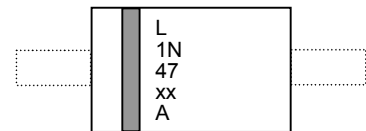


## 1 Watt DO-41 Hermetically Sealed Glass Zener Voltage Regulators



### Maximum Ratings

| Rating                                                                 | Symbol                            | Value       | Units |
|------------------------------------------------------------------------|-----------------------------------|-------------|-------|
| Maximum Steady State Power Dissipation<br>@TL≤50°C, Lead Length = 3/8" | P <sub>D</sub>                    | 1           | W     |
| Derate Above 50°C                                                      |                                   | 6.67        | mW/°C |
| Operating and Storage<br>Temperature Range                             | T <sub>J</sub> , T <sub>stg</sub> | -65 to +200 | °C    |



L = Logo  
1N47xxA = Device Code

### Specification Features:

- Zener Voltage Range = 3.3V to 100V
- ESD Rating of Class 3 (>6 KV) per Human Body Model
- DO-41 Package (DO-204AL)
- Double Slug Type Construction
- Metallurgical Bonded Construction
- Oxide Passivated Die
- RoHS Compliant
- Solder Hot Dip Tin (Sn) Lead Finish

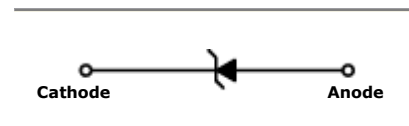
### Specification Features:

**Case** : Double slug type, hermetically sealed glass

**Finish** : All external surfaces are corrosion resistant and leads are readily solderable

**Polarity** : Cathode indicated by polarity band

**Mounting**: Any





**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted.)

| Device<br>(Note 1.) | Device<br>Marking | Zener Voltage (Note 2 & 3.) |     |       |           | Zener Impedance (Note 4.) |                  |      | Leakage Current      |         |
|---------------------|-------------------|-----------------------------|-----|-------|-----------|---------------------------|------------------|------|----------------------|---------|
|                     |                   | $V_Z$ (Volts)               |     |       | $@I_{ZT}$ | $Z_{ZT} @I_{ZT}$          | $Z_{ZK} @I_{ZK}$ |      | $I_R @ V_R$          |         |
|                     |                   | Min                         | Nom | Max   | (mA)      | ( $\Omega$ )              | ( $\Omega$ )     | (mA) | ( $\mu\text{A}$ Max) | (Volts) |
| 1N4728A             | 1N4728A           | 3.135                       | 3.3 | 3.465 | 76        | 10                        | 400              | 1    | 100                  | 1       |
| 1N4729A             | 1N4729A           | 3.420                       | 3.6 | 3.780 | 69        | 10                        | 400              | 1    | 100                  | 1       |
| 1N4730A             | 1N4730A           | 3.705                       | 3.9 | 4.095 | 64        | 9                         | 400              | 1    | 50                   | 1       |
| 1N4731A             | 1N4731A           | 4.085                       | 4.3 | 4.515 | 58        | 9                         | 400              | 1    | 10                   | 1       |
| 1N4732A             | 1N4732A           | 4.465                       | 4.7 | 4.935 | 53        | 8                         | 500              | 1    | 10                   | 1       |
| 1N4733A             | 1N4733A           | 4.845                       | 5.1 | 5.355 | 49        | 7                         | 550              | 1    | 10                   | 1       |
| 1N4734A             | 1N4734A           | 5.320                       | 5.6 | 5.880 | 45        | 5                         | 600              | 1    | 10                   | 2       |
| 1N4735A             | 1N4735A           | 5.890                       | 6.2 | 6.510 | 41        | 2                         | 700              | 1    | 10                   | 3       |
| 1N4736A             | 1N4736A           | 6.460                       | 6.8 | 7.140 | 37        | 3.5                       | 700              | 1    | 10                   | 4       |
| 1N4737A             | 1N4737A           | 7.125                       | 7.5 | 7.875 | 34        | 4                         | 700              | 0.5  | 10                   | 5       |
| 1N4738A             | 1N4738A           | 7.790                       | 8.2 | 8.610 | 31        | 4.5                       | 700              | 0.5  | 10                   | 6       |
| 1N4739A             | 1N4739A           | 8.645                       | 9.1 | 9.555 | 28        | 5                         | 700              | 0.5  | 10                   | 7       |
| 1N4740A             | 1N4740A           | 9.500                       | 10  | 10.50 | 25        | 7                         | 700              | 0.25 | 10                   | 7.6     |
| 1N4741A             | 1N4741A           | 10.45                       | 11  | 11.55 | 23        | 8                         | 700              | 0.25 | 5                    | 8.4     |
| 1N4742A             | 1N4742A           | 11.40                       | 12  | 12.60 | 21        | 9                         | 700              | 0.25 | 5                    | 9.1     |
| 1N4743A             | 1N4743A           | 12.35                       | 13  | 13.65 | 19        | 10                        | 700              | 0.25 | 5                    | 9.9     |
| 1N4744A             | 1N4744A           | 14.25                       | 15  | 15.75 | 17        | 14                        | 700              | 0.25 | 5                    | 11.4    |
| 1N4745A             | 1N4745A           | 15.20                       | 16  | 16.80 | 15.5      | 16                        | 700              | 0.25 | 5                    | 12.2    |
| 1N4746A             | 1N4746A           | 17.10                       | 18  | 18.90 | 14        | 20                        | 750              | 0.25 | 5                    | 13.7    |
| 1N4747A             | 1N4747A           | 19.00                       | 20  | 21.00 | 12.5      | 22                        | 750              | 0.25 | 5                    | 15.2    |
| 1N4748A             | 1N4748A           | 20.90                       | 22  | 23.10 | 11.5      | 23                        | 750              | 0.25 | 5                    | 16.7    |
| 1N4749A             | 1N4749A           | 22.80                       | 24  | 25.20 | 10.5      | 25                        | 750              | 0.25 | 5                    | 18.2    |
| 1N4750A             | 1N4750A           | 25.65                       | 27  | 28.35 | 9.5       | 35                        | 750              | 0.25 | 5                    | 20.6    |
| 1N4751A             | 1N4751A           | 28.50                       | 30  | 31.50 | 8.5       | 40                        | 1000             | 0.25 | 5                    | 22.8    |
| 1N4752A             | 1N4752A           | 31.35                       | 33  | 34.65 | 7.5       | 45                        | 1000             | 0.25 | 5                    | 25.1    |
| 1N4753A             | 1N4753A           | 34.20                       | 36  | 37.80 | 7         | 50                        | 1000             | 0.25 | 5                    | 27.4    |
| 1N4754A             | 1N4754A           | 37.05                       | 39  | 40.95 | 6.5       | 60                        | 1000             | 0.25 | 5                    | 29.7    |
| 1N4755A             | 1N4755A           | 40.85                       | 43  | 45.15 | 6         | 70                        | 1500             | 0.25 | 5                    | 32.7    |
| 1N4756A             | 1N4756A           | 44.65                       | 47  | 49.35 | 5.5       | 80                        | 1500             | 0.25 | 5                    | 35.8    |
| 1N4758A             | 1N4758A           | 53.20                       | 56  | 58.80 | 4.5       | 110                       | 2000             | 0.25 | 5                    | 42.6    |
| 1N4759A             | 1N4759A           | 58.90                       | 62  | 65.10 | 4         | 125                       | 2000             | 0.25 | 5                    | 47.1    |
| 1N4761A             | 1N4761A           | 71.25                       | 75  | 78.75 | 3.3       | 175                       | 2000             | 0.25 | 5                    | 56.0    |
| 1N4763A             | 1N4763A           | 86.45                       | 91  | 95.55 | 2.8       | 250                       | 3000             | 0.25 | 5                    | 69.2    |
| 1N4764A             | 1N4764A           | 95.00                       | 100 | 105.0 | 2.5       | 350                       | 3000             | 0.25 | 5                    | 76.0    |

