



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

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

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

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 _d | 1.0W | T _A ≤ 50°C |
| Forward Voltage Drop | V _F | 1.2V | |
| Thermal Resistance | R _{thJA} | 100K/W | Note 1 |
| Power Derating from 100°C | P _{tot} | 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 ($T_A = 25^\circ\text{C}$ unless otherwise noted). Maximum $V_F = 1.2\text{V}$ at $I_F = 200\text{mA}$

| MCC Part Number | Zener Voltage | Test Current | Maximum Dynamic Impedance | | | Maximum Reverse Leakage Current | | Surge Current | Maximum Regulator Current |
|--------------------|------------------|-----------------|---------------------------|----------|-------------------|------------------------------------|----------|------------------|---------------------------------|
| | | | $V_Z @ I_{ZT}$ | I_{ZT} | $Z_{ZT} @ I_{ZT}$ | $Z_{ZK} @ I_{ZK}$ | I_{ZK} | | |
| | 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_{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 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_{ZT} .
- 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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