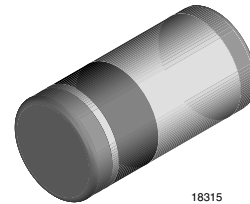


## Zener Diodes

### Features

- Silicon planar power Zener diodes
- For use in stabilizing and clipping circuits with high power rating
- Standard Zener voltage tolerance is  $\pm 5\%$
- These diodes are also available in the DO-41 case with type designation 1N4728A to 1N4764A
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition



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### Mechanical Data

**Case:** MELF DO-213AB (glass)

**Weight:** approx. 135 mg

**Cathode band color:** black

**Packaging codes/options:**

GS18/5K per 13" reel (12 mm tape), 10K/box

GS08/1.5K per 7" reel (12 mm tape), 12K/box

### Absolute Maximum Ratings

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

| Parameter                                   | Test condition | Symbol    | Value           | Unit |
|---------------------------------------------|----------------|-----------|-----------------|------|
| Zener current (see Table "Characteristics") |                |           |                 |      |
| Power dissipation                           |                | $P_{tot}$ | 1 <sup>1)</sup> | W    |

Note:

<sup>1)</sup> Valid provided that electrodes are kept at ambient temperature.

### Thermal Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

| Parameter                                  | Test condition | Symbol     | Value             | Unit               |
|--------------------------------------------|----------------|------------|-------------------|--------------------|
| Thermal resistance junction to ambient air |                | $R_{thJA}$ | 170 <sup>1)</sup> | K/W                |
| Junction temperature                       |                | $T_j$      | 175               | $^{\circ}\text{C}$ |
| Storage temperature                        |                | $T_{stg}$  | - 65 to + 175     | $^{\circ}\text{C}$ |

Note:

<sup>1)</sup> Valid provided that electrodes are kept at ambient temperature.

# ZM4728A to ZM4764A

Vishay Semiconductors



## Electrical Characteristics

| Part number | Nominal Zener voltage <sup>1)</sup> | Test current | Maximum dynamic impedance |                      |          | Maximum reverse leakage current |                    | Surge current <sup>3)</sup>                    | Maximum regulator current <sup>2)</sup> |
|-------------|-------------------------------------|--------------|---------------------------|----------------------|----------|---------------------------------|--------------------|------------------------------------------------|-----------------------------------------|
|             | $V_Z$ at $I_{ZT}$                   | $I_{ZT}$     | $Z_{ZT}$ at $I_{ZT}$      | $Z_{ZK}$ at $I_{ZK}$ | $I_{ZK}$ | $I_R$                           | Test voltage $V_R$ | at $T_A = 25\text{ }^{\circ}\text{C}$<br>$I_R$ | $I_{ZM}$                                |
|             | V                                   | mA           | $\Omega$                  | $\Omega$             | mA       | $\mu\text{A}$                   | V                  | mA                                             | mA                                      |
| ZM4728A     | 3.3                                 | 76           | 10                        | 400                  | 1        | 100                             | 1                  | 1380                                           | 276                                     |
| ZM4729A     | 3.6                                 | 69           | 10                        | 400                  | 1        | 100                             | 1                  | 1260                                           | 252                                     |
| ZM4730A     | 3.9                                 | 64           | 9                         | 400                  | 1        | 50                              | 1                  | 1190                                           | 234                                     |
| ZM4731A     | 4.3                                 | 58           | 9                         | 400                  | 1        | 10                              | 1                  | 1070                                           | 217                                     |
| ZM4732A     | 4.7                                 | 53           | 8                         | 500                  | 1        | 10                              | 1                  | 970                                            | 193                                     |
| ZM4733A     | 5.1                                 | 49           | 7                         | 550                  | 1        | 10                              | 1                  | 890                                            | 178                                     |
| ZM4734A     | 5.6                                 | 45           | 5                         | 600                  | 1        | 10                              | 2                  | 810                                            | 162                                     |
| ZM4735A     | 6.2                                 | 41           | 2                         | 700                  | 1        | 10                              | 3                  | 730                                            | 146                                     |
| ZM4736A     | 6.8                                 | 37           | 3.5                       | 700                  | 1        | 10                              | 4                  | 660                                            | 133                                     |
| ZM4737A     | 7.5                                 | 34           | 4                         | 700                  | 0.5      | 10                              | 5                  | 605                                            | 121                                     |
| ZM4738A     | 8.2                                 | 31           | 4.5                       | 700                  | 0.5      | 10                              | 6                  | 550                                            | 110                                     |
| ZM4739A     | 9.1                                 | 28           | 5                         | 700                  | 0.5      | 10                              | 7                  | 500                                            | 100                                     |
| ZM4740A     | 10                                  | 25           | 7                         | 700                  | 0.25     | 10                              | 7.6                | 454                                            | 91                                      |
| ZM4741A     | 11                                  | 23           | 8                         | 700                  | 0.25     | 5                               | 8.4                | 414                                            | 83                                      |
| ZM4742A     | 12                                  | 21           | 9                         | 700                  | 0.25     | 5                               | 9.1                | 380                                            | 76                                      |
| ZM4743A     | 13                                  | 19           | 10                        | 700                  | 0.25     | 5                               | 9.9                | 344                                            | 69                                      |
| ZM4744A     | 15                                  | 17           | 14                        | 700                  | 0.25     | 5                               | 11.4               | 304                                            | 61                                      |
| ZM4745A     | 16                                  | 15.5         | 16                        | 700                  | 0.25     | 5                               | 12.2               | 285                                            | 57                                      |
| ZM4746A     | 18                                  | 14           | 20                        | 750                  | 0.25     | 5                               | 13.7               | 250                                            | 50                                      |
| ZM4747A     | 20                                  | 12.5         | 22                        | 750                  | 0.25     | 5                               | 15.2               | 225                                            | 45                                      |
| ZM4748A     | 22                                  | 11.5         | 23                        | 750                  | 0.25     | 5                               | 16.7               | 205                                            | 41                                      |
| ZM4749A     | 24                                  | 10.5         | 25                        | 750                  | 0.25     | 5                               | 18.2               | 190                                            | 38                                      |
| ZM4750A     | 27                                  | 9.5          | 35                        | 750                  | 0.25     | 5                               | 20.6               | 170                                            | 34                                      |
| ZM4751A     | 30                                  | 8.5          | 40                        | 1000                 | 0.25     | 5                               | 22.8               | 150                                            | 30                                      |
| ZM4752A     | 33                                  | 7.5          | 45                        | 1000                 | 0.25     | 5                               | 25.1               | 135                                            | 27                                      |
| ZM4753A     | 36                                  | 7            | 50                        | 1000                 | 0.25     | 5                               | 27.4               | 125                                            | 25                                      |
| ZM4754A     | 39                                  | 6.5          | 60                        | 1000                 | 0.25     | 5                               | 29.7               | 115                                            | 23                                      |
| ZM4755A     | 43                                  | 6            | 70                        | 1500                 | 0.25     | 5                               | 32.7               | 110                                            | 22                                      |
| ZM4756A     | 47                                  | 5.5          | 80                        | 1500                 | 0.25     | 5                               | 35.8               | 95                                             | 19                                      |
| ZM4757A     | 51                                  | 5            | 95                        | 1500                 | 0.25     | 5                               | 38.8               | 90                                             | 18                                      |
| ZM4758A     | 56                                  | 4.5          | 110                       | 2000                 | 0.25     | 5                               | 42.6               | 80                                             | 16                                      |
| ZM4759A     | 62                                  | 4            | 125                       | 2000                 | 0.25     | 5                               | 47.1               | 70                                             | 14                                      |
| ZM4760A     | 68                                  | 3.7          | 150                       | 2000                 | 0.25     | 5                               | 51.7               | 65                                             | 13                                      |
| ZM4761A     | 75                                  | 3.3          | 175                       | 2000                 | 0.25     | 5                               | 56                 | 60                                             | 12                                      |
| ZM4762A     | 82                                  | 3            | 200                       | 3000                 | 0.25     | 5                               | 62.2               | 55                                             | 11                                      |
| ZM4763A     | 91                                  | 2.8          | 250                       | 3000                 | 0.25     | 5                               | 69.2               | 50                                             | 10                                      |
| ZM4764A     | 100                                 | 2.5          | 350                       | 3000                 | 0.25     | 5                               | 76                 | 45                                             | 9                                       |

