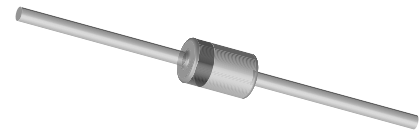


# 1.0W Zener Diode

## 1N4728A thru 1N4764A

Nominal Zener Voltage: 3.3 to 100V

Power Dissipation: 1.0W

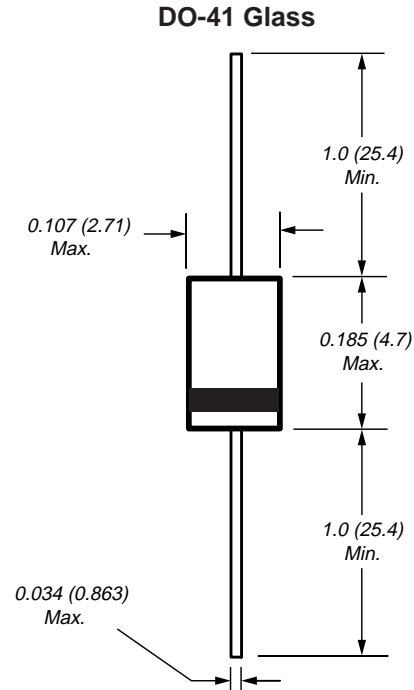


### Features

- 1.0 Watt Power Dissipation
- 3.3V - 100V Nominal Zener Voltage
- Standard Vz Tolerance is 5%

### Mechanical Data

- Case: DO-41, Glass
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Approx. Weight: 0.35 grams



### Maximum Ratings @ T<sub>A</sub> = 25°C unless otherwise specified

| Characteristic                                  | Symbol                            | Value                           | Unit       |
|---|-----------------------------------|---------------------------------|------------|
| Zener Current (see Table page 2)                | I <sub>Z</sub>                    | P <sub>d</sub> / V <sub>Z</sub> | mA         |
| Power Dissipation<br>Derate Above 50°C (Note 1) | P <sub>d</sub>                    | 1.0<br>6.67                     | W<br>mW/°C |
| Thermal Resistance - Junction to Ambient Air    | R <sub>θJA</sub>                  | 175                             | °C/W       |
| Forward Voltage @ I <sub>F</sub> = 200 mA       | V <sub>F</sub>                    | 1.2                             | V          |
| Operating and Storage Temperature Range         | T <sub>J</sub> , T <sub>STG</sub> | -65 to + 200                    | °C         |

Note: 1. Valid provided that leads are kept at T<sub>L</sub> @ 50°C with lead length = 9.5mm (3/8") from case.

