

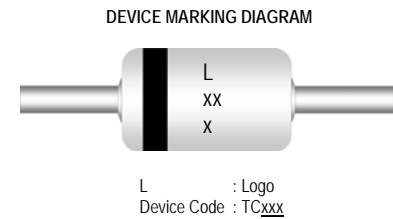
500 mW DO-35 Hermetically Sealed Glass Zener Voltage Regulators



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

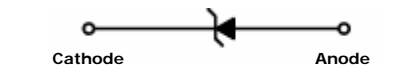
| Parameter | Value | Units |
|--------------------------------|-------------|------------------|
| Power Dissipation | 500 | mW |
| Storage Temperature Range | -65 to +175 | $^\circ\text{C}$ |
| Operating Junction Temperature | +175 | $^\circ\text{C}$ |

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



Specification Features:

- Zener Voltage Range 2.0 to 75 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) Terminal 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 | $I_R @ V_R$ (μA) Max | V_R (Volts) |
|-------------|--------------------------------------|------------------|--|---|------------------|
| TC2V0 | 2.0 | 5 | 100 | 120 | 0.5 |
| TC2V2 | 2.2 | 5 | 100 | 120 | 0.7 |
| TC2V4 | 2.4 | 5 | 100 | 120 | 1 |
| TC2V7 | 2.7 | 5 | 110 | 100 | 1 |
| TC3V0 | 3.0 | 5 | 120 | 50 | 1 |
| TC3V3 | 3.3 | 5 | 120 | 20 | 1 |
| TC3V6 | 3.6 | 5 | 100 | 10 | 1 |
| TC3V9 | 3.9 | 5 | 100 | 5 | 1 |
| TC4V3 | 4.3 | 5 | 100 | 5 | 1 |
| TC4V7 | 4.7 | 5 | 80 | 5 | 1 |
| TC5V1 | 5.1 | 5 | 80 | 5 | 1.5 |
| TC5V6 | 5.6 | 5 | 60 | 5 | 2.5 |
| TC6V2 | 6.2 | 5 | 60 | 5 | 3 |
| TC6V8 | 6.8 | 5 | 20 | 2 | 3.5 |
| TC7V5 | 7.5 | 5 | 20 | 0.5 | 4 |
| TC8V2 | 8.2 | 5 | 20 | 0.5 | 5 |
| TC9V1 | 9.1 | 5 | 25 | 0.5 | 6 |
| TC10V | 10 | 5 | 30 | 0.2 | 7 |
| TC11V | 11 | 5 | 30 | 0.2 | 8 |
| TC12V | 12 | 5 | 30 | 0.2 | 9 |

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 | $I_R @ V_R$ (μA) Max | V_R (Volts) |
|-------------|--------------------------------------|------------------|--|---|------------------|
| TC13V | 13 | 5 | 35 | 0.2 | 10 |
| TC15V | 15 | 5 | 40 | 0.2 | 11 |
| TC16V | 16 | 5 | 40 | 0.2 | 12 |
| TC18V | 18 | 5 | 45 | 0.2 | 13 |
| TC20V | 20 | 5 | 45 | 0.2 | 15 |
| TC22V | 22 | 5 | 30 | 0.2 | 17 |
| TC24V | 24 | 5 | 35 | 0.2 | 19 |
| TC27V | 27 | 2 | 45 | 0.2 | 21 |
| TC30V | 30 | 2 | 55 | 0.2 | 23 |
| TC33V | 33 | 2 | 65 | 0.2 | 25 |
| TC36V | 36 | 2 | 75 | 0.2 | 27 |
| TC39V | 39 | 2 | 85 | 0.2 | 30 |
| TC43V | 43 | 2 | 90 | 0.2 | 33 |
| TC47V | 47 | 2 | 90 | 0.2 | 36 |
| TC51V | 51 | 2 | 110 | 0.2 | 39 |
| TC56V | 56 | 2 | 110 | 0.2 | 43 |
| TC62V | 62 | 2 | 201 | 0.2 | 47 |
| TC68V | 68 | 2 | 230 | 0.2 | 51 |
| TC75V | 75 | 2 | 240 | 0.2 | 56 |

V_F Forward Voltage = 1.2 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 $\pm 5\%$.

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 is measured under pulse conditions such that T_j is no more than 2°C above T_A .

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} .

