



## Features:

- High reliability.
- Very sharp reverse characteristic.
- Low reverse current level.
- $V_z$ -tolerance  $\pm 5\%$ .

## Application:

Voltage stabilization.

## Absolute Maximum Ratings $T_j = 25^\circ\text{C}$

| Parameter                 | Test Conditions                        | Symbol           | Value       | Unit |
|---------------------------|--|------------------|-------------|------|
| Power dissipation         | $T_{\text{amb}} \leq 50^\circ\text{C}$ | $P_v$            | 1           | W    |
| Z-current                 | -                                      | $I_z$            | $P_v / V_z$ | mA   |
| Junction temperature      | -                                      | $T_j$            | 200         | °C   |
| Storage temperature range | -                                      | $T_{\text{stg}}$ | -65 to +175 |      |

## Maximum Thermal Resistance $T_j = 25^\circ\text{C}$

| Parameter        | Test Conditions                                    | Symbol            | Value | Unit |
|------------------|--|-------------------|-------|------|
| Junction ambient | $l = 9.5 \text{ mm (3/8") } T_L = \text{constant}$ | $R_{\text{thJA}}$ | 100   | K/W  |

Stresses exceeding maximum ratings may damage the device. Maximum ratings are stress ratings only. Functional operation above the recommended operating conditions is not implied. Extended exposure to stresses above the recommended operating conditions may affect device reliability.

## Electrical Characteristics $T_j = 25^\circ\text{C}$

| Parameter       | Test Conditions        | Symbol | Maximum | Unit |
|-----------------|------------------------|--------|---------|------|
| Forward voltage | $I_F = 200 \text{ mA}$ | $V_F$  | 1.2     | V    |

