



## RD4.7JS ~ RD39JS

$V_Z$  : 4.7 - 39 Volts

$P_D$  : 400 mW

### FEATURES :

- \* Complete 4.7 to 39 Volts
- \* High peak reverse power dissipation
- \* High reliability
- \* Low leakage current
- \* Pb / RoHS Free

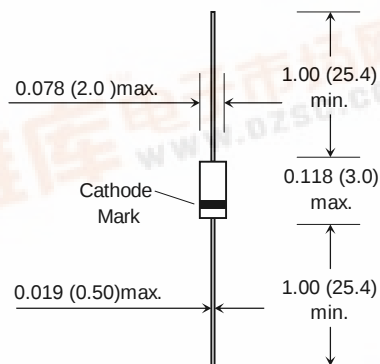
### MECHANICAL DATA

Case: DO-34 Glass Case

Weight: approx. 0.13g

## SILICON ZENER DIODES

### DO - 34 Glass

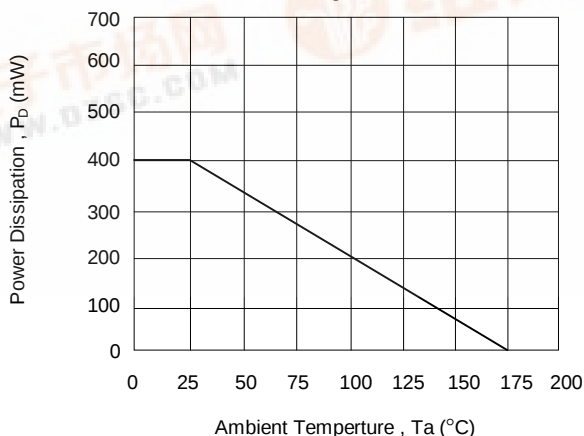


### MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified

| Rating                     | Symbol | Value         | Unit |
|----------------------------|--------|---------------|------|
| Power Dissipation          | $P_D$  | 400           | mW   |
| Forward Current            | $I_F$  | 150           | mA   |
| Junction Temperature Range | $T_J$  | - 55 to + 175 | °C   |
| Storage Temperature Range  | $T_S$  | - 55 to + 175 | °C   |

