | °C/W |
| Junction temperature                       | $T_J$           | 175                | °C   |
| Storage temperature range                  | $T_S$           | -55 to + 175       | °C   |

#### Note:

(1) Valid provided that leads at a distance of 10mm from case are kept at ambient temperature.

## ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified

| Type   | Zener Voltage <sup>(1)</sup><br>V <sub>Z</sub> @ I <sub>ZT</sub> |      | Test<br>Current<br>I <sub>ZT</sub> | Dynamic<br>Resistance<br>at I <sub>ZT</sub> , f = 1kHz<br>r <sub>Zj</sub> (Ω) | Reverse Voltage<br>at I <sub>R</sub> = 0.5mA<br>V <sub>R</sub> | Admissible<br>Zener Current<br>I <sub>Z</sub> <sup>(2)</sup> | Temp. coefficient<br>of Zener Voltage<br>α <sub>VZ</sub> (10 <sup>-4</sup> / °C) |      |
|--------|------------------------------------------------------------------|------|------------------------------------|-------------------------------------------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------------------------------------|------|
|        | Min.                                                             | Max. |                                    |                                                                               |                                                                |                                                              | min.                                                                             | max. |
|        | (V)                                                              | (V)  | (mA)                               |                                                                               | (V)                                                            | (mA)                                                         |                                                                                  |      |
| ZPY3.9 | 3.7                                                              | 4.1  | 100                                | 4 (< 7)                                                                       | -                                                              | 290                                                          | -7                                                                               | +2   |
| ZPY4.3 | 4.0                                                              | 4.6  | 100                                | 4 (< 7)                                                                       | -                                                              | 280                                                          | -7                                                                               | +3   |
| ZPY4.7 | 4.4                                                              | 5    | 100                                | 2 (< 5)                                                                       | -                                                              | 250                                                          | -7                                                                               | +4   |
| ZPY5.1 | 4.8                                                              | 6.4  | 100                                | 1 (< 2)                                                                       | > 0.7                                                          | 215                                                          | -6                                                                               | +5   |
| ZPY5.6 | 5.2                                                              | 6    | 100                                | 1 (< 2)                                                                       | > 1.5                                                          | 200                                                          | -3                                                                               | +5   |
| ZPY6.2 | 5.8                                                              | 6.6  | 100                                | 1 (< 2)                                                                       | > 2.0                                                          | 190                                                          | -1                                                                               | +6   |
| ZPY6.8 | 6.4                                                              | 7.2  | 100                                | 1 (< 2)                                                                       | > 3.0                                                          | 170                                                          | 0                                                                                | +7   |
| ZPY7.5 | 7.0                                                              | 7.9  | 100                                | 1 (< 2)                                                                       | > 5.0                                                          | 155                                                          | 0                                                                                | +7   |
| ZPY8.2 | 7.7                                                              | 8.7  | 100                                | 1 (< 2)                                                                       | > 6.0                                                          | 140                                                          | +3                                                                               | +8   |
| ZPY9.1 | 8.5                                                              | 9.6  | 50                                 | 2 (< 4)                                                                       | > 7.0                                                          | 130                                                          | +3                                                                               | +8   |
| ZPY10  | 9.41                                                             | 10.6 | 50                                 | 2 (< 4)                                                                       | > 7.5                                                          | 120                                                          | +5                                                                               | +9   |
| ZPY11  | 10.4                                                             | 11.6 | 50                                 | 3 (< 7)                                                                       | > 8.5                                                          | 105                                                          | +5                                                                               | +10  |
| ZPY12  | 11.4                                                             | 12.7 | 50                                 | 3 (< 7)                                                                       | > 9.0                                                          | 97                                                           | +5                                                                               | +10  |
| ZPY13  | 12.4                                                             | 14.1 | 50                                 | 4 (< 9)                                                                       | > 10                                                           | 88                                                           | +5                                                                               | +10  |
| ZPY15  | 13.8                                                             | 15.8 | 50                                 | 4 (< 9)                                                                       | > 11                                                           | 79                                                           | +5                                                                               | +10  |
| ZPY16  | 15.3                                                             | 17.1 | 25                                 | 5 (< 10)                                                                      | > 12                                                           | 71                                                           | +7                                                                               | +11  |