# Zener Diode



## Specification Table

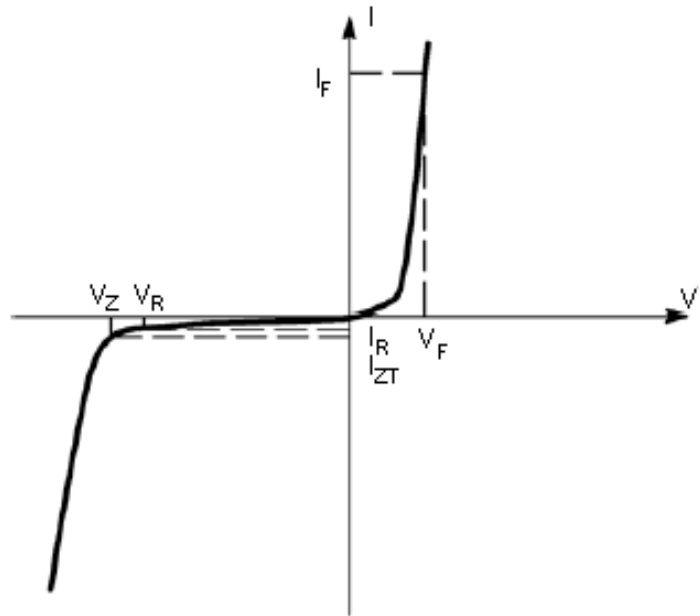
| $V_{Znom}^{1)}$ | $I_{ZT}$ | for | $r_{ziT}$ | $r_{ziK}$ | at | $I_{ZK}$ | $I_R$   | at | $V_R$ | Part Number |
|-----------------|----------|-----|-----------|-----------|----|----------|---------|----|-------|-------------|
| V               | mA       |     | $\Omega$  | $\Omega$  |    | mA       | $\mu A$ |    | V     |             |
| 3.3             | 76       |     | < 10      | < 400     |    | 1        | < 100   |    | 1     | 1N4728A     |
| 3.6             | 69       |     | < 10      | < 400     |    | 1        | < 100   |    | 1     | 1N4729A     |
| 3.9             | 64       |     | < 9       | < 400     |    | 1        | < 50    |    | 1     | 1N4730A     |
| 4.7             | 53       |     | < 8       | < 500     |    | 1        | < 10    |    | 1     | 1N4732A     |
| 5.1             | 49       |     | < 7       | < 550     |    | 1        | < 10    |    | 1     | 1N4733A     |
| 5.6             | 45       |     | < 5       | < 600     |    | 1        | < 10    |    | 2     | 1N4734A     |
| 6.2             | 41       |     | < 2       | < 700     |    | 1        | < 10    |    | 3     | 1N4735A     |
| 6.8             | 37       |     | < 3.5     | < 700     |    | 1        | < 10    |    | 4     | 1N4736A     |
| 7.5             | 34       |     | < 4       | < 700     |    | 0.5      | < 10    |    | 5     | 1N4737A     |
| 8.2             | 31       |     | < 4.5     | < 700     |    | 0.5      | < 10    |    | 6     | 1N4738A     |
| 9.1             | 28       |     | < 5       | < 700     |    | 0.5      | < 10    |    | 7     | 1N4739A     |
| 10              | 25       |     | < 7       | < 700     |    | 0.25     | < 10    |    | 7.6   | 1N4740A     |
| 11              | 23       |     | < 8       | < 700     |    | 0.25     | < 5     |    | 8.4   | 1N4741A     |
| 12              | 21       |     | < 9       | < 700     |    | 0.25     | < 5     |    | 9.1   | 1N4742A     |
| 13              | 19       |     | < 10      | < 700     |    | 0.25     | < 5     |    | 9.9   | 1N4743A     |
| 15              | 17       |     | < 14      | < 700     |    | 0.25     | < 5     |    | 11.4  | 1N4744A     |
| 16              | 15.5     |     | < 16      | < 700     |    | 0.25     | < 5     |    | 12.2  | 1N4745A     |
| 18              | 14       |     | < 20      | < 750     |    | 0.25     | < 5     |    | 13.7  | 1N4746A     |
| 20              | 12.5     |     | < 22      | < 750     |    | 0.25     | < 5     |    | 15.2  | 1N4747A     |
| 22              | 11.5     |     | < 23      | < 750     |    | 0.25     | < 5     |    | 16.7  | 1N4748A     |
| 24              | 10.5     |     | < 25      | < 750     |    | 0.25     | < 5     |    | 18.2  | 1N4749A     |
| 27              | 9.5      |     | < 35      | < 750     |    | 0.25     | < 5     |    | 20.6  | 1N4750A     |
| 30              | 8.5      |     | < 40      | < 1000    |    | 0.25     | < 5     |    | 22.8  | 1N4751A     |
| 33              | 7.5      |     | < 45      | < 1000    |    | 0.25     | < 5     |    | 25.1  | 1N4752A     |
| 36              | 7        |     | < 50      | < 1000    |    | 0.25     | < 5     |    | 27.4  | 1N4753A     |
| 39              | 6.5      |     | < 60      | < 1000    |    | 0.25     | < 5     |    | 29.7  | 1N4754A     |
| 43              | 6        |     | < 70      | < 1500    |    | 0.25     | < 5     |    | 32.7  | 1N4755A     |
| 47              | 5.5      |     | < 80      | < 1500    |    | 0.25     | < 5     |    | 35.8  | 1N4756A     |
| 51              | 5        |     | < 95      | < 1500    |    | 0.25     | < 5     |    | 38.8  | 1N4757A     |
| 56              | 4.5      |     | < 110     | < 2000    |    | 0.25     | < 5     |    | 42.6  | 1N4758A     |
| 62              | 4        |     | < 125     | < 2000    |    | 0.25     | < 5     |    | 47.1  | 1N4759A     |
| 68              | 3.7      |     | < 150     | < 2000    |    | 0.25     | < 5     |    | 51.7  | 1N4760A     |
| 75              | 3.3      |     | < 175     | < 2000    |    | 0.25     | < 5     |    | 56    | 1N4761A     |

<sup>1)</sup> Based on DC-measurement at thermal equilibrium while maintaining the lead temperature ( $T_L$ ) at 30°C, 9.5 mm (3/8") from the diode body.

