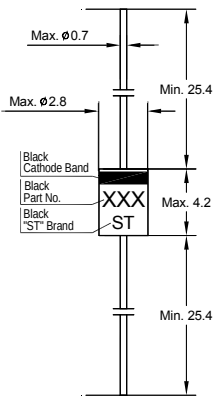


# ZPY3V9...ZPY82

## ZENER DIODES

### Features

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

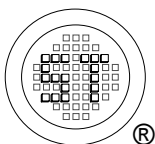


Glass Case DO-41  
Dimensions in mm

### 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                    |
| Thermal Resistance Junction to Ambient Air | $R_{\theta\text{JA}}$ | 130 <sup>1)</sup> | $^{\circ}\text{C/W}$ |
| 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 leads at a distance of 10 mm from case are kept at ambient temperature.



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ISO 14001:2004  
Certificate No. 7116



ISO 9001:2000  
Certificate No. 0506098

Dated : 12/06/2007

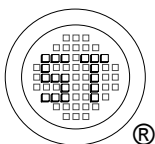
# ZPY3V9...ZPY82

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

| Type   | Zener Voltage<br>$V_Z$ (V) <sup>2)</sup> at $I_{ZT}$ |      | Dynamic Resistance<br>$r_{zj}$ ( $\Omega$ ) at $I_{ZT}$ f = 1 KHz | Test<br>Current<br>$I_{ZT}$ (mA) | Min. Reverse<br>Voltage<br>at $I_R = 0.5\text{ }\mu\text{A}$<br>$V_R$ (V) | Admissible Zener<br>Current<br>$I_Z$ (mA) <sup>1)</sup> |
|--------|------------------------------------------------------|------|-------------------------------------------------------------------|----------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------|
|        | Min.                                                 | Max. | Max.                                                              |                                  |                                                                           |                                                         |
| ZPY3V9 | 3.7                                                  | 4.1  | 7                                                                 | 100                              | -                                                                         | 290                                                     |
| ZPY4V3 | 4                                                    | 4.6  | 7                                                                 | 100                              | -                                                                         | 260                                                     |
| ZPY4V7 | 4.4                                                  | 5    | 7                                                                 | 100                              | -                                                                         | 235                                                     |
| ZPY5V1 | 4.8                                                  | 5.4  | 5                                                                 | 100                              | 0.7                                                                       | 215                                                     |
| ZPY5V6 | 5.2                                                  | 6    | 2                                                                 | 100                              | 1.5                                                                       | 193                                                     |
| ZPY6V2 | 5.8                                                  | 6.6  | 2                                                                 | 100                              | 2                                                                         | 183                                                     |
| ZPY6V8 | 6.4                                                  | 7.2  | 2                                                                 | 100                              | 3                                                                         | 157                                                     |
| ZPY7V5 | 7                                                    | 7.9  | 2                                                                 | 100                              | 5                                                                         | 143                                                     |
| ZPY8V2 | 7.7                                                  | 8.7  | 2                                                                 | 100                              | 6                                                                         | 127                                                     |
| ZPY9V1 | 8.5                                                  | 9.6  | 4                                                                 | 50                               | 7                                                                         | 117                                                     |
| ZPY10  | 9.41                                                 | 10.6 | 4                                                                 | 50                               | 7.5                                                                       | 105                                                     |
| ZPY11  | 10.4                                                 | 11.6 | 7                                                                 | 50                               | 8.5                                                                       | 94                                                      |
| ZPY12  | 11.4                                                 | 12.7 | 7                                                                 | 50                               | 9                                                                         | 85                                                      |
| ZPY13  | 12.4                                                 | 14.1 | 9                                                                 | 50                               | 10                                                                        | 78                                                      |
