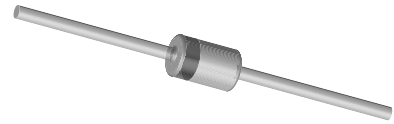


## 1.0W Zener Diode

# 1N4728A thru 1N4764A

Nominal Zener Voltage: 3.3 to 100V

Power Dissipation: 1.0W

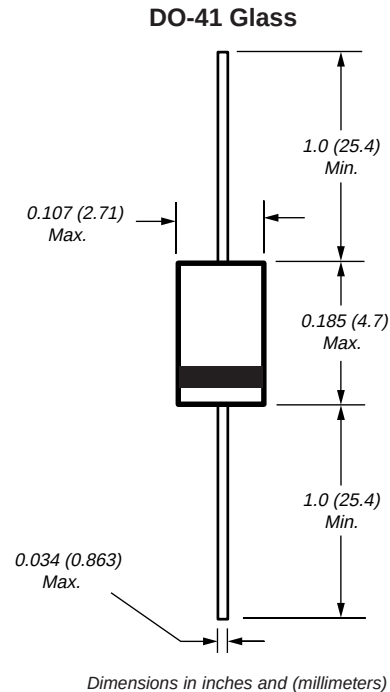


### Features

- 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 @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic                                                | Symbol          | Value        | Unit                      |
|---------------------------------------------------------------|-----------------|--------------|---------------------------|
| Zener Current (see Table page 2)                              | $I_Z$           | $P_d / V_Z$  | mA                        |
| Power Dissipation<br>Derate Above $50^\circ\text{C}$ (Note 1) | $P_d$           | 1.0<br>6.67  | W<br>mW/ $^\circ\text{C}$ |
| Thermal Resistance - Junction to Ambient Air                  | $R_{\theta JA}$ | 175          | $^\circ\text{C}/\text{W}$ |
| Forward Voltage @ $I_F = 200\text{ mA}$                       | $V_F$           | 1.2          | V                         |
| Operating and Storage Temperature Range                       | $T_J, T_{STG}$  | -65 to + 200 | $^\circ\text{C}$          |

Note: 1. Valid provided that leads are kept at  $T_L$  @  $50^\circ\text{C}$  with lead length = 9.5mm (3/8") from case.

# 1.0W Zener Diode

## Electrical Characteristics @ $T_A = 25^\circ\text{C}$ 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 @ $I_{ZT}$ |
|-------------|--------------------------------|--------------|----------------------------------|-------------------|----------|---------------------------------|---------|-------------------------|------------------------------------|
|             | $V_Z @ I_{ZT}$                 | $I_{ZT}$     | $Z_{ZT} @ I_{ZT}$                | $Z_{ZK} @ I_{ZK}$ | $I_{ZK}$ | $I_R$                           | @ $V_R$ | $I_{ZS}$                |                                    |
|             | (V)                            | (mA)         | ( $\Omega$ )                     | ( $\Omega$ )      | (mA)     | ( $\mu\text{A}$ )               | (V)     | (mA)                    | %/ $^\circ\text{C}$                |
| 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 ( $I_{ZT}$ ) 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 ( $I_{ZT}$  or  $I_{ZK}$ ) is superimposed on  $I_{ZT}$  or  $I_{ZK}$ . Zener impedance is measured at two points to insure a sharp knee on the breakdown curve and to eliminate unstable units.

# 1.0W Zener Diode

Ratings and Characteristic Curves ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

