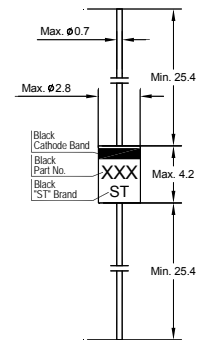


# ZPY3V9...ZPY75

## Silicon Planar Power Zener Diodes

### Features

- Silicon planar power Zener diodes
- For use in stabilizing and clipping circuits with high power rating.

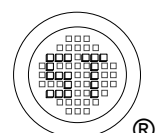


Glass Case DO-41  
Dimensions in mm

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

| Parameter                 | Symbol           | Value             | Unit             |
|---------------------------|------------------|-------------------|------------------|
| Power Dissipation         | $P_{\text{tot}}$ | 1.3 <sup>1)</sup> | W                |
| 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 leads at a distance of 10 mm from case are kept at ambient temperature.



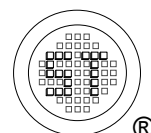
# ZPY3V9...ZPY75

Characteristics at  $T_a = 25\text{ °C}$  ( $V_F = 1.2\text{ V}$  at  $I_F = 200\text{ mA}$ )

| Type   | Zener Voltage <sup>2)</sup> |          | Dynamic Resistance |                   | Reverse Voltage |          | Admissible Zener Current <sup>1)</sup> |     |
|--------|-----------------------------|----------|--------------------|-------------------|-----------------|----------|--|-----|
|        | $V_{ZT}$                    |          | at $I_{ZT}$        | $Z_{ZT}$          | at $I_{ZT}$     | $V_R$    | $I_{ZM}$                               |     |
|        | Min. (V)                    | Max. (V) | (mA)               | Max. ( $\Omega$ ) | (mA)            | Min. (V) | ( $\mu$ A)                             |     |
| ZPY3V9 | 3.7                         | 4.1      | 100                | 7                 | 100             | -        | -                                      | 290 |
| ZPY4V3 | 4                           | 4.6      | 100                | 7                 | 100             | -        | -                                      | 260 |
| ZPY4V7 | 4.4                         | 5        | 100                | 7                 | 100             | -        | -                                      | 235 |
| ZPY5V1 | 4.8                         | 5.4      | 100                | 5                 | 100             | 0.7      | 0.5                                    | 215 |
| ZPY5V6 | 5.2                         | 6        | 100                | 2                 | 100             | 1.5      | 0.5                                    | 193 |
| ZPY6V2 | 5.8                         | 6.6      | 100                | 2                 | 100             | 2        | 0.5                                    | 183 |
| ZPY6V8 | 6.4                         | 7.2      | 100                | 2                 | 100             | 3        | 0.5                                    | 157 |
| ZPY7V5 | 7                           | 7.9      | 100                | 2                 | 100             | 5        | 0.5                                    | 143 |
| ZPY8V2 | 7.7                         | 8.7      | 100                | 2                 | 100             | 6        | 0.5                                    | 127 |
| ZPY9V1 | 8.5                         | 9.6      | 50                 | 4                 | 50              | 7        | 0.5                                    | 117 |
| ZPY10  | 9.41                        | 10.6     | 50                 | 4                 | 50              | 7.5      | 0.5                                    | 105 |
| ZPY11  | 10.4                        | 11.6     | 50                 | 7                 | 50              | 8.5      | 0.5                                    | 94  |
| ZPY12  | 11.4                        | 12.7     | 50                 | 7                 | 50              | 9        | 0.5                                    | 85  |
| ZPY13  | 12.4                        | 14.1     | 50                 | 9                 | 50              | 10       | 0.5                                    | 78  |
| ZPY15  | 13.8                        | 15.8     | 50                 | 9                 | 50              | 11       | 0.5                                    | 70  |
| ZPY16  | 15.3                        | 17.1     | 25                 | 10                | 25              | 12       | 0.5                                    | 63  |
| ZPY18  | 16.8                        | 19.1     | 25                 | 11                | 25              | 14       | 0.5                                    | 57  |
| ZPY20  | 18.8                        | 21.2     | 25                 | 12                | 25              | 15       | 0.5                                    | 52  |
| ZPY22  | 20.8                        | 23.3     | 25                 | 13                | 25              | 17       | 0.5                                    | 48  |
| ZPY24  | 22.8                        | 25.6     | 25                 | 14                | 25              | 18       | 0.5                                    | 42  |
| ZPY27  | 25.1                        | 28.9     | 25                 | 15                | 25              | 20       | 0.5                                    | 38  |
| ZPY30  | 28                          | 32       | 25                 | 20                | 25              | 22.5     | 0.5                                    | 35  |
| ZPY33  | 31                          | 35       | 25                 | 20                | 25              | 25       | 0.5                                    | 31  |
| ZPY36  | 34                          | 38       | 10                 | 60                | 10              | 27       | 0.5                                    | 29  |
| ZPY39  | 37                          | 41       | 10                 | 60                | 10              | 29       | 0.5                                    | 26  |
| ZPY43  | 40                          | 46       | 10                 | 80                | 10              | 32       | 0.5                                    | 24  |
| ZPY47  | 44                          | 50       | 10                 | 80                | 10              | 35       | 0.5                                    | 22  |
| ZPY51  | 48                          | 54       | 10                 | 100               | 10              | 38       | 0.5                                    | 20  |
| ZPY56  | 52                          | 60       | 10                 | 100               | 10              | 42       | 0.5                                    | 18  |
| ZPY62  | 58                          | 66       | 10                 | 130               | 10              | 47       | 0.5                                    | 16  |
| ZPY68  | 64                          | 72       | 10                 | 130               | 10              | 51       | 0.5                                    | 14  |
| ZPY75  | 70                          | 79       | 10                 | 160               | 10              | 56       | 0.5                                    | 13  |

<sup>1)</sup> Valid provided that leads are kept at ambient temperature at a distance of 10 mm from case.