| ZPY15  | 13.8                                                 | 15.8 | 9                                                                 | 50                               | 11                                                                        | 70                                                      |
| ZPY16  | 15.3                                                 | 17.1 | 10                                                                | 25                               | 12                                                                        | 63                                                      |
| ZPY18  | 16.8                                                 | 19.1 | 11                                                                | 25                               | 14                                                                        | 57                                                      |
| ZPY20  | 18.8                                                 | 21.2 | 12                                                                | 25                               | 15                                                                        | 52                                                      |
| ZPY22  | 20.8                                                 | 23.3 | 13                                                                | 25                               | 17                                                                        | 48                                                      |
| ZPY24  | 22.8                                                 | 25.6 | 14                                                                | 25                               | 18                                                                        | 42                                                      |
| ZPY27  | 25.1                                                 | 28.9 | 15                                                                | 25                               | 20                                                                        | 38                                                      |
| ZPY30  | 28                                                   | 32   | 20                                                                | 25                               | 22.5                                                                      | 35                                                      |
| ZPY33  | 31                                                   | 35   | 20                                                                | 25                               | 25                                                                        | 31                                                      |
| ZPY36  | 34                                                   | 38   | 60                                                                | 10                               | 27                                                                        | 29                                                      |
| ZPY39  | 37                                                   | 41   | 60                                                                | 10                               | 29                                                                        | 26                                                      |
| ZPY43  | 40                                                   | 46   | 80                                                                | 10                               | 32                                                                        | 24                                                      |
| ZPY47  | 44                                                   | 50   | 80                                                                | 10                               | 35                                                                        | 22                                                      |
| ZPY51  | 48                                                   | 54   | 100                                                               | 10                               | 38                                                                        | 20                                                      |
| ZPY56  | 52                                                   | 60   | 100                                                               | 10                               | 42                                                                        | 18                                                      |
| ZPY62  | 58                                                   | 66   | 130                                                               | 10                               | 47                                                                        | 16                                                      |
| ZPY68  | 64                                                   | 72   | 130                                                               | 10                               | 51                                                                        | 14                                                      |
| ZPY75  | 70                                                   | 79   | 160                                                               | 10                               | 56                                                                        | 13                                                      |
| ZPY82  | 77                                                   | 88   | 160                                                               | 10                               | 61                                                                        | 12                                                      |

