



# ZM4728 THRU ZM4764

## SILICON PLANAR POWER ZENER DIODES

### Features

#### Silicon Planar Power Zener Diodes

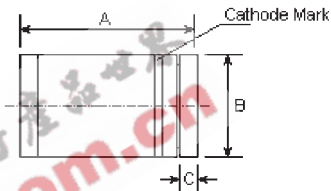
for use in stabilizing and clipping circuits with high power rating. Standard Zener voltage tolerance is  $\pm 10\%$ . Add suffix "A" for  $\pm 5\%$  tolerance. Other tolerances available upon request.

These diodes are also available in DO-41 case with the type designation 1N4728 thru 1N4764.

These diodes are delivered taped.  
Details see "Taping".

Weight approx. : 0.25g

#### MELF



| DIM | DIMENSIONS |       |      |      | Note   |
|-----|------------|-------|------|------|--------|
|     | inches     |       | mm   |      |        |
|     | Min.       | Max.  | Min. | Max. |        |
| A   | 0.189      | 0.205 | 4.8  | 5.2  |        |
| B   | 0.092      | 0.100 | 2.35 | 2.55 | $\phi$ |
| C   | 0.016      | -     | 0.4  | -    |        |

### Absolute Maximum Ratings ( $T_a=25^\circ\text{C}$ )

|   | Symbols   | Values           | Units            |
|---|-----------|------------------|------------------|
| Zener current see Table "Characteristics"       |           |                  |                  |
| Power dissipation at $T_{amb}=25^\circ\text{C}$ | $P_{tot}$ | 1 <sup>(1)</sup> | W                |
| Junction temperature                            | $T_j$     | 175              | $^\circ\text{C}$ |
| Storage temperature range                       | $T_s$     | -65 to +175      | $^\circ\text{C}$ |

Note:

(1) Valid provided that electrodes are kept at ambient temperature.

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

|  | Symbols   | Min. | Typ. | Max.               | Units |
|--|-----------|------|------|--------------------|-------|
| Thermal resistance junction to ambient Air | $R_{thA}$ | -    | -    | 170 <sup>(1)</sup> | K/W   |
| Forward voltage at $I_F=200\text{mA}$      | $V_F$     | -    | -    | 1.2                | V     |

Note:

(1) Valid provided that electrodes are kept at ambient temperature.

| Type   | Nominal Zener voltage range <sup>3)</sup> at $I_{ZT}$ | Test current | Maximum Zener Impedance <sup>1)</sup> |          |             | Maximum reverse leakage current |          | Surge current at $T_A=25^\circ\text{C}$ | Maximum regulator current <sup>2)</sup> |
|--------|---|--------------|---------------------------------------|----------|-------------|---------------------------------|----------|---|---|
|        | $V_z$   | $I_{ZT}$     | at $I_{ZT}$                           | $Z_{ZK}$ | at $I_{ZK}$ | $I_R$                           | at $V_R$ | $I_R$                                   | $I_{ZM}$                                |
|        | V   | mA           | $\Omega$                              | $\Omega$ | mA          | $\mu\text{A}$                   | V        | mA                                      | mA                                      |
| ZM4728 | 3.3   | 76           | 10                                    | 400      | 1.0         | 150                             | 1        | 1375                                    | 275                                     |
| ZM4729 | 3.6   | 69           | 10                                    | 400      | 1.0         | 100                             | 1        | 1260                                    | 252                                     |
| ZM4730 | 3.9   | 64           | 9                                     | 400      | 1.0         | 100                             | 1        | 1190                                    | 234                                     |
| ZM4731 | 4.3   | 58           | 9                                     | 400      | 1.0         | 50                              | 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 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.

(2) Valid provided that electrodes are kept at ambient temperature.

(3) Measured under thermal equilibrium and DC test conditions.

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## RATINGS AND CHARACTERISTIC CURVES

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### Admissible power dissipation versus ambient temperature

Valid provided that electrodes are kept  
at ambient temperature

