

## 500 mW DO-34 Hermetically Sealed Glass Zener Voltage Regulators



DEVICE MARKING DIAGRAM



L : Logo  
Device Code : TCMZxxx

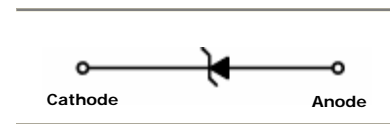
### Absolute Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise noted

Parameter	Value	Units
Power Dissipation	500	mW
Storage Temperature Range	-65 to +175	$^\circ\text{C}$
Operating Junction Temperature	+175	$^\circ\text{C}$
Lead Temperature (1/16" from case for 10 seconds)	+230	$^\circ\text{C}$

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-34 Package (JEDEC DO-204)
- Through-Hole Device Type Mounting
- Hermetically Sealed Glass
- Compression Bonded Construction
- All External Surfaces Are Corrosion Resistant And Leds 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)
TCMZ2V0	2.0	5	100	120	0.5
TCMZ2V2	2.2	5	100	120	0.7
TCMZ2V4	2.4	5	100	120	1
TCMZ2V7	2.7	5	110	100	1
TCMZ3V0	3.0	5	120	50	1
TCMZ3V3	3.3	5	120	20	1
TCMZ3V6	3.6	5	100	10	1
TCMZ3V9	3.9	5	100	5	1
TCMZ4V3	4.3	5	100	5	1
TCMZ4V7	4.7	5	80	5	1
TCMZ5V1	5.1	5	80	5	1.5
TCMZ5V6	5.6	5	60	5	2.5
TCMZ6V2	6.2	5	60	5	3
TCMZ6V8	6.8	5	20	2	3.5
TCMZ7V5	7.5	5	20	0.5	4
TCMZ8V2	8.2	5	20	0.5	5
TCMZ9V1	9.1	5	25	0.5	6
TCMZ10V	10	5	30	0.2	7
TCMZ11V	11	5	30	0.2	8
TCMZ12V	12	5	30	0.2	9
TCMZ13V	13	5	35	0.2	10
TCMZ15V	15	5	40	0.2	11

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

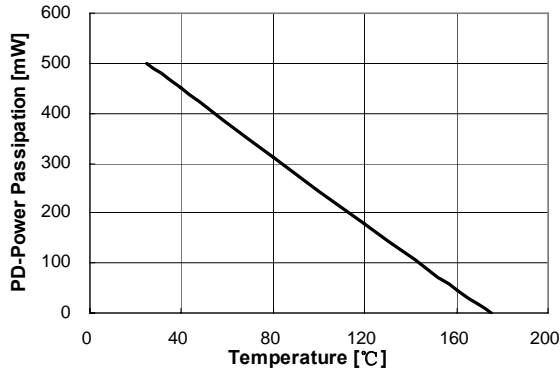
Device Type	$V_Z @ I_{ZT}$ (Volts) Nominal	$I_{ZT}$ (mA)	$Z_{ZT} @ I_{ZT}$ ( $\Omega$ ) Max	$I_R @ V_R$ ( $\mu\text{A}$ ) Max	$V_R$ (Volts)
TCMZ16V	16	5	40	0.2	12
TCMZ18V	18	5	45	0.2	13
TCMZ20V	20	5	45	0.2	15
TCMZ22V	22	5	30	0.2	17
TCMZ24V	24	5	35	0.2	19
TCMZ27V	27	2	45	0.2	21
TCMZ30V	30	2	55	0.2	23
TCMZ33V	33	2	65	0.2	25
TCMZ36V	36	2	75	0.2	27
TCMZ39V	39	2	85	0.2	30
TCMZ43V	43	2	90	0.2	33
TCMZ47V	47	2	90	0.2	36
TCMZ51V	51	2	110	0.2	39
TCMZ56V	56	2	110	0.2	43
TCMZ62V	62	2	201	0.2	47
TCMZ68V	68	2	230	0.2	51
TCMZ75V	75	2	240	0.2	56

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

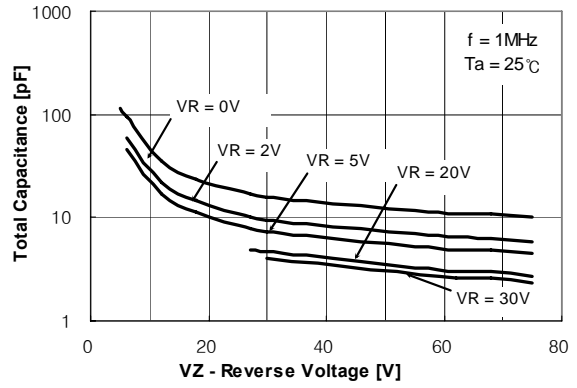
**Notes:**

1. The type numbers listed have zener voltage min/max limits as shown and have a standard tolerance on the nominal zener voltage of 5%.
2. For detailed information on price, availability and delivery of nominal zener voltages between the voltages shown and tighter voltage tolerances, contact your nearest Tak Cheong Electronics representative.
3. 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  $I_{ZK}$ .

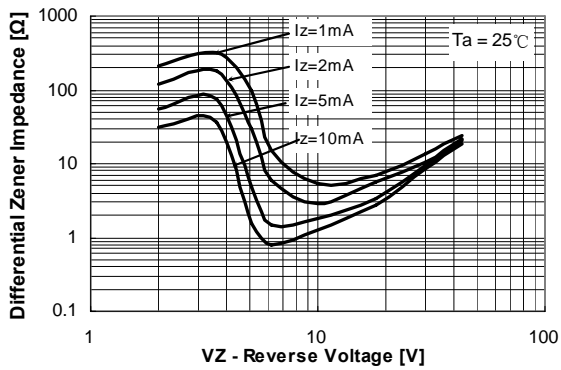
Typical Characteristics



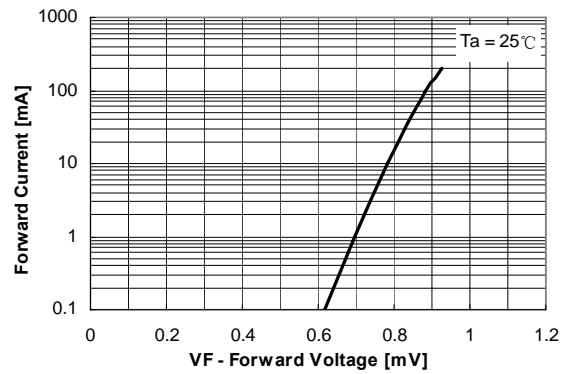
**Figure 1. Power Dissipation vs Ambient Temperature**  
Valid provided leads at a distance of 0.8mm from case are kept at ambient temperature



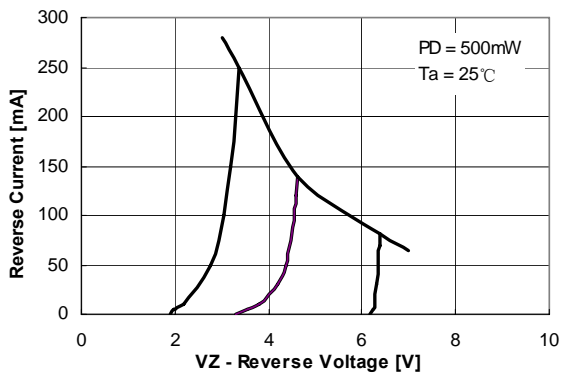
**Figure 2. Total Capacitance**