Typical Characteristics

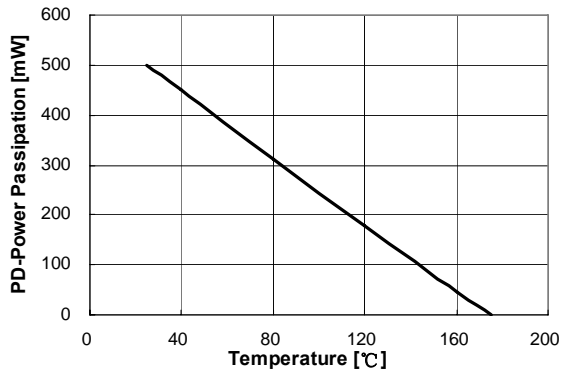


Figure 1. Power Dissipation vs Ambient Temperature
Valid provided leads at a distance of 0.8mm from case are kept at ambient temperature

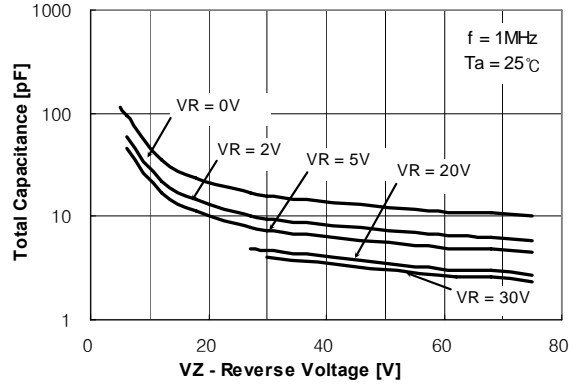


Figure 2. Total Capacitance

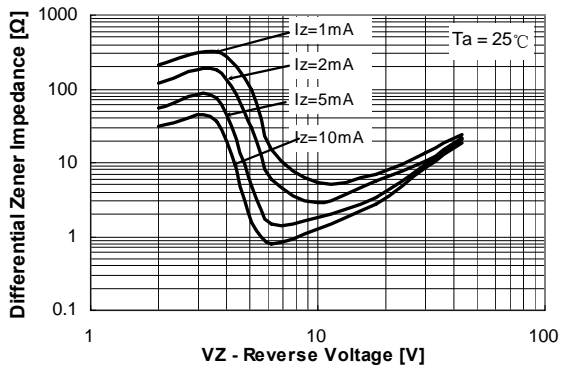


Figure 3. Differential Impedance vs. Zener Voltage

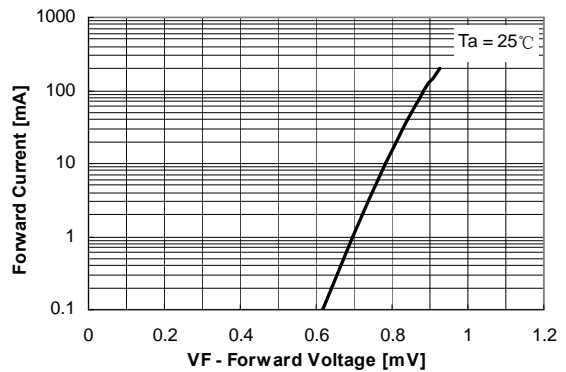


Figure 4. Forward Current vs. Forward Voltage

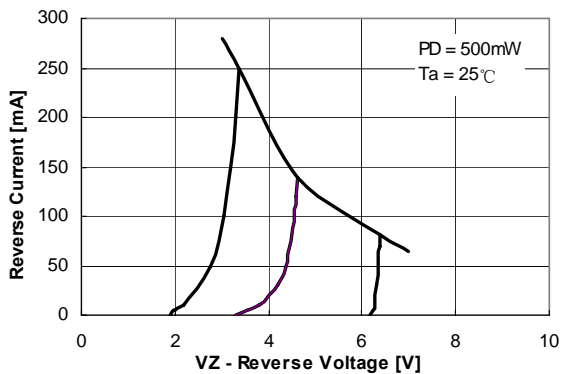


Figure 5. Reverse Current vs. Reverse Voltage

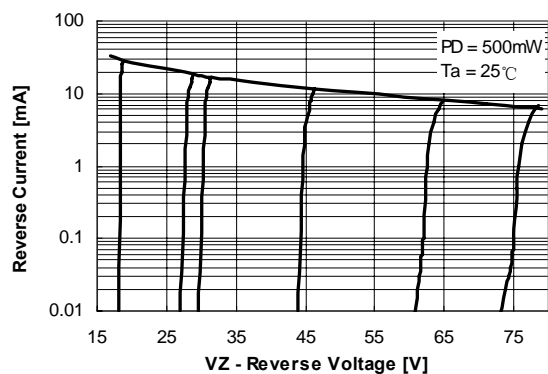
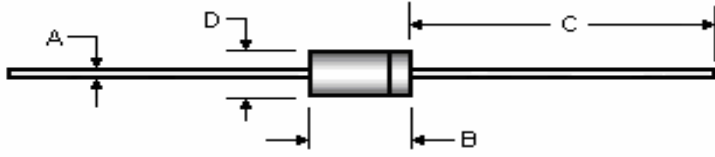


Figure 6. Reverse Current vs. Reverse Voltage

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.

NOTICE

The information presented in this document is for reference only. Tak Cheong reserves the right to make changes without notice for the specification of the products displayed herein.

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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