



# ZM4728 thru ZM4764

Zener Diodes

$V_z$  Range: 3.3 to 100 Volts Power Dissipation: 1.0W

## Features

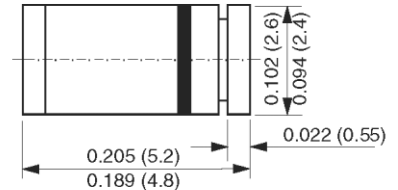
- ◆ Silicon Planar Power Zener Diodes.
- ◆ For use in stabilizing and clipping circuits with high power rating.
- ◆ Standard Zener voltage tolerance is  $\pm 10\%$ . Add suffix "A" for  $\pm 5\%$  tolerance. Other Zener voltages and tolerances are available upon request.
- ◆ These diodes are also available in the DO-41 case with type designation 1N4728 thru 1N4764



**MELF (Glass)**

## Mechanical Data

- ◆ Case: MELF Glass Case
- ◆ Weight: approx. 0.25g



**Dimensions in inches and (millimeters)**

## Maximum Ratings and Thermal Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified.)

| Parameter                                         | Symbol          | Value              | Unit                 |
|---------------------------------------------------|-----------------|--------------------|----------------------|
| Zener current (see Table "Characteristics")       |                 |                    |                      |
| Power dissipation at $T_{amb}=25^{\circ}\text{C}$ | $P_{tot}$       | 1.0 <sup>(1)</sup> | W                    |
| Thermal resistance junction to ambient air        | $R_{\theta JA}$ | 170 <sup>(1)</sup> | $^{\circ}\text{C/W}$ |
| Junction temperature                              | $T_j$           | 150                | $^{\circ}\text{C}$   |
| Storage temperature range                         | $T_s$           | -65 to +150        | $^{\circ}\text{C}$   |

**Notes:** 1. Valid provided that electrodes are kept at ambient temperature.

# Electrical Characteristics

(T<sub>A</sub> =25°C unless otherwise noted) Maximum V<sub>F</sub> =1.2V at I<sub>F</sub> =200mA