Notes:

<sup>1)</sup> The zener impedance is derived from the 1 kHz 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

<sup>2)</sup> Valid provided that electrodes are kept at ambient temperature

<sup>3)</sup> Measured under thermal equilibrium and DC test conditions.

## Typical Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

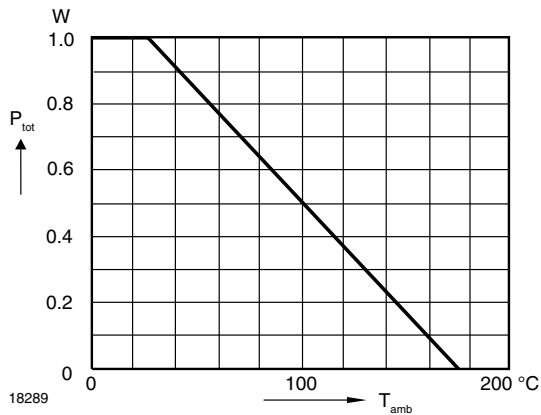
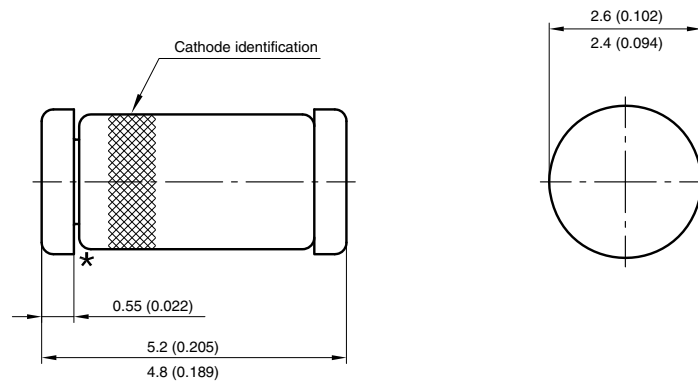


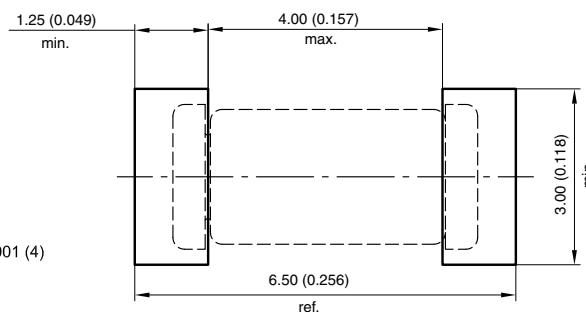
Figure 1. Admissible Power Dissipation vs. Ambient Temperature

## Package Dimensions in millimeters (inches): MELF DO-213AB (glass)



★ The gap between plug and glass can be either on cathode or anode side

Foot print recommendation:



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