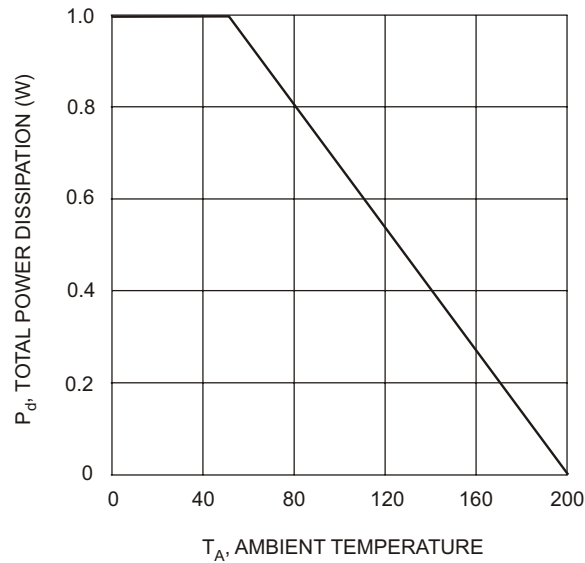


Fig.1 Power Dissipation vs Ambient Temperature

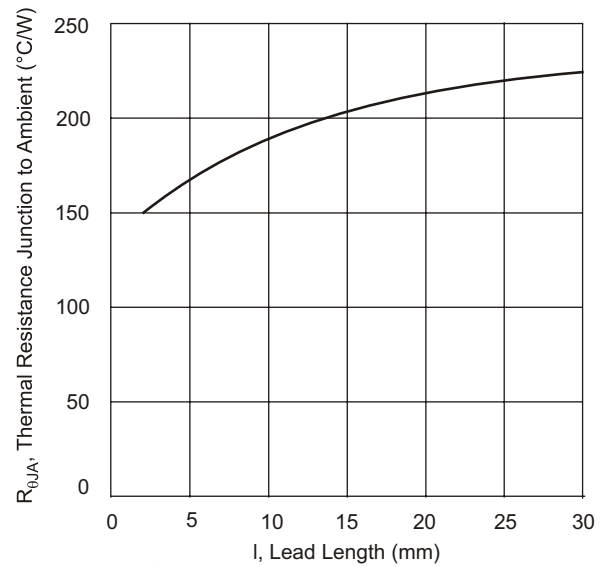


Fig. 2 Typical Thermal Resistance vs. Lead Length

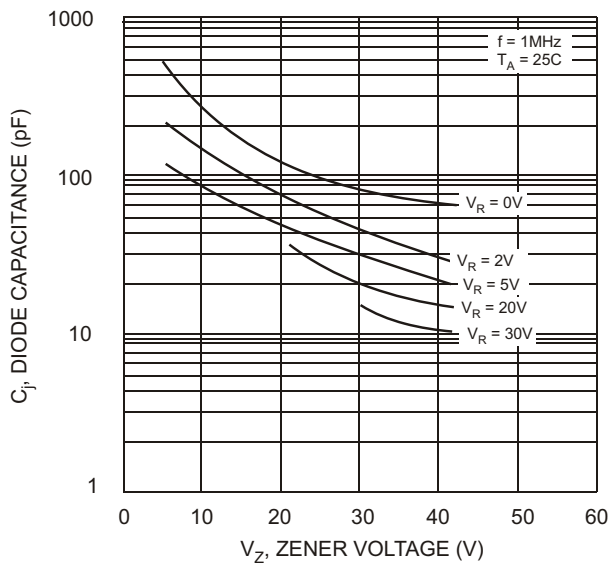


Fig.3, Junction Capacitance vs Zener Voltage

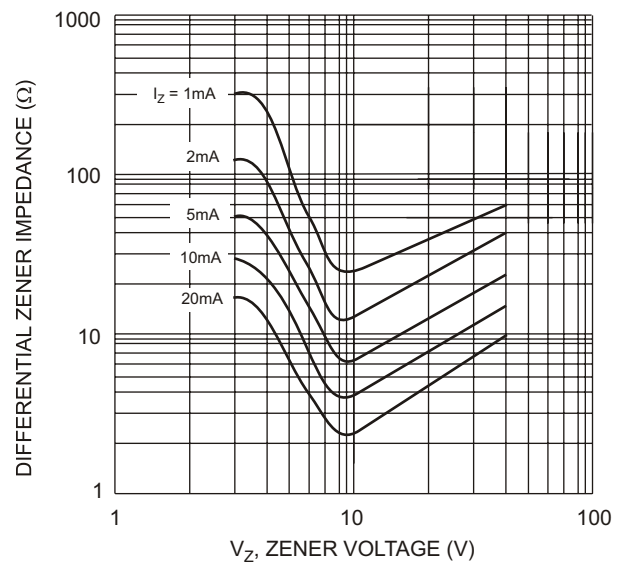


Fig. 4 Typical Zener Impedance vs. Zener Voltage