



Micro Commercial Components  
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**1N4728A  
 THRU  
 1N4761A**

**Features**

- Hermetic Glass Package
- Silicon Planar Zener Diodes
- Lead Free Finish/Rohs Compliant (Note2) ("P" Suffix designates Compliant. See ordering information)
- Moisture Sensitivity: Level 1

**1.0 Watt  
 Zener Diode  
 3.3 to 75 Volts**

**Mechanical Data**

- Case: DO-41 Glass Package
- Marking : Cathode band and type number
- Weight: 0.309 grams (Approx.)

**Maximum Ratings**

- Operating Temperature: -65°C to +200°C
- Storage Temperature: -65°C to +200°C
- For capacitive load, derate current by 20%

**Electrical Characteristics @ 25°C Unless Otherwise Specified**

|                           |                   |         |                       |
|---------------------------|-------------------|---------|-----------------------|
| DC Power Dissipation      | P <sub>d</sub>    | 1.0W    | T <sub>A</sub> ≤ 50°C |
| Forward Voltage Drop      | V <sub>F</sub>    | 1.2V    |                       |
| Thermal Resistance        | R <sub>thJA</sub> | 100K/W  | Note 1                |
| Power Derating from 100°C | P <sub>tot</sub>  | 10mW/°C |                       |

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

(2). Lead in Glass Exemption Applied, see EU Directive Annex 7(C)-I.

DO-41G

| DIMENSIONS |        |       |       |       | NOTE     |
|------------|--------|-------|-------|-------|----------|
| DIM        | INCHES |       | MM    |       |          |
|            | MIN    | MAX   | MIN   | MAX   |          |
| A          | -----  | 0.177 | ----- | 4.50  |          |
| B          | -----  | 0.110 | ----- | 2.80  | Diameter |
| C          | 0.026  | 0.034 | 0.70  | 0.90  | Diameter |
| D          | 1.000  | ----- | 25.40 | ----- |          |