<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  $t_p = 20\text{ ms}$ .



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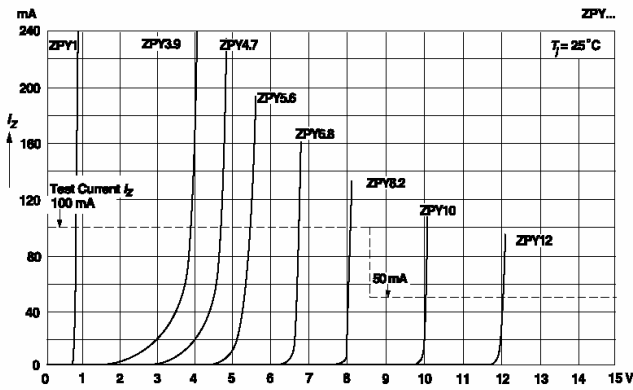


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Certificate No. 0506088

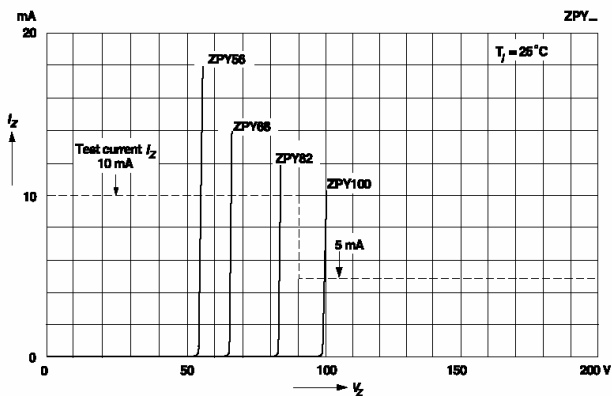
Dated : 12/06/2007

# ZPY3V9...ZPY82

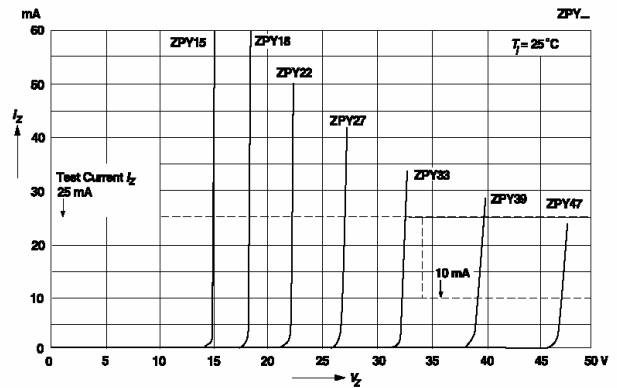
Breakdown characteristics  
 $T_j = \text{constant (pulsed)}$



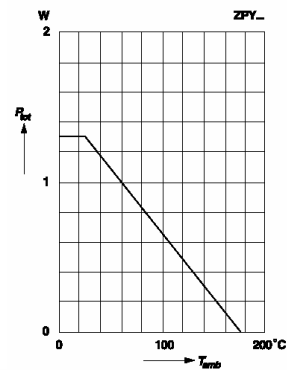
Breakdown characteristics  
 $T_j = \text{constant (pulsed)}$



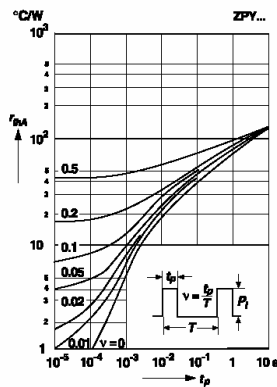
Breakdown characteristics  
 $T_j = \text{constant (pulsed)}$



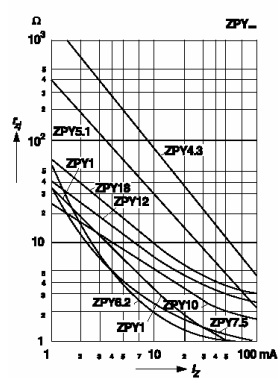
Admissible power dissipation  
versus ambient temperature  
Valid provided that leads are kept at ambient temperature  
at a distance of 10 mm from case



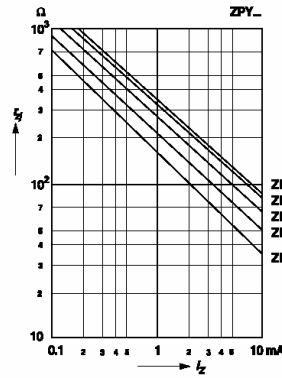
Pulse thermal resistance  
versus pulse duration  
Valid provided that leads are kept  
at ambient temperature at a distance of 10 mm from case



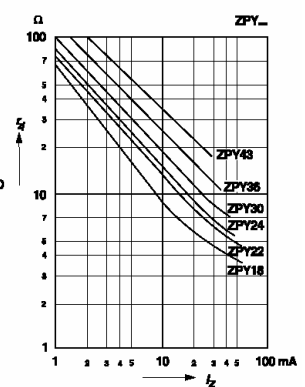
Dynamic resistance  
versus Zener current



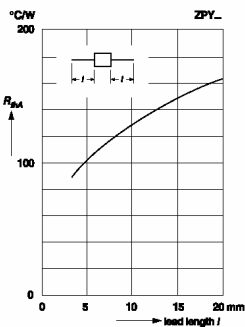
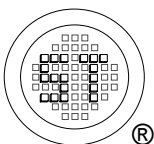
Dynamic resistance  
versus Zener current



Dynamic resistance  
versus Zener current



Thermal resistance  
versus lead length



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