

500 mW DO-35 Hermetically Sealed Glass Zener Voltage Regulators

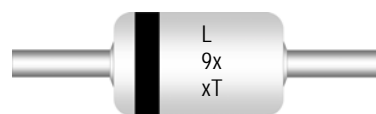


Absolute Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise noted

| Parameter | Value | Units |
|--------------------------------|-------------|------------------|
| Power Dissipation | 500 | mW |
| Storage Temperature Range | -65 to +200 | $^\circ\text{C}$ |
| Operating Junction Temperature | +200 | $^\circ\text{C}$ |

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

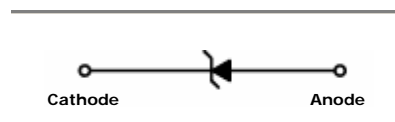
DEVICE MARKING DIAGRAM



L : Logo
 Device Code : TC1N9xxT
 Tolerance (T) : A = 10%
 B = 5%
 C = 2%
 D = 1%

Specification Features:

- Zener Voltage Range 6.8 to 56 Volts
- DO-35 Package (JEDEC)
- Through-Hole Device Type Mounting
- Hermetically Sealed Glass
- Compression Bonded Construction
- All External Surfaces Are Corrosion Resistant And Leads Are Readily Solderable
- RoHS Compliant
- Solder Hot Dip Tin (Sn) Lead Finish
- Cathode Indicated By Polarity Band



ELECTRICAL SYMBOL

Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

| Device Type | $V_Z @ I_{ZT}$ (Volts) Nominal | I_{ZT} (mA) | $Z_{ZT} @ I_{ZT}$ (Ω) Max | $Z_{ZK} @ I_{ZK} = 0.25\text{mA}$ (Ω) Max | $I_R @ V_R$ (μA) Max | V_R (Volts) |
|-------------|--------------------------------------|------------------|--|--|---|------------------|
| TC1N957B | 6.8 | 18.5 | 4.5 | 700 | 150 | 5.2 |
| TC1N958B | 7.5 | 16.5 | 5.5 | 700 | 75 | 5.7 |
| TC1N959B | 8.2 | 15 | 6.5 | 700 | 50 | 6.2 |
| TC1N960B | 9.1 | 14 | 7.5 | 700 | 25 | 6.9 |
| TC1N961B | 10 | 12.5 | 8.5 | 700 | 10 | 7.6 |
| TC1N962B | 11 | 11.5 | 9.5 | 700 | 5 | 8.4 |
| TC1N963B | 12 | 10.5 | 11.5 | 700 | 5 | 9.1 |
| TC1N964B | 13 | 9.5 | 13 | 700 | 5 | 9.9 |
| TC1N965B | 15 | 8.5 | 16 | 700 | 5 | 11.4 |
| TC1N966B | 16 | 7.8 | 17 | 700 | 5 | 12.2 |
| TC1N967B | 18 | 7 | 21 | 750 | 5 | 13.7 |
| TC1N968B | 20 | 6.2 | 25 | 750 | 5 | 15.2 |
| TC1N969B | 22 | 5.6 | 29 | 750 | 5 | 16.7 |
| TC1N970B | 24 | 5.2 | 33 | 750 | 5 | 18.2 |
| TC1N971B | 27 | 4.6 | 41 | 750 | 5 | 20.6 |
| TC1N972B | 30 | 4.2 | 49 | 1000 | 5 | 22.8 |
| TC1N973B | 33 | 3.8 | 58 | 1000 | 5 | 25.1 |
| TC1N974B | 36 | 3.4 | 70 | 1000 | 5 | 27.4 |
| TC1N975B | 39 | 3.2 | 80 | 1000 | 5 | 29.7 |
| TC1N976B | 43 | 3 | 93 | 1500 | 5 | 32.7 |

Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

| Device Type | $V_Z @ I_{ZT}$ (Volts) Nominal | I_{ZT} (mA) | $Z_{ZT} @ I_{ZT}$ (Ω) Max | $Z_{ZK} @ I_{ZK} = 0.25\text{mA}$ (Ω) Max | $I_R @ V_R$ (μA) Max | V_R (Volts) |
|-------------|--------------------------------------|------------------|--|--|---|------------------|
| TC1N977B | 47 | 2.7 | 105 | 1500 | 5 | 35.8 |
| TC1N978B | 51 | 2.5 | 125 | 1500 | 5 | 38.8 |
| TC1N979B | 56 | 2.2 | 150 | 2000 | 5 | 42.6 |

V_F Forward Voltage = 1.5 V Maximum @ $I_F = 200$ mA for all types

Notes:
1. TOLERANCE AND VOLTAGE DESIGNATION

The type numbers listed have zener voltage as shown and have a standard tolerance on the nominal zener voltage of $\pm 5\%$. Suffix A = $\pm 10\%$, Suffix C = $\pm 2\%$ and D = $\pm 1\%$.

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.

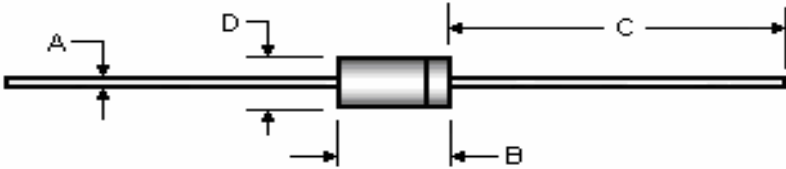
3. ZENER VOLTAGE (V_Z) MEASUREMENT

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

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}) is superimposed to I_{ZT} .

Package Outline

| Package | Case Outline | | | | |
|---------|--|-------------|-------|--------|-------|
| DO-35 |  | | | | |
| | DIM | DO-35 | | | |
| | | Millimeters | | Inches | |
| | | Min | Max | Min | Max |
| | A | 0.46 | 0.55 | 0.018 | 0.022 |
| | B | 3.05 | 5.08 | 0.120 | 0.200 |
| | C | 25.40 | 38.10 | 1.000 | 1.500 |
| | D | 1.53 | 2.28 | 0.060 | 0.090 |


Notes:

1. All dimensions are within JEDEC standard.
2. DO35 polarity denoted by cathode band.

This datasheet presents technical data of Tak Cheong's Zener Diodes. Complete specifications for the individual devices are provided in the form of datasheets. A comprehensive Selector Guide is included to simplify the task of choosing the best set of components required for a specific application. For additional information, please visit our website <http://www.takcheong.com>.

Although information in this datasheet has been carefully checked, no responsibility for the inaccuracies can be assumed by Tak Cheong. Please consult your nearest Tak Cheong's sales office for further assistance.

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