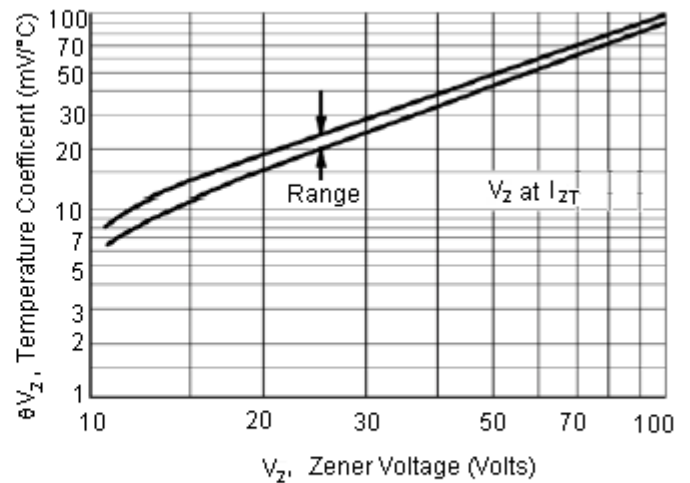
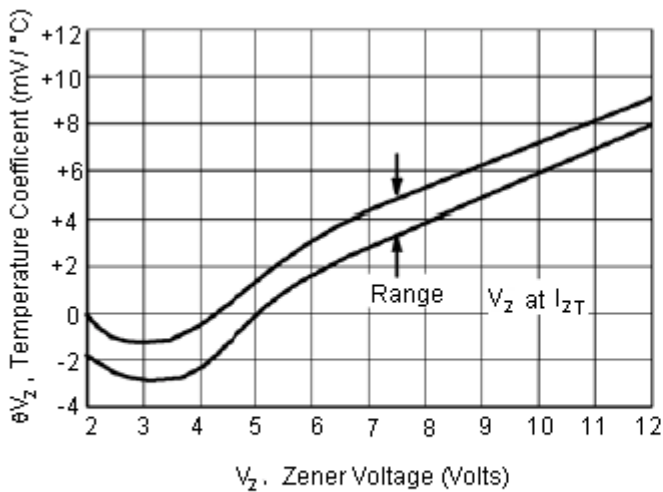
# Zener Diode

Characteristics ( $T_j = 25^\circ\text{C}$  unless otherwise specified)

| Symbol   | Parameter                           |
|----------|-------------------------------------|
| $V_Z$    | Reverse zener voltage at $I_{ZT}$   |
| $I_{ZT}$ | Reverse current                     |
| $Z_{ZT}$ | Maximum zener impedance at $I_{ZT}$ |
| $I_{ZK}$ | Reverse current                     |
| $Z_{ZK}$ | Maximum zener impedance at $I_{ZK}$ |
| $I_R$    | Reverse leakage current at $V_R$    |
| $V_R$    | Breakdown voltage                   |
| $I_F$    | Forward current                     |
| $V_F$    | Forward voltage at $I_F$            |