# 1.0W Zener Diode

## Electrical Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified

| Type Number | Nominal Zener Voltage (Note 2)   | Test Current    | Maximum Zener Impedance (Note 3)  |                                   |                 | Maximum Reverse Leakage Current |                  | Max Surge Current 8.3ms | Temperature Coefficient @ I <sub>ZT</sub> |
|-------------|----------------------------------|-----------------|-----------------------------------|-----------------------------------|-----------------|---------------------------------|------------------|-------------------------|---|
|             | V <sub>Z</sub> @ I <sub>ZT</sub> | I <sub>ZT</sub> | Z <sub>ZT</sub> @ I <sub>ZT</sub> | Z <sub>ZK</sub> @ I <sub>ZK</sub> | I <sub>ZK</sub> | I <sub>R</sub>                  | @ V <sub>R</sub> | I <sub>ZS</sub>         |   |
|             | (V)                              | (mA)            | (Ω)                               | (Ω)                               | (mA)            | (μA)                            | (V)              | (mA)                    | %/°C                                      |
| 1N4728A     | 3.3                              | 76              | 10                                | 400                               | 1.0             | 100                             | 1.0              | 1380                    | -0.08 to -0.05                            |
| 1N4729A     | 3.6                              | 69              | 10                                | 400                               | 1.0             | 100                             | 1.0              | 1260                    | -0.08 to -0.05                            |
| 1N4730A     | 3.9                              | 64              | 9.0                               | 400                               | 1.0             | 50                              | 1.0              | 1190                    | -0.07 to -0.02                            |
| 1N4731A     | 4.3                              | 58              | 9.0                               | 400                               | 1.0             | 10                              | 1.0              | 1070                    | -0.07 to -0.01                            |
| 1N4732A     | 4.7                              | 53              | 8.0                               | 500                               | 1.0             | 10                              | 1.0              | 970                     | -0.03 to +0.04                            |
| 1N4733A     | 5.1                              | 49              | 7.0                               | 550                               | 1.0             | 10                              | 1.0              | 890                     | -0.01 to +0.04                            |
| 1N4734A     | 5.6                              | 45              | 5.0                               | 600                               | 1.0             | 10                              | 2.0              | 810                     | 0 to +0.045                               |
| 1N4735A     | 6.2                              | 41              | 2.0                               | 700                               | 1.0             | 10                              | 3.0              | 730                     | +0.01 to +0.055                           |
| 1N4736A     | 6.8                              | 37              | 3.5                               | 700                               | 1.0             | 10                              | 4.0              | 660                     | +0.015 to +0.06                           |
| 1N4737A     | 7.5                              | 34              | 4.0                               | 700                               | 0.5             | 10                              | 5.0              | 605                     | +0.02 to +0.065                           |
| 1N4738A     | 8.2                              | 31              | 4.5                               | 700                               | 0.5             | 10                              | 6.0              | 550                     | 0.03 to 0.07                              |
| 1N4739A     | 9.1                              | 28              | 5.0                               | 700                               | 0.5             | 10                              | 7.0              | 500                     | 0.035 to 0.075                            |
| 1N4740A     | 10                               | 25              | 7.0                               | 700                               | 0.25            | 10                              | 7.6              | 454                     | 0.04 to 0.08                              |
| 1N4741A     | 11                               | 23              | 8.0                               | 700                               | 0.25            | 5.0                             | 8.4              | 414                     | 0.045 to 0.08                             |
| 1N4742A     | 12                               | 21              | 9.0                               | 700                               | 0.25            | 5.0                             | 9.1              | 380                     | 0.045 to 0.085                            |
| 1N4743A     | 13                               | 19              | 10                                | 700                               | 0.25            | 5.0                             | 9.9              | 344                     | 0.05 to 0.085                             |
