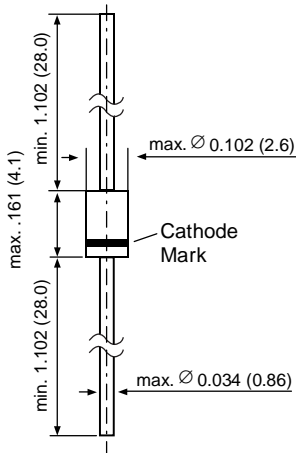


# 1N4728 THRU 1N4764

## ZENER DIODES

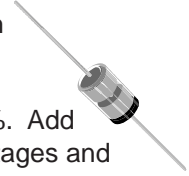
### DO-41 Glass



Dimensions in inches and (millimeters)

### FEATURES

- ◆ Silicon Planar Power Zener Diodes
- ◆ For use in stabilizing and clipping circuits with high power rating.
- ◆ Standard Zener voltage tolerance is  $\pm 10\%$ . Add suffix "A" for  $\pm 5\%$  tolerance. Other Zener voltages and tolerances are available upon request.
- ◆ These diodes are also available in the MELF case with type designation ZM4728 thru ZM4764



### MECHANICAL DATA

**Case:** DO-41 Glass Case

**Weight:** approx. 0.35 g

### MAXIMUM RATINGS

Ratings at 25°C ambient temperature unless otherwise specified.

|                                                     | SYMBOL    | VALUE              | UNIT               |
|-----------------------------------------------------|-----------|--------------------|--------------------|
| Zener Current (see Table "Characteristics")         |           |                    |                    |
| Power Dissipation at $T_{amb} = 25^{\circ}\text{C}$ | $P_{tot}$ | 1.0 <sup>(1)</sup> | Watts              |
| Junction Temperature                                | $T_j$     | 175                | $^{\circ}\text{C}$ |
| Storage Temperature Range                           | $T_s$     | - 65 to +175       | $^{\circ}\text{C}$ |

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

|                                               | SYMBOL     | MIN. | TYP. | MAX.               | UNIT                        |
|-----------------------------------------------|------------|------|------|--------------------|-----------------------------|
| Thermal Resistance<br>Junction to Ambient Air | $R_{thJA}$ | -    | -    | 170 <sup>(1)</sup> | $^{\circ}\text{C}/\text{W}$ |
| Forward Voltage<br>at $I_F = 200\text{ mA}$   | $V_F$      | -    | -    | 1.2                | Volts                       |

#### NOTES:

(1) Valid provided that electrodes at a distance of 10mm from case are kept at ambient temperature