$V_F = 1.2\text{V}$  Max  $@I_F = 200\text{mA}$  for 30V below types,  $V_F = 2.0\text{V}$  Max  $@I_F = 200\text{mA}$  for 30~56V types, and  $V_F = 3.0\text{V}$  Max  $@I_F = 200\text{mA}$  for 60V above types

**1. TOLERANCE AND TYPE NUMBER DESIGNATION ( $V_Z$ )**

The type numbers listed have a standard tolerance on the nominal zener voltage of  $\pm 5\%$ .

**2. SPECIALS AVAILABLE INCLUDE**

Nominal zener voltages between the voltages shown and tighter voltage, for detailed information on price, availability and delivery, contact you nearest Tak Cheong representative.

**3. ZENER VOLTAGE ( $V_Z$ ) MEASUREMENT**

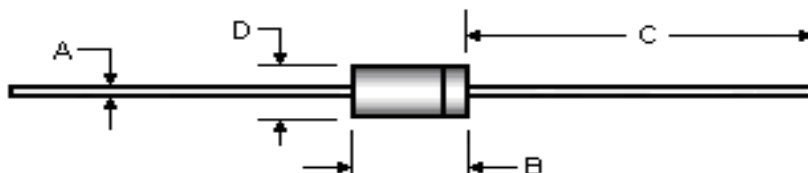
The zener voltage ( $V_Z$ ) is tested under pulse condition. The measured  $V_Z$  is guaranteed to be within specification with device junction in thermal equilibrium.

**4. ZENER IMPEDANCE ( $Z_Z$ ) DERIVATION**

The zener impedance is derived from the 60 cycle 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  $I_{ZK}$ .

## Package Outline

### Case Outline



| DIM      | DO-41       |      |        |       |
|----------|-------------|------|--------|-------|
|          | Millimeters |      | Inches |       |
|          | Min         | Max  | Min    | Max   |
| <b>A</b> | 0.68        | 0.81 | 0.027  | 0.032 |
| <b>B</b> | 3.70        | 4.25 | 0.146  | 0.167 |
| <b>C</b> | 25.40       | ---  | 1.000  | ---   |
| <b>D</b> | 2.10        | 2.60 | 0.083  | 0.102 |

## **NOTICE**

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The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Tak Cheong Semiconductor Co., Ltd., or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

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