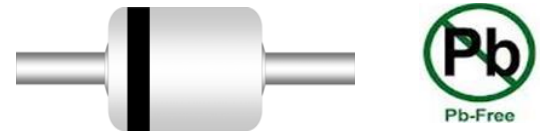


## Small Signal Product

### 1W DO-41 Zener Voltage Regulators

#### FEATURES

- Zener voltage range 3.3 to 56Volts
- DO-41 package (JEDEC)
- Through-hole device type mounting
- Hermetically sealed glass
- Compression bonded construction
- All external surfaces are corrosion resistant and terminals are readily solderable
- Solder hot dip tin(Sn) lead finish
- Pb free and RoHS compliant

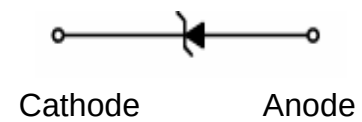


**DO-41**



#### MECHANICAL DATA

- Lead: Pure tin plated, lead free, solderable per MIL-STD-202, method 208 guaranteed
- Polarity: Color band denotes cathode
- High temperature soldering guaranteed: ' 260°C/10 s
- Weight: 0.270~0.290 grams
- Marking code: 1N47XXG for  $\pm 5\%$  Vz



#### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise noted)

| PARAMETER                              | SYMBOL           | VALUE         | UNIT |
|----------------------------------------|------------------|---------------|------|
| Power Dissipation                      | P <sub>D</sub>   | 1             | W    |
| Thermal Resistance Junction to Lead    | R <sub>jl</sub>  | 53.5          | °C/W |
| Thermal Resistance Junction to Ambient | R <sub>ja</sub>  | 100           | °C/W |
| Operating Temperature Range            | T <sub>OPR</sub> | - 65 to + 200 | °C   |
| Storage Temperature Range              | T <sub>STG</sub> | - 65 to + 200 | °C   |

Note: These ratings are limiting values above which the serviceability of the diode may be impaired

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### ELECTRICAL CHARACTERISTICS (Ratings at $T_A=25^{\circ}\text{C}$ ambient temperature unless otherwise specified)

 $V_F$  Forward Voltage = 1.2 V Maximum @  $I_F = 200$  mA for all types

| Device Type | $V_Z$ @ $I_{ZT}$<br>(V)<br>Typ. | $I_{ZT}$<br>(mA) | $Z_{ZT}$ @ $O_{ZK}$<br>( $\Omega$ )<br>Max. | $I_{ZK}$<br>(mA) | $Z_{ZK}$ @ $I_{ZK}$<br>( $\Omega$ )<br>Max. | $I_R$ @ $V_R$<br>( $\mu\text{A}$ )<br>Max. | $V_R$<br>(V) |
|-------------|---------------------------------|------------------|---------------------------------------------|------------------|---------------------------------------------|--------------------------------------------|--------------|
| 1N4728G     | 3.3                             | 76               | 10                                          | 1                | 400                                         | 100                                        | 1            |
| 1N4729G     | 3.6                             | 69               | 10                                          | 1                | 400                                         | 100                                        | 1            |
| 1N4730G     | 3.9                             | 64               | 9                                           | 1                | 400                                         | 50                                         | 1            |
| 1N4731G     | 4.3                             | 58               | 9                                           | 1                | 400                                         | 10                                         | 1            |
| 1N4732G     | 4.7                             | 53               | 8                                           | 1                | 500                                         | 10                                         | 1            |
| 1N4733G     | 5.1                             | 49               | 7                                           | 1                | 550                                         | 10                                         | 1            |
| 1N4734G     | 5.6                             | 45               | 5                                           | 1                | 600                                         | 10                                         | 2            |
| 1N4735G     | 6.2                             | 41               | 2                                           | 1                | 700                                         | 10                                         | 3            |
| 1N4736G     | 6.8                             | 37               | 3.5                                         | 1                | 700                                         | 10                                         | 4            |
| 1N4737G     | 7.5                             | 34               | 4                                           | 0.5              | 700                                         | 10                                         | 5            |
| 1N4738G     | 8.2                             | 31               | 4.5                                         | 0.5              | 700                                         | 10                                         | 6            |
| 1N4739G     | 9.1                             | 28               | 5                                           | 0.5              | 700                                         | 10                                         | 7            |
| 1N4740G     | 10                              | 25               | 7                                           | 0.25             | 700                                         | 10                                         | 7.6          |
| 1N4741G     | 11                              | 23               | 8                                           | 0.25             | 700                                         | 5                                          | 8.4          |
| 1N4742G     | 12                              | 21               | 9                                           | 0.25             | 700                                         | 5                                          | 9.1          |
| 1N4743G     | 13                              | 19               | 10                                          | 0.25             | 700                                         | 5                                          | 9.9          |
| 1N4744G     | 15                              | 17               | 14                                          | 0.25             | 700                                         | 5                                          | 11.4         |
| 1N4745G     | 16                              | 15.5             | 16                                          | 0.25             | 700                                         | 5                                          | 12.2         |
| 1N4746G     | 18                              | 14               | 20                                          | 0.25             | 700                                         | 5                                          | 13.7         |
| 1N4747G     | 20                              | 12.5             | 22                                          | 0.25             | 750                                         | 5                                          | 15.2         |
| 1N4748G     | 22                              | 11.5             | 23                                          | 0.25             | 750                                         | 5                                          | 16.7         |
| 1N4749G     | 24                              | 10.5             | 25                                          | 0.25             | 750                                         | 5                                          | 18.2         |
| 1N4750G     | 27                              | 9.5              | 35                                          | 0.25             | 750                                         | 5                                          | 20.6         |
| 1N4751G     | 30                              | 8.5              | 40                                          | 0.25             | 1000                                        | 5                                          | 22.8         |
| 1N4752G     | 33                              | 7.5              | 45                                          | 0.25             | 1000                                        | 5                                          | 25.1         |
| 1N4753G     | 36                              | 7                | 50                                          | 0.25             | 1000                                        | 5                                          | 27.4         |
| 1N4754G     | 39                              | 6.5              | 60                                          | 0.25             | 1000                                        | 5                                          | 29.7         |
| 1N4755G     | 43                              | 6                | 70                                          | 0.25             | 1500                                        | 5                                          | 32.7         |
| 1N4756G     | 47                              | 5.5              | 80                                          | 0.25             | 1500                                        | 5                                          | 35.8         |
| 1N4757G     | 51                              | 5                | 95                                          | 0.25             | 1500                                        | 5                                          | 38.8         |
| 1N4758G     | 56                              | 4.5              | 110                                         | 0.25             | 2000                                        | 5                                          | 42.6         |

