

# ZM4728 thru ZM4764

Zener Diodes

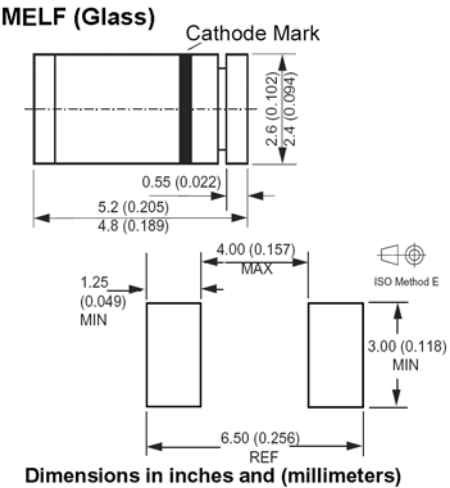
$V_z$  Range: 3.3 to 100 Volts    Power Dissipation: 1.0W

## 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

## Mechanical Data

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



## 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><br>V <sub>Z</sub> (Volts) | Test current<br>I <sub>ZT</sub> (mA) | Maximum zener impedance <sup>(1)</sup>       |                        |                               | Maximum reverse leakage current |                              | Surge current<br>at<br>T <sub>A</sub> =25°C<br>I <sub>R</sub> (mA) | Maximum regulator current <sup>(2)</sup><br>I <sub>ZM</sub> (mA) |
|-------------|-----------------------------------------------------------------------------------|--------------------------------------|----------------------------------------------|------------------------|-------------------------------|---------------------------------|------------------------------|--------------------------------------------------------------------|------------------------------------------------------------------|
|             |                                                                                   |                                      | Z <sub>ZT</sub><br>at I <sub>ZT</sub><br>(Ω) | Z <sub>ZK</sub><br>(Ω) | at<br>I <sub>ZK</sub><br>(mA) | I <sub>R</sub> (μA)             | at V <sub>R</sub><br>(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)