| Type number | Nominal zener voltage <sup>(3)</sup> at I <sub>ZT</sub> V <sub>Z</sub> (Volts) | Test current I <sub>ZT</sub> (mA) | Maximum zener impedance <sup>(1)</sup> |                     |                         | Maximum reverse leakage current |                           | Surge current at T <sub>A</sub> =25°C I <sub>R</sub> (mA) | Maximum regulator current <sup>(2)</sup> I <sub>ZM</sub> (mA) |
|-------------|--------------------------------------------------------------------------------|-----------------------------------|----------------------------------------|---------------------|-------------------------|---------------------------------|---------------------------|-----------------------------------------------------------|---------------------------------------------------------------|
|             |                                                                                |                                   | Z <sub>ZT</sub> at I <sub>ZT</sub> (Ω) | Z <sub>ZK</sub> (Ω) | at I <sub>ZK</sub> (mA) | I <sub>R</sub> (uA)             | at V <sub>R</sub> (Volts) |                                                           |                                                               |
| ZM4728      | 3.3                                                                            | 76                                | 10                                     | 400                 | 1.0                     | 100                             | 1                         | 1380                                                      | 276                                                           |
| ZM4729      | 3.6                                                                            | 69                                | 10                                     | 400                 | 1.0                     | 100                             | 1                         | 1260                                                      | 252                                                           |
| ZM4730      | 3.9                                                                            | 64                                | 9                                      | 400                 | 1.0                     | 50                              | 1                         | 1190                                                      | 234                                                           |
| ZM4731      | 4.3                                                                            | 58                                | 9                                      | 400                 | 1.0                     | 10                              | 1                         | 1070                                                      | 217                                                           |
| ZM4732      | 4.7                                                                            | 53                                | 8                                      | 500                 | 1.0                     | 10                              | 1                         | 970                                                       | 193                                                           |
| ZM4733      | 5.1                                                                            | 49                                | 7                                      | 550                 | 1.0                     | 10                              | 1                         | 890                                                       | 178                                                           |
| ZM4734      | 5.6                                                                            | 45                                | 5                                      | 600                 | 1.0                     | 10                              | 2                         | 810                                                       | 162                                                           |
| ZM4735      | 6.2                                                                            | 41                                | 2                                      | 700                 | 1.0                     | 10                              | 3                         | 730                                                       | 146                                                           |
| ZM4736      | 6.8                                                                            | 37                                | 3.5                                    | 700                 | 1.0                     | 10                              | 4                         | 660                                                       | 133                                                           |
| ZM4737      | 7.5                                                                            | 34                                | 4.0                                    | 700                 | 0.5                     | 10                              | 5                         | 605                                                       | 121                                                           |
| ZM4738      | 8.2                                                                            | 31                                | 4.5                                    | 700                 | 0.5                     | 10                              | 6                         | 550                                                       | 110                                                           |
| ZM4739      | 9.1                                                                            | 28                                | 5.0                                    | 700                 | 0.5                     | 10                              | 7                         | 500                                                       | 100                                                           |
| ZM4740      | 10                                                                             | 25                                | 7                                      | 700                 | 0.25                    | 10                              | 7.6                       | 454                                                       | 91                                                            |
| ZM4741      | 11                                                                             | 23                                | 8                                      | 700                 | 0.25                    | 5                               | 8.4                       | 414                                                       | 83                                                            |
| ZM4742      | 12                                                                             | 21                                | 9                                      | 700                 | 0.25                    | 5                               | 9.1                       | 380                                                       | 76                                                            |
| ZM4743      | 13                                                                             | 19                                | 10                                     | 700                 | 0.25                    | 5                               | 9.9                       | 344                                                       | 69                                                            |
| ZM4744      | 15                                                                             | 17                                | 14                                     | 700                 | 0.25                    | 5                               | 11.4                      | 304                                                       | 61                                                            |
| ZM4745      | 16                                                                             | 15.5                              | 16                                     | 700                 | 0.25                    | 5                               | 12.2                      | 285                                                       | 57                                                            |
| ZM4746      | 18                                                                             | 14                                | 20                                     | 750                 | 0.25                    | 5                               | 13.7                      | 250                                                       | 50                                                            |
| ZM4747      | 20                                                                             | 12.5                              | 22                                     | 750                 | 0.25                    | 5                               | 15.2                      | 225                                                       | 45                                                            |
| ZM4748      | 22                                                                             | 11.5                              | 23                                     | 750                 | 0.25                    | 5                               | 16.7                      | 205                                                       | 41                                                            |
| ZM4749      | 24                                                                             | 10.5                              | 25                                     | 750                 | 0.25                    | 5                               | 18.2                      | 190                                                       | 38                                                            |
| ZM4750      | 27                                                                             | 9.5                               | 35                                     | 750                 | 0.25                    | 5                               | 20.6                      | 170                                                       | 34                                                            |
| ZM4751      | 30                                                                             | 8.5                               | 40                                     | 1000                | 0.25                    | 5                               | 22.8                      | 150                                                       | 30                                                            |
| ZM4752      | 33                                                                             | 7.5                               | 45                                     | 1000                | 0.25                    | 5                               | 25.1                      | 135                                                       | 27                                                            |
| ZM4753      | 36                                                                             | 7.0                               | 50                                     | 1000                | 0.25                    | 5                               | 27.4                      | 125                                                       | 25                                                            |
| ZM4754      | 39                                                                             | 6.5                               | 60                                     | 1000                | 0.25                    | 5                               | 29.7                      | 115                                                       | 23                                                            |
| ZM4755      | 43                                                                             | 6.0                               | 70                                     | 1500                | 0.25                    | 5                               | 32.7                      | 110                                                       | 22                                                            |
| ZM4756      | 47                                                                             | 5.5                               | 80                                     | 1500                | 0.25                    | 5                               | 35.8                      | 95                                                        | 19                                                            |
| ZM4757      | 51                                                                             | 5.0                               | 95                                     | 1500                | 0.25                    | 5                               | 38.8                      | 90                                                        | 18                                                            |
| ZM4758      | 56                                                                             | 4.5                               | 110                                    | 2000                | 0.25                    | 5                               | 42.6                      | 80                                                        | 16                                                            |
| ZM4759      | 62                                                                             | 4.0                               | 125                                    | 2000                | 0.25                    | 5                               | 47.1                      | 70                                                        | 14                                                            |
| ZM4760      | 68                                                                             | 3.7                               | 150                                    | 2000                | 0.25                    | 5                               | 51.7                      | 65                                                        | 13                                                            |
| ZM4761      | 75                                                                             | 3.3                               | 175                                    | 2000                | 0.25                    | 5                               | 56.0                      | 60                                                        | 12                                                            |
| ZM4762      | 82                                                                             | 3.0                               | 200                                    | 3000                | 0.25                    | 5                               | 62.2                      | 55                                                        | 11                                                            |
| ZM4763      | 91                                                                             | 2.8                               | 250                                    | 3000                | 0.25                    | 5                               | 69.2                      | 50                                                        | 10                                                            |
| ZM4764      | 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<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
  - 2. Valid provided that electrodes at a distance of 10 mm from case are kept at ambient temperature
  - 3. Measured under thermal equilibrium and DC test conditions

## RATINGS AND CHARACTERISTIC CURVES

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

### Admissible power dissipation versus ambient temperature

Valid provided that electrodes are kept  
at ambient temperature

