

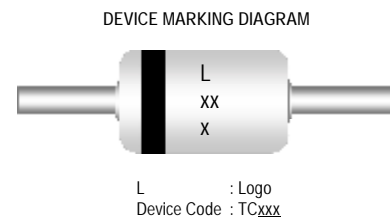
## 500 mW DO-35 Hermetically Sealed Glass Zener Voltage Regulators



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

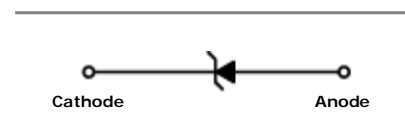
Parameter	Value	Units
Power Dissipation	500	mW
Storage Temperature Range	-65 to +175	$^\circ\text{C}$
Operating Junction Temperature	+175	$^\circ\text{C}$

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)	$Z_{ZT} @ I_{ZT}$ ( $\Omega$ ) Max	$I_R @ V_R$ ( $\mu\text{A}$ ) 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)	$Z_{ZT} @ I_{ZT}$ ( $\Omega$ ) Max	$I_R @ V_R$ ( $\mu\text{A}$ ) 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.

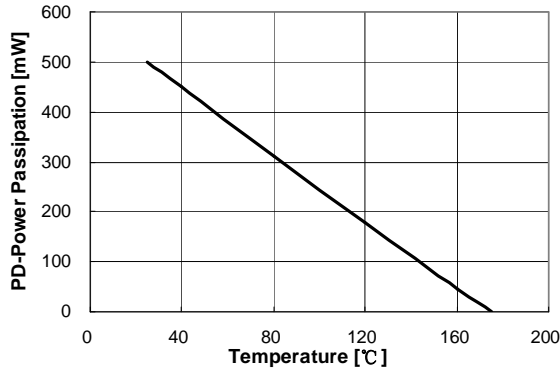
**3. ZENER VOLTAGE ( $V_Z$ ) MEASUREMENT**

The zener voltage is measured under pulse conditions such that  $T_J$  is no more than  $2^\circ\text{C}$  above  $T_A$ .

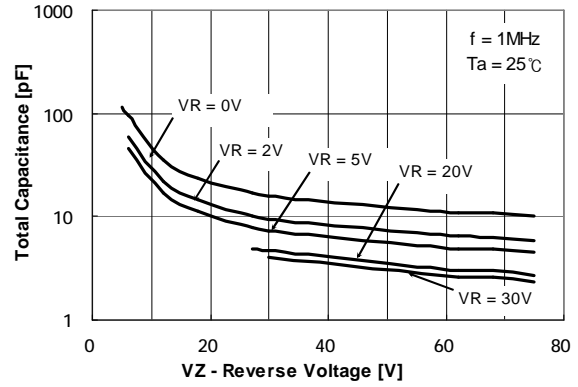
**4. ZENER IMPEDANCE ( $Z_Z$ ) DERIVATION**

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  $I_{ZT}$ .

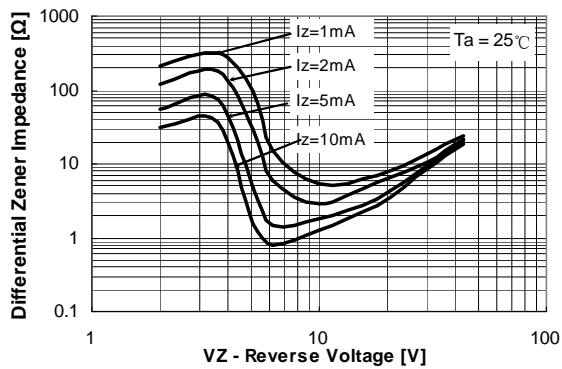
Typical Characteristics



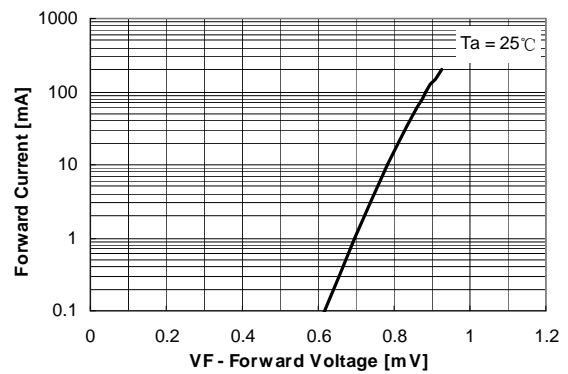
**Figure 1. Power Dissipation vs Ambient Temperature**  
Valid provided leads at a distance of 0.8mm from case are kept at ambient temperature



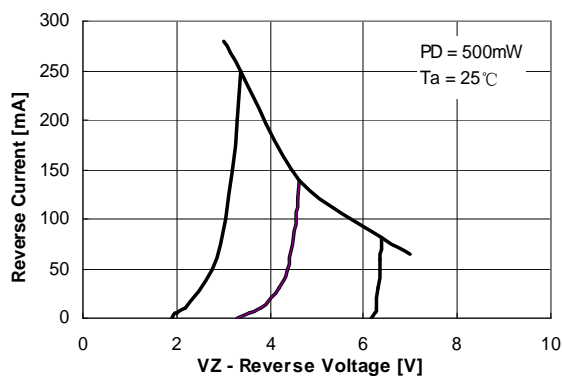
**Figure 2. Total Capacitance**



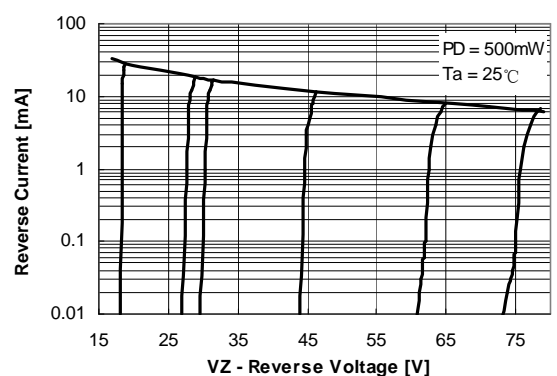
**Figure 3. Differential Impedance vs. Zener Voltage**



**Figure 4. Forward Current vs. Forward Voltage**

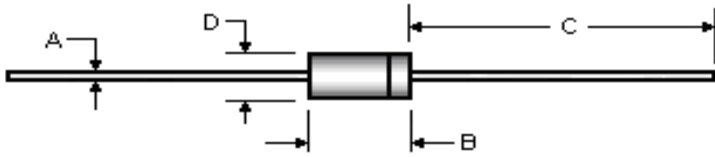


**Figure 5. Reverse Current vs. Reverse Voltage**



**Figure 6. Reverse Current vs. Reverse Voltage**

**Package Outline**

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

**Notes:**

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

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