### Derating Curve





Rating at 25 °C ambient temperature unless otherwise specified

| Type Number | Suffix | Zener Voltage <sup>1)</sup><br>V <sub>Z</sub> (V) |       |                     | Dynamic Impedance<br>Z <sub>Z</sub> (W) |                     | Knee Dynamic Impedance<br>Z <sub>ZK</sub> (W) |                     | Reverse Current<br>I <sub>R</sub> (mA) |                    |
|-------------|--------|---------------------------------------------------|-------|---------------------|-----------------------------------------|---------------------|-----------------------------------------------|---------------------|----------------------------------------|--------------------|
|             |        | Min.                                              | Max.  | I <sub>Z</sub> (mA) | Max.                                    | I <sub>Z</sub> (mA) | Max.                                          | I <sub>Z</sub> (mA) | Max.                                   | V <sub>R</sub> (V) |
| RD4.7JS     | AB     | 4.42                                              | 4.90  | 5                   | 100                                     | 5                   | 800                                           | 0.5                 | 2.0                                    | 1.0                |
|             | AB1    | 4.42                                              | 4.61  |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB2    | 4.55                                              | 4.75  |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB3    | 4.69                                              | 4.90  |                     |                                         |                     |                                               |                     |                                        |                    |
| RD5.1JS     | AB     | 4.84                                              | 5.37  | 5                   | 80                                      | 5                   | 500                                           | 0.5                 | 2.0                                    | 1.5                |
|             | AB1    | 4.84                                              | 5.04  |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB2    | 4.98                                              | 5.20  |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB3    | 5.14                                              | 5.37  |                     |                                         |                     |                                               |                     |                                        |                    |
| RD5.6JS     | AB     | 5.31                                              | 5.92  | 5                   | 60                                      | 5                   | 200                                           | 0.5                 | 1.0                                    | 2.5                |
|             | AB1    | 5.31                                              | 5.55  |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB2    | 5.49                                              | 5.73  |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB3    | 5.67                                              | 5.92  |                     |                                         |                     |                                               |                     |                                        |                    |
| RD6.2JS     | AB     | 5.86                                              | 6.53  | 5                   | 60                                      | 5                   | 100                                           | 0.5                 | 1.0                                    | 3.0                |
|             | AB1    | 5.86                                              | 6.12  |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB2    | 6.06                                              | 6.33  |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB3    | 6.26                                              | 6.53  |                     |                                         |                     |                                               |                     |                                        |                    |
| RD6.8JS     | AB     | 6.47                                              | 7.14  | 5                   | 40                                      | 5                   | 60                                            | 0.5                 | 0.5                                    | 3.5                |
|             | AB1    | 6.47                                              | 6.73  |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB2    | 6.65                                              | 6.93  |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB3    | 6.86                                              | 7.14  |                     |                                         |                     |                                               |                     |                                        |                    |
| RD7.5JS     | AB     | 7.06                                              | 7.84  | 5                   | 30                                      | 5                   | 60                                            | 0.5                 | 0.5                                    | 4.0                |
|             | AB1    | 7.06                                              | 7.36  |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB2    | 7.28                                              | 7.60  |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB3    | 7.52                                              | 7.84  |                     |                                         |                     |                                               |                     |                                        |                    |
| RD8.2JS     | AB     | 7.76                                              | 8.64  | 5                   | 30                                      | 5                   | 60                                            | 0.5                 | 0.5                                    | 5.0                |
|             | AB1    | 7.76                                              | 8.10  |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB2    | 8.02                                              | 8.36  |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB3    | 8.28                                              | 8.64  |                     |                                         |                     |                                               |                     |                                        |                    |
| RD9.1JS     | AB     | 8.56                                              | 9.55  | 5                   | 30                                      | 5                   | 60                                            | 0.5                 | 0.5                                    | 6.0                |
|             | AB1    | 8.56                                              | 8.93  |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB2    | 8.85                                              | 9.23  |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB3    | 9.15                                              | 9.55  |                     |                                         |                     |                                               |                     |                                        |                    |
| RD10JS      | AB     | 9.45                                              | 10.55 | 5                   | 30                                      | 5                   | 60                                            | 0.5                 | 0.1                                    | 7.0                |
|             | AB1    | 9.45                                              | 9.87  |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB2    | 9.77                                              | 10.21 |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB3    | 10.11                                             | 10.55 |                     |                                         |                     |                                               |                     |                                        |                    |
| RD11JS      | AB     | 10.44                                             | 11.56 | 5                   | 30                                      | 5                   | 60                                            | 0.5                 | 0.1                                    | 8.0                |
|             | AB1    | 10.44                                             | 10.88 |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB2    | 10.76                                             | 11.22 |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB3    | 11.10                                             | 11.56 |                     |                                         |                     |                                               |                     |                                        |                    |
| RD12JS      | AB     | 11.42                                             | 12.60 | 5                   | 30                                      | 5                   | 80                                            | 0.5                 | 0.1                                    | 9.0                |
|             | AB1    | 11.42                                             | 11.90 |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB2    | 11.74                                             | 12.24 |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB3    | 12.08                                             | 12.60 |                     |                                         |                     |                                               |                     |                                        |                    |
| RD13JS      | AB     | 12.47                                             | 13.69 | 5                   | 37                                      | 5                   | 80                                            | 0.5                 | 0.1                                    | 10                 |
|             | AB1    | 12.47                                             | 13.03 |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB2    | 12.91                                             | 13.49 |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB3    | 13.37                                             | 13.96 |                     |                                         |                     |                                               |                     |                                        |                    |
| RD15JS      | AB     | 13.84                                             | 15.52 | 5                   | 42                                      | 5                   | 80                                            | 0.5                 | 0.1                                    | 11                 |
|             | AB1    | 13.84                                             | 14.46 |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB2    | 14.34                                             | 14.98 |                     |                                         |                     |                                               |                     |                                        |                    |
|             | AB3    | 14.85                                             | 15.52 |                     |                                         |                     |                                               |                     |                                        |                    |

## ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified

| Type<br>Number | Suffix | Zener Voltage <sup>1)</sup><br>V <sub>Z</sub> (V) |       |                     | Dynamic<br>Impedance<br>Z <sub>Z</sub> (W) |                     | Knee Dynamic<br>Impedance<br>Z <sub>ZK</sub> (W) |                     | Reverse<br>Current<br>I <sub>R</sub> (mA) |                    |  |
|----------------|--------|---------------------------------------------------|-------|---------------------|--------------------------------------------|---------------------|--------------------------------------------------|---------------------|-------------------------------------------|--------------------|--|
|                |        | Min.                                              | Max.  | I <sub>Z</sub> (mA) | Max.                                       | I <sub>Z</sub> (mA) | Max.                                             | I <sub>Z</sub> (mA) | Max.                                      | V <sub>R</sub> (V) |  |
| Page 2 of 3    |        | Rev. 02 : March 25, 2005                          |       |                     |                                            |                     |                                                  |                     |                                           |                    |  |
| RD16JS         | AB     | 15.37                                             | 17.09 | 5                   | 50                                         | 5                   | 80                                               | 0.5                 | 0.1                                       | 12                 |  |
|                | AB1    | 15.37                                             | 16.01 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
|                | AB2    | 15.85                                             | 16.51 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
|                | AB3    | 16.35                                             | 17.09 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
| RD18JS         | AB     | 16.94                                             | 19.03 | 5                   | 65                                         | 5                   | 80                                               | 0.5                 | 0.1                                       | 13                 |  |
|                | AB1    | 16.94                                             | 17.70 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
|                | AB2    | 17.56                                             | 18.53 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
|                | AB3    | 18.21                                             | 19.03 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
| RD20JS         | AB     | 18.86                                             | 21.08 | 5                   | 85                                         | 5                   | 100                                              | 0.5                 | 0.1                                       | 15                 |  |
|                | AB1    | 18.86                                             | 19.70 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
|                | AB2    | 19.52                                             | 20.39 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
|                | AB3    | 20.21                                             | 21.08 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
| RD22JS         | AB     | 20.88                                             | 23.17 | 5                   | 100                                        | 5                   | 100                                              | 0.5                 | 0.1                                       | 17                 |  |
|                | AB1    | 20.88                                             | 21.77 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
|                | AB2    | 21.54                                             | 22.47 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
|                | AB3    | 22.23                                             | 23.17 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
| RD24JS         | AB     | 22.93                                             | 25.57 | 5                   | 120                                        | 5                   | 120                                              | 0.5                 | 0.1                                       | 19                 |  |
|                | AB1    | 22.93                                             | 23.96 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
|                | AB2    | 23.72                                             | 24.78 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
|                | AB3    | 24.54                                             | 25.57 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
| RD27JS         | AB     | 25.20                                             | 28.61 | 5                   | 150                                        | 5                   | 150                                              | 0.5                 | 0.1                                       | 21                 |  |
|                | AB1    | 25.20                                             | 26.50 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
|                | AB2    | 26.19                                             | 27.53 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
|                | AB3    | 27.21                                             | 28.61 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
| RD30JS         | AB     | 28.22                                             | 31.74 | 5                   | 200                                        | 5                   | 200                                              | 0.5                 | 0.1                                       | 23                 |  |
|                | AB1    | 28.22                                             | 29.66 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
|                | AB2    | 29.19                                             | 30.69 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
|                | AB3    | 30.20                                             | 31.74 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
| RD33JS         | AB     | 32.18                                             | 34.83 | 5                   | 250                                        | 5                   | 250                                              | 0.5                 | 0.1                                       | 25                 |  |
|                | AB1    | 32.18                                             | 32.78 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
|                | AB2    | 32.15                                             | 33.79 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
|                | AB3    | 33.13                                             | 34.83 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
| RD36JS         | AB     | 34.12                                             | 37.91 | 5                   | 300                                        | 5                   | 300                                              | 0.5                 | 0.1                                       | 27                 |  |
|                | AB1    | 34.12                                             | 35.86 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
|                | AB2    | 35.07                                             | 36.87 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
|                | AB3    | 36.07                                             | 37.91 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
| RD39JS         | AB     | 37.04                                             | 40.99 | 5                   | 360                                        | 5                   | 360                                              | 0.5                 | 0.1                                       | 30                 |  |
|                | AB1    | 37.04                                             | 38.94 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
|                | AB2    | 38.00                                             | 39.94 |                     |                                            |                     |                                                  |                     |                                           |                    |  |
|                | AB3    | 38.99                                             | 40.99 |                     |                                            |                     |                                                  |                     |                                           |                    |  |

### Notes:

- (1) tested with pulse (40 ms).
- (2) Z<sub>Z</sub> and Z<sub>ZK</sub> are measured at I<sub>Z</sub> by given a very small A.C. current signal.
- (3) Suffix AB is suffix AB1, AB2 or suffix AB3.