# 1N4728 THRU 1N4764

## ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

| Type   | Nominal Zener voltage <sup>(3)</sup> at $I_{ZT}$ $V_z$ V | Test current $I_{ZT}$ mA | Maximum Zener impedance <sup>(1)</sup> |                   |                | Maximum reverse leakage current |            | Surge current at $T_A = 25^\circ\text{C}$ $I_{RM}$ mA | Maximum regulator current <sup>(2)</sup> $I_{ZM}$ mA |
|--------|----------------------------------------------------------|--------------------------|----------------------------------------|-------------------|----------------|---------------------------------|------------|-------------------------------------------------------|------------------------------------------------------|
|        |                                                          |                          | $Z_{ZT}$ at $I_{ZT}$ $\Omega$          | $Z_{ZK}$ $\Omega$ | at $I_{ZK}$ mA | $I_R$ $\mu\text{A}$             | at $V_R$ V |                                                       |                                                      |
| 1N4728 | 3.3                                                      | 76                       | 10                                     | 400               | 1.0            | 100                             | 1          | 1380                                                  | 276                                                  |
| 1N4729 | 3.6                                                      | 69                       | 10                                     | 400               | 1.0            | 100                             | 1          | 1260                                                  | 252                                                  |
| 1N4730 | 3.9                                                      | 64                       | 9                                      | 400               | 1.0            | 50                              | 1          | 1190                                                  | 234                                                  |
| 1N4731 | 4.3                                                      | 58                       | 9                                      | 400               | 1.0            | 10                              | 1          | 1070                                                  | 217                                                  |
| 1N4732 | 4.7                                                      | 53                       | 8                                      | 500               | 1.0            | 10                              | 1          | 970                                                   | 193                                                  |
| 1N4733 | 5.1                                                      | 49                       | 7                                      | 550               | 1.0            | 10                              | 1          | 890                                                   | 178                                                  |
| 1N4734 | 5.6                                                      | 45                       | 5                                      | 600               | 1.0            | 10                              | 2          | 810                                                   | 162                                                  |
| 1N4735 | 6.2                                                      | 41                       | 2                                      | 700               | 1.0            | 10                              | 3          | 730                                                   | 146                                                  |
| 1N4736 | 6.8                                                      | 37                       | 3.5                                    | 700               | 1.0            | 10                              | 4          | 660                                                   | 133                                                  |
| 1N4737 | 7.5                                                      | 34                       | 4.0                                    | 700               | 0.5            | 10                              | 5          | 605                                                   | 121                                                  |
| 1N4738 | 8.2                                                      | 31                       | 4.5                                    | 700               | 0.5            | 10                              | 6          | 550                                                   | 110                                                  |
| 1N4739 | 9.1                                                      | 28                       | 5.0                                    | 700               | 0.5            | 10                              | 7          | 500                                                   | 100                                                  |
| 1N4740 | 10                                                       | 25                       | 7                                      | 700               | 0.25           | 10                              | 7.6        | 454                                                   | 91                                                   |
| 1N4741 | 11                                                       | 23                       | 8                                      | 700               | 0.25           | 5                               | 8.4        | 414                                                   | 83                                                   |
| 1N4742 | 12                                                       | 21                       | 9                                      | 700               | 0.25           | 5                               | 9.1        | 380                                                   | 76                                                   |
| 1N4743 | 13                                                       | 19                       | 10                                     | 700               | 0.25           | 5                               | 9.9        | 344                                                   | 69                                                   |
| 1N4744 | 15                                                       | 17                       | 14                                     | 700               | 0.25           | 5                               | 11.4       | 304                                                   | 61                                                   |
| 1N4745 | 16                                                       | 15.5                     | 16                                     | 700               | 0.25           | 5                               | 12.2       | 285                                                   | 57                                                   |
| 1N4746 | 18                                                       | 14                       | 20                                     | 750               | 0.25           | 5                               | 13.7       | 250                                                   | 50                                                   |
| 1N4747 | 20                                                       | 12.5                     | 22                                     | 750               | 0.25           | 5                               | 15.2       | 225                                                   | 45                                                   |
| 1N4748 | 22                                                       | 11.5                     | 23                                     | 750               | 0.25           | 5                               | 16.7       | 205                                                   | 41                                                   |
| 1N4749 | 24                                                       | 10.5                     | 25                                     | 750               | 0.25           | 5                               | 18.2       | 190                                                   | 38                                                   |
| 1N4750 | 27                                                       | 9.5                      | 35                                     | 750               | 0.25           | 5                               | 20.6       | 170                                                   | 34                                                   |
| 1N4751 | 30                                                       | 8.5                      | 40                                     | 1000              | 0.25           | 5                               | 22.8       | 150                                                   | 30                                                   |
| 1N4752 | 33                                                       | 7.5                      | 45                                     | 1000              | 0.25           | 5                               | 25.1       | 135                                                   | 27                                                   |
| 1N4753 | 36                                                       | 7.0                      | 50                                     | 1000              | 0.25           | 5                               | 27.4       | 125                                                   | 25                                                   |
| 1N4754 | 39                                                       | 6.5                      | 60                                     | 1000              | 0.25           | 5                               | 29.7       | 115                                                   | 23                                                   |
| 1N4755 | 43                                                       | 6.0                      | 70                                     | 1500              | 0.25           | 5                               | 32.7       | 110                                                   | 22                                                   |
| 1N4756 | 47                                                       | 5.5                      | 80                                     | 1500              | 0.25           | 5                               | 35.8       | 95                                                    | 19                                                   |
| 1N4757 | 51                                                       | 5.0                      | 95                                     | 1500              | 0.25           | 5                               | 38.8       | 90                                                    | 18                                                   |
| 1N4758 | 56                                                       | 4.5                      | 110                                    | 2000              | 0.25           | 5                               | 42.6       | 80                                                    | 16                                                   |
| 1N4759 | 62                                                       | 4.0                      | 125                                    | 2000              | 0.25           | 5                               | 47.1       | 70                                                    | 14                                                   |
| 1N4760 | 68                                                       | 3.7                      | 150                                    | 2000              | 0.25           | 5                               | 51.7       | 65                                                    | 13                                                   |
| 1N4761 | 75                                                       | 3.3                      | 175                                    | 2000              | 0.25           | 5                               | 56.0       | 60                                                    | 12                                                   |
| 1N4762 | 82                                                       | 3.0                      | 200                                    | 3000              | 0.25           | 5                               | 62.2       | 55                                                    | 11                                                   |
| 1N4763 | 91                                                       | 2.8                      | 250                                    | 3000              | 0.25           | 5                               | 69.2       | 50                                                    | 10                                                   |
| 1N4764 | 100                                                      | 2.5                      | 350                                    | 3000              | 0.25           | 5                               | 76.0       | 45                                                    | 9                                                    |

### NOTES:

- (1) The Zener impedance is derived from the 1KHz 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
- (2) Valid provided that electrodes at a distance of 10mm from case are kept at ambient temperature
- (3) Measured under thermal equilibrium and DC test conditions

# RATINGS AND CHARACTERISTIC CURVES 1N4728 THRU 1N4764

## Admissible power dissipation versus ambient temperature

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