| 1N4744A     | 15                               | 17              | 14                                | 700                               | 0.25            | 5.0                             | 11.4             | 304                     | 0.055 to 0.09                             |
| 1N4745A     | 16                               | 15.5            | 16                                | 700                               | 0.25            | 5.0                             | 12.2             | 285                     | 0.055 to 0.09                             |
| 1N4746A     | 18                               | 14              | 20                                | 750                               | 0.25            | 5.0                             | 13.7             | 250                     | 0.06 to 0.09                              |
| 1N4747A     | 20                               | 12.5            | 22                                | 750                               | 0.25            | 5.0                             | 15.2             | 225                     | 0.06 to 0.09                              |
| 1N4748A     | 22                               | 11.5            | 23                                | 750                               | 0.25            | 5.0                             | 16.7             | 205                     | 0.06 to 0.095                             |
| 1N4749A     | 24                               | 10.5            | 25                                | 750                               | 0.25            | 5.0                             | 18.2             | 190                     | 0.06 to 0.095                             |
| 1N4750A     | 27                               | 9.5             | 35                                | 750                               | 0.25            | 5.0                             | 20.6             | 170                     | 0.06 to 0.095                             |
| 1N4751A     | 30                               | 8.5             | 40                                | 1000                              | 0.25            | 5.0                             | 22.8             | 150                     | 0.06 to 0.095                             |
| 1N4752A     | 33                               | 7.5             | 45                                | 1000                              | 0.25            | 5.0                             | 25.1             | 135                     | 0.06 to 0.095                             |
| 1N4753A     | 36                               | 7.0             | 50                                | 1000                              | 0.25            | 5.0                             | 27.4             | 125                     | 0.06 to 0.095                             |
| 1N4754A     | 39                               | 6.5             | 60                                | 1000                              | 0.25            | 5.0                             | 29.7             | 115                     | 0.06 to 0.095                             |
| 1N4755A     | 43                               | 6.0             | 70                                | 1500                              | 0.25            | 5.0                             | 32.7             | 110                     | 0.06 to 0.095                             |
| 1N4756A     | 47                               | 5.5             | 80                                | 1500                              | 0.25            | 5.0                             | 35.8             | 95                      | 0.06 to 0.095                             |
| 1N4757A     | 51                               | 5.0             | 95                                | 1500                              | 0.25            | 5.0                             | 38.8             | 90                      | 0.06 to 0.095                             |
| 1N4758A     | 56                               | 4.5             | 110                               | 2000                              | 0.25            | 5.0                             | 42.6             | 80                      | 0.06 to 0.095                             |
| 1N4759A     | 62                               | 4.0             | 125                               | 2000                              | 0.25            | 5.0                             | 47.1             | 70                      | 0.06 to 0.095                             |
| 1N4760A     | 68                               | 3.7             | 150                               | 2000                              | 0.25            | 5.0                             | 51.7             | 65                      | 0.06 to 0.095                             |
| 1N4761A     | 75                               | 3.3             | 175                               | 2000                              | 0.25            | 5.0                             | 56.0             | 60                      | 0.06 to 0.095                             |
| 1N4762A     | 82                               | 3.0             | 200                               | 3000                              | 0.25            | 5.0                             | 62.2             | 55                      | —   |
| 1N4763A     | 91                               | 2.8             | 250                               | 3000                              | 0.25            | 5.0                             | 69.2             | 50                      | —   |
| 1N4764A     | 100                              | 2.5             | 350                               | 3000                              | 0.25            | 5.0                             | 76.0             | 45                      | —   |