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

| MCC Part Number | Zener Voltage                    | Test Current    | Maximum Dynamic Impedance         |                                   |                 | Maximum Reverse Leakage Current |                | Surge Current  | Maximum Regulator Current |
|-----------------|----------------------------------|-----------------|-----------------------------------|-----------------------------------|-----------------|---------------------------------|----------------|----------------|---------------------------|
|                 | V <sub>Z</sub> @ I <sub>ZT</sub> | I <sub>ZT</sub> | Z <sub>ZT</sub> @ I <sub>ZT</sub> | Z <sub>ZK</sub> @ I <sub>ZK</sub> | I <sub>ZK</sub> | I <sub>R</sub> @ V <sub>R</sub> | V <sub>R</sub> | I <sub>R</sub> | I <sub>ZM</sub>           |
|                 | Volts                            | mA              | OHMS                              | OHMS                              | mA              | µA                              | Volts          | mA             | mA                        |
| 1N4728A         | 3.3                              | 76              | 10                                | 400                               | 1               | 100                             | 1              | 1380           | 276                       |
| 1N4729A         | 3.6                              | 69              | 10                                | 400                               | 1               | 100                             | 1              | 1260           | 252                       |
| 1N4730A         | 3.9                              | 64              | 9                                 | 400                               | 1               | 50                              | 1              | 1190           | 234                       |
| 1N4731A         | 4.3                              | 58              | 9                                 | 400                               | 1               | 10                              | 1              | 1070           | 217                       |
| 1N4732A         | 4.7                              | 53              | 8                                 | 500                               | 1               | 10                              | 1              | 970            | 193                       |
| 1N4733A         | 5.1                              | 49              | 7                                 | 550                               | 1               | 10                              | 1              | 890            | 178                       |
| 1N4734A         | 5.6                              | 45              | 5                                 | 600                               | 1               | 10                              | 2              | 810            | 162                       |
| 1N4735A         | 6.2                              | 41              | 2                                 | 700                               | 1               | 10                              | 3              | 730            | 146                       |
| 1N4736A         | 6.8                              | 37              | 3.5                               | 700                               | 1               | 10                              | 4              | 660            | 133                       |
| 1N4737A         | 7.5                              | 34              | 4                                 | 700                               | 0.5             | 10                              | 5              | 605            | 121                       |
| 1N4738A         | 8.2                              | 31              | 4.5                               | 700                               | 0.5             | 10                              | 6              | 550            | 110                       |
| 1N4739A         | 9.1                              | 28              | 5                                 | 700                               | 0.5             | 10                              | 7              | 500            | 100                       |
| 1N4740A         | 10                               | 25              | 7                                 | 700                               | 0.25            | 10                              | 7.6            | 454            | 91                        |
| 1N4741A         | 11                               | 23              | 8                                 | 700                               | 0.25            | 5                               | 8.4            | 414            | 83                        |
| 1N4742A         | 12                               | 21              | 9                                 | 700                               | 0.25            | 5                               | 9.1            | 380            | 76                        |
| 1N4743A         | 13                               | 19              | 10                                | 700                               | 0.25            | 5                               | 9.9            | 344            | 69                        |
| 1N4744A         | 15                               | 17              | 14                                | 700                               | 0.25            | 5                               | 11.4           | 304            | 61                        |
| 1N4745A         | 16                               | 15.5            | 16                                | 700                               | 0.25            | 5                               | 12.2           | 285            | 57                        |
| 1N4746A         | 18                               | 14              | 20                                | 750                               | 0.25            | 5                               | 13.7           | 250            | 50                        |
| 1N4747A         | 20                               | 12.5            | 22                                | 750                               | 0.25            | 5                               | 15.2           | 225            | 45                        |
| 1N4748A         | 22                               | 11.5            | 23                                | 750                               | 0.25            | 5                               | 16.7           | 205            | 41                        |
| 1N4749A         | 24                               | 10.5            | 25                                | 750                               | 0.25            | 5                               | 18.2           | 190            | 38                        |
| 1N4750A         | 27                               | 9.5             | 35                                | 750                               | 0.25            | 5                               | 20.6           | 170            | 34                        |
| 1N4751A         | 30                               | 8.5             | 40                                | 1000                              | 0.25            | 5                               | 22.8           | 150            | 30                        |
| 1N4752A         | 33                               | 7.5             | 45                                | 1000                              | 0.25            | 5                               | 25.1           | 135            | 27                        |
| 1N4753A         | 36                               | 7               | 50                                | 1000                              | 0.25            | 5                               | 27.4           | 125            | 25                        |
| 1N4754A         | 39                               | 6.5             | 60                                | 1000                              | 0.25            | 5                               | 29.7           | 115            | 23                        |
| 1N4755A         | 43                               | 6               | 70                                | 1500                              | 0.25            | 5                               | 32.7           | 110            | 22                        |
| 1N4756A         | 47                               | 5.5             | 80                                | 1500                              | 0.25            | 5                               | 35.8           | 95             | 19                        |
| 1N4757A         | 51                               | 5               | 95                                | 1500                              | 0.25            | 5                               | 38.8           | 90             | 18                        |
| 1N4758A         | 56                               | 4.5             | 110                               | 2000                              | 0.25            | 5                               | 42.6           | 80             | 16                        |
| 1N4759A         | 62                               | 4               | 125                               | 2000                              | 0.25            | 5                               | 47.1           | 70             | 14                        |
| 1N4760A         | 68                               | 3.7             | 150                               | 2000                              | 0.25            | 5                               | 51.7           | 65             | 13                        |
| 1N4761A         | 75                               | 3.3             | 175                               | 2000                              | 0.25            | 5                               | 56             | 60             | 12                        |

- Note**
- 1: The JEDEC type number shown with an A suffix have a 5% tolerance on nominal zener voltage. C signifies 2%.
  - 2: 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 DC 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 eliminate unstable units.
  - 3: The reverse surge current is measured at 25°C ambient using a 1/2 square wave or equivalent sine wave pulse 1/120 second duration superimposed on I<sub>ZT</sub>.
  - 4: Voltage measurements to be performed 90 seconds after application of DC current.
  - 5: RoHs Compliant already and Pb-free sticker on reel , box & carton indicated RoHs compliant .

# 1N4728A thru 1N4761A



**Figure 1. Typical Thermal Resistance versus Lead Length**



**Figure 2. Effect of Zener Current**



**Figure 3. Effect of Zener Current on Zener Impedance**



**Figure 4. Effect of Zener Voltage on Zener Impedance**



This graph represents 90 percentile data points.  
For worst case design characteristics, multiply surge power by 2/3.

**Figure 5. Maximum Surge Power**



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### Ordering Information :

| Device         | Packing                        |
|----------------|--------------------------------|
| Part Number-TP | Tape&Reel: 5Kpcs/Reel          |
| Part Number-AP | Ammo Packing: 2.5Kpcs/Ammo Box |
| Part Number-BP | Bulk: 50Kpcs/Carton            |

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