Zener Voltage Regulator

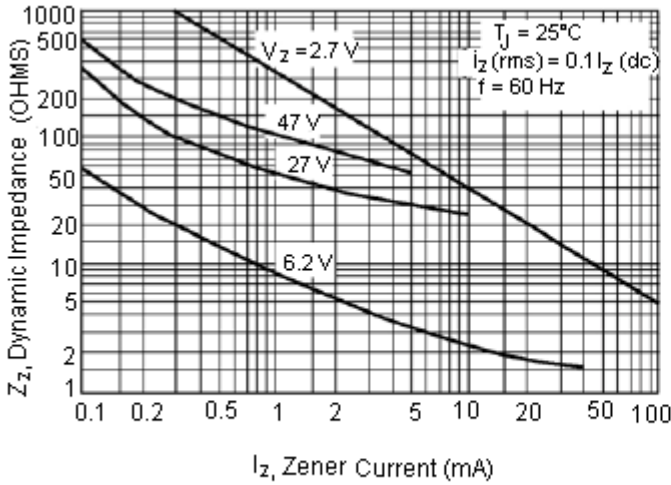


Temperature Coefficients

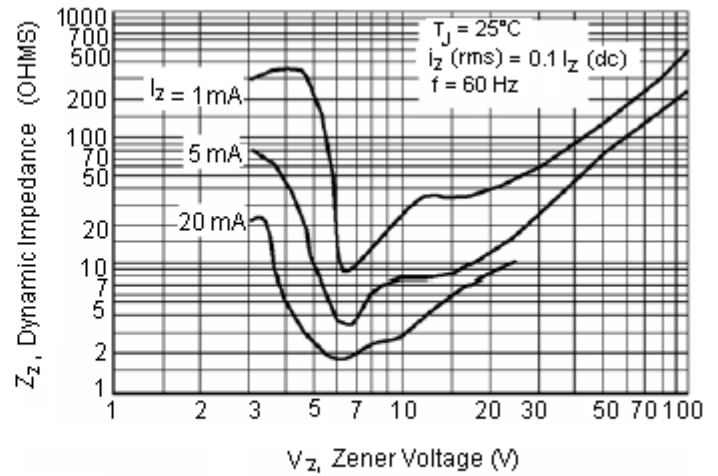
( $-55^\circ\text{C}$  to  $+150^\circ\text{C}$  temperature range; 90% of the units are in the ranges indicated)

# Zener Diode

## Characteristics ( $T_J = 25^\circ\text{C}$ unless otherwise specified)

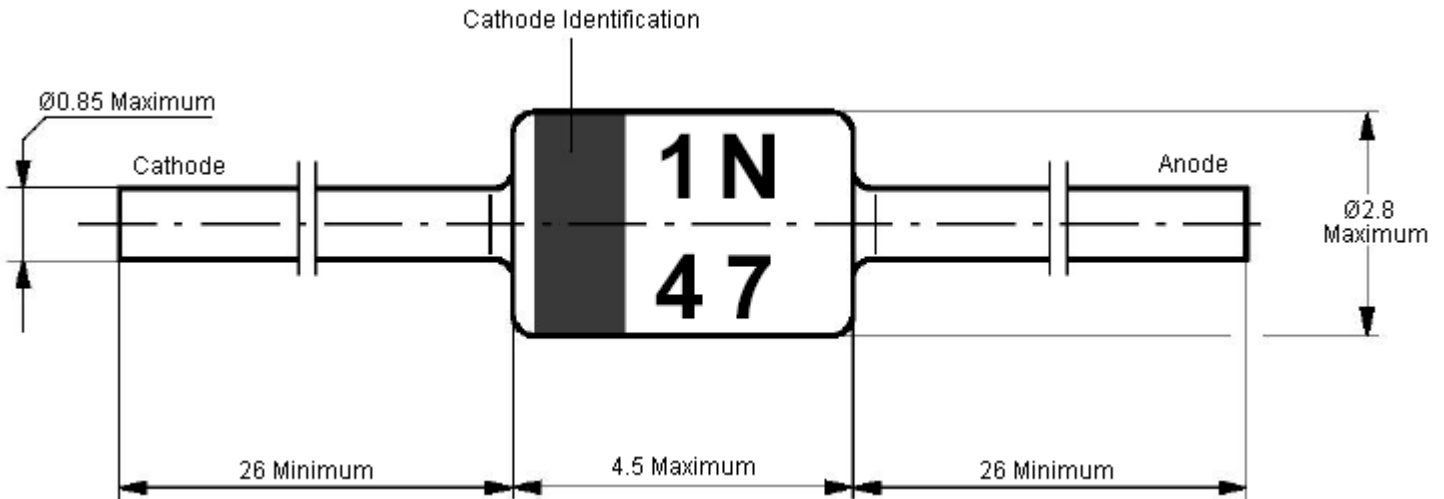


Effect of Zener Current on Zener Impedance



Effect of Zener Voltage on Zener Impedance

## Dimensions



Standard Glass case  
JEDEC DO-41

Dimensions: Millimetres

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