- Notes: 2. Measured under thermal equilibrium and dc (I<sub>ZT</sub>) test conditions.  
3. The Zener impedance is derived from the 60 Hz ac voltage which results when an ac current having an rms value equal to 10% of the Zener current (I<sub>ZT</sub> or I<sub>ZK</sub>) is superimposed on I<sub>ZT</sub> or I<sub>ZK</sub>. Zener impedance is measured at two points to insure a sharp knee on the breakdown curve and to eliminate unstable units.

**Ratings and Characteristic Curves (TA = 25°C unless otherwise noted)**

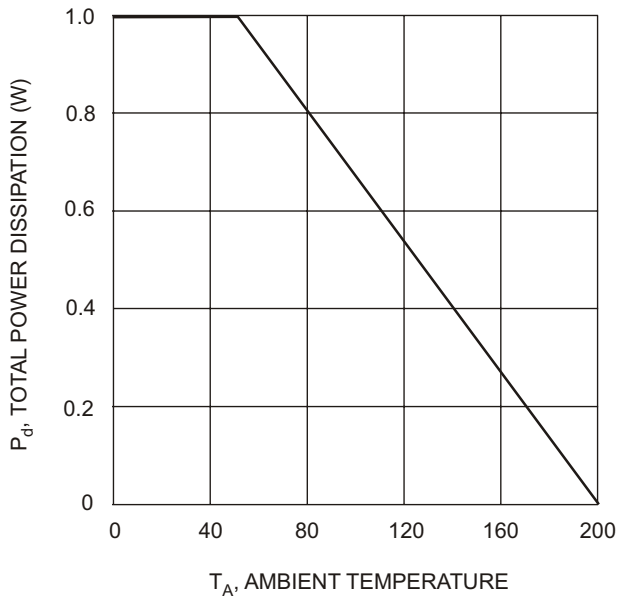


Fig.1 Power Dissipation vs Ambient Temperature

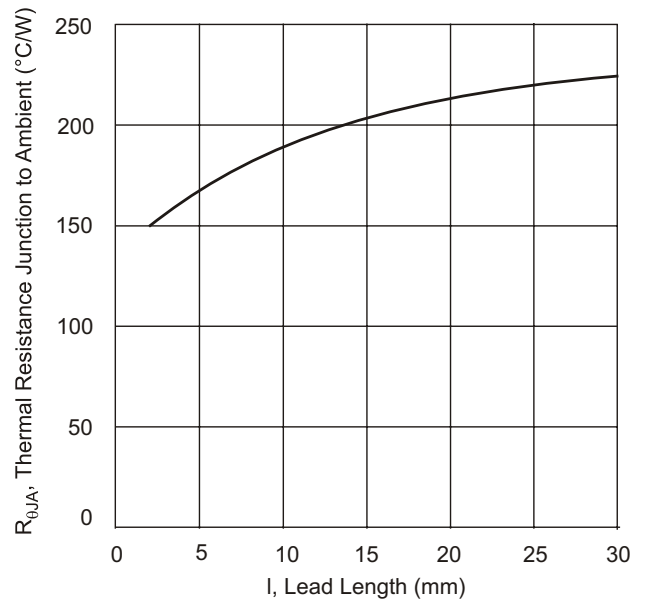


Fig. 2 Typical Thermal Resistance vs. Lead Length

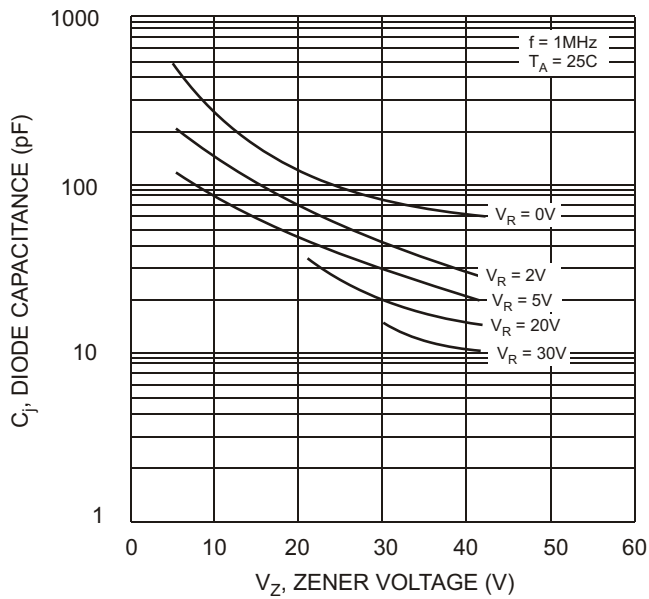


Fig.3, Junction Capacitance vs Zener Voltage

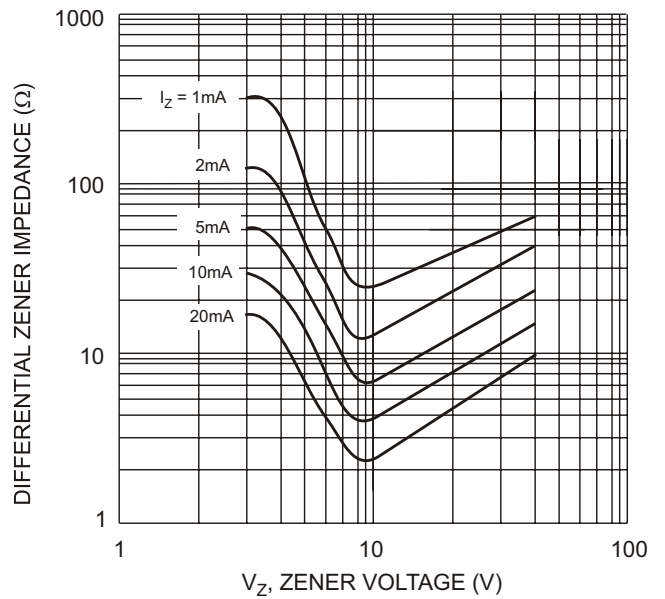


Fig. 4 Typical Zener Impedance vs. Zener Voltage