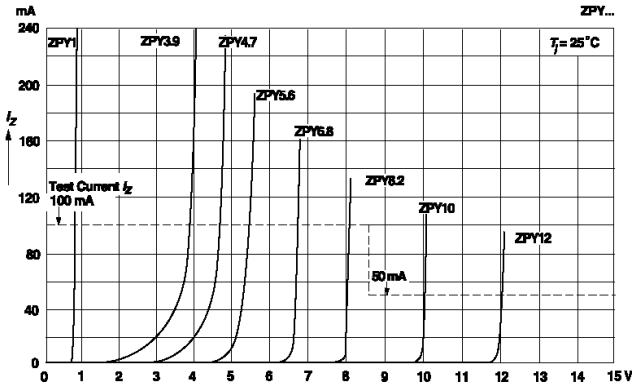
<sup>2)</sup> Tested with pulses  $t_p = 20\text{ ms}$ .



# ZPY3V9...ZPY75

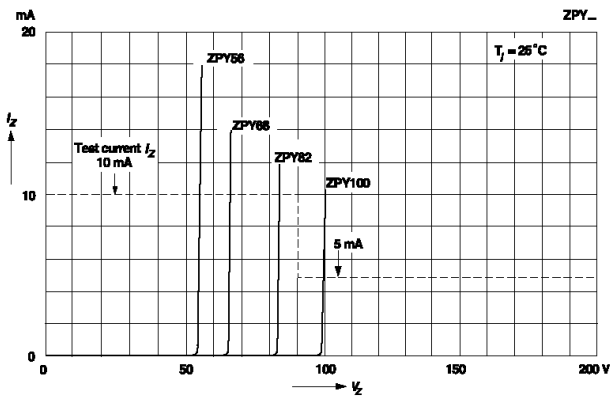
## Breakdown characteristics

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



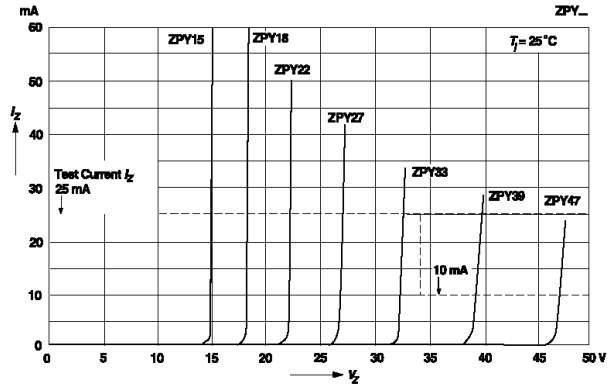
## Breakdown characteristics

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



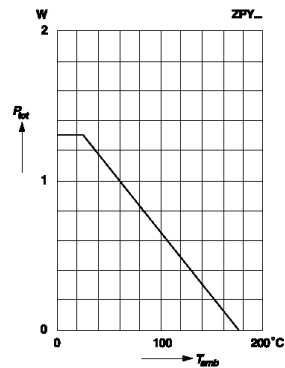
## Breakdown characteristics

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



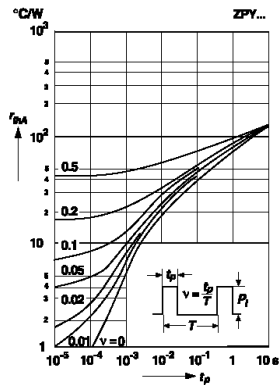
## Admissible power dissipation versus ambient temperature

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

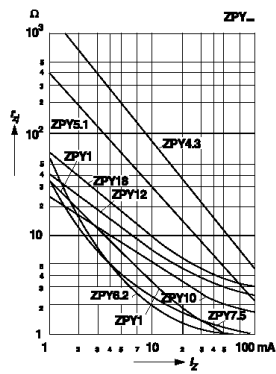


## Pulse thermal resistance versus pulse duration

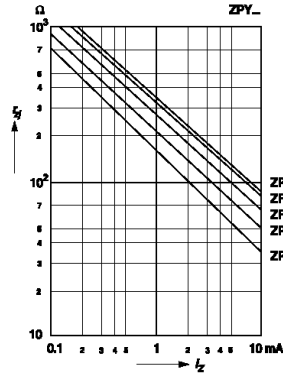
Valid provided that leads are kept at ambient temperature at a distance of 10 mm from case



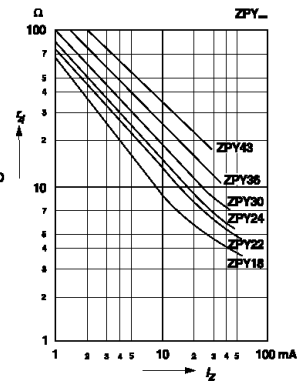
## Dynamic resistance versus Zener current



## Dynamic resistance versus Zener current



## Dynamic resistance versus Zener current



## Thermal resistance versus lead length