Notes : 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. SPECIAL AVAILABLE INCLUDE

Nominal zener voltages shown and tighter voltage, for detailed information on price, availability and delivery, contact your nearest Taiwan Semiconductor 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 to  $I_{ZT}$  or  $I_{ZK}$ .

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| ORDERING INFORMATION |              |                     |         |                 |
|----------------------|--------------|---------------------|---------|-----------------|
| PART NO.             | PACKING CODE | GREEN COMPOUND CODE | PACKAGE | PACKING         |
| 1N47xxG<br>(Note1,2) | R0           | G                   | DO-41   | 5K / 14" Reel   |
|                      | A0           | G                   | DO-41   | 3K / BOX (Ammo) |

Note 1: "xx" is Device Code from "28" through "58"

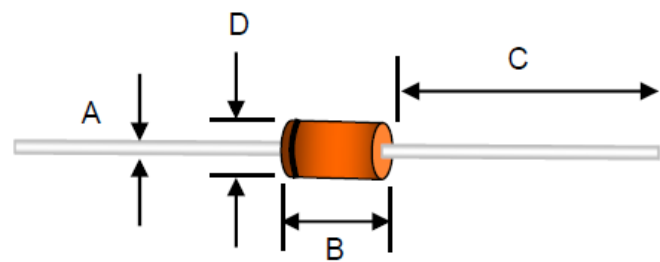
Note 2: Whole series with green compound.

| EXAMPLE            |          |              |                     |                |
|--------------------|----------|--------------|---------------------|----------------|
| PREFERRED PART NO. | PART NO. | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION    |
| 1N4728G R0G        | 1N4728G  | R0           | G                   | Green compound |

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PACKAGE OUTLINE DIMENSIONS

DO-41



| DIM. | Unit (mm) |      | Unit (inch) |       |
|------|-----------|------|-------------|-------|
|      | Min       | Max  | Min         | Max   |
| A    | 0.50      | 0.90 | 0.020       | 0.035 |
| B    | 3.50      | 5.20 | 0.138       | 0.205 |
| C    | 22.00     | --   | 0.866       | --    |
| D    | 1.80      | 2.80 | 0.071       | 0.110 |

MARKING DIAGRAM



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