| ZPY18  | 16.8                                                             | 19.1 | 25                                 | 5 (< 11)                                                                      | > 14                                                           | 66                                                           | +7                                                                               | +11  |
| ZPY20  | 18.8                                                             | 21.2 | 25                                 | 6 (< 12)                                                                      | > 15                                                           | 62                                                           | +7                                                                               | +11  |
| ZPY22  | 20.8                                                             | 23.3 | 25                                 | 7 (< 13)                                                                      | > 17                                                           |                                                              | +7                                                                               | +11  |
| ZPY24  | 22.8                                                             | 25.6 | 25                                 | 8 (< 14)                                                                      | > 18                                                           | 56                                                           | +7                                                                               | +12  |
| ZPY27  | 25.1                                                             | 28.9 | 25                                 | 9 (< 15)                                                                      | > 20                                                           | 52                                                           | +7                                                                               | +12  |
| ZPY30  | 28                                                               | 32   | 25                                 | 10 (< 20)                                                                     | > 22.5                                                         | 47                                                           | +7                                                                               | +12  |
| ZPY33  | 31                                                               | 35   | 25                                 | 11 (<20)                                                                      | > 25                                                           | 41                                                           | +7                                                                               | +12  |
| ZPY36  | 34                                                               | 38   | 10                                 | 25 (< 60)                                                                     | > 27                                                           | 36                                                           | +7                                                                               | +12  |
| ZPY39  | 37                                                               | 41   | 10                                 | 30 (< 60)                                                                     | > 29                                                           | 33                                                           | +8                                                                               | +12  |
| ZPY43  | 40                                                               | 46   | 10                                 | 35 (< 80)                                                                     | > 32                                                           | 30                                                           | +8                                                                               | +13  |
| ZPY47  | 44                                                               | 50   | 10                                 | 40 (< 80)                                                                     | > 35                                                           | 28                                                           | +8                                                                               | +13  |
| ZPY51  | 48                                                               | 64   | 10                                 | 45 (< 100)                                                                    | > 38                                                           | 26                                                           | +8                                                                               | +13  |
| ZPY56  | 52                                                               | 60   | 10                                 | 50 (< 100)                                                                    | > 42                                                           | 23                                                           | +8                                                                               | +13  |
| ZPY62  | 58                                                               | 66   | 10                                 | 60 (< 130)                                                                    | > 47                                                           | 21                                                           | +8                                                                               | +13  |
| ZPY68  | 64                                                               | 72   | 10                                 | 65 (< 130)                                                                    | > 51                                                           | 19                                                           | +8                                                                               | +13  |
| ZPY75  | 70                                                               | 79   | 10                                 | 70 (< 160)                                                                    | > 56                                                           | 16                                                           | +8                                                                               | +13  |
| ZPY82  | 77                                                               | 88   | 10                                 | 80 (< 160)                                                                    | > 61                                                           | 15                                                           | +8                                                                               | +13  |
| ZPY91  | 85                                                               | 96   | 5                                  | 120 (< 250)                                                                   | > 68                                                           | 14                                                           | +9                                                                               | +13  |
| ZPY100 | 94                                                               | 106  | 5                                  | 130 (< 250)                                                                   | > 75                                                           | 12                                                           | +9                                                                               | +13  |

### Notes:

(1) Tested with pulses t<sub>p</sub> = 5 ms

(2) Valid provided that leads are kept at ambient temperature at a distance of 10 mm from case

For devices in glass case DO-41 with higher Zener voltage but same power dissipation see types ZPU100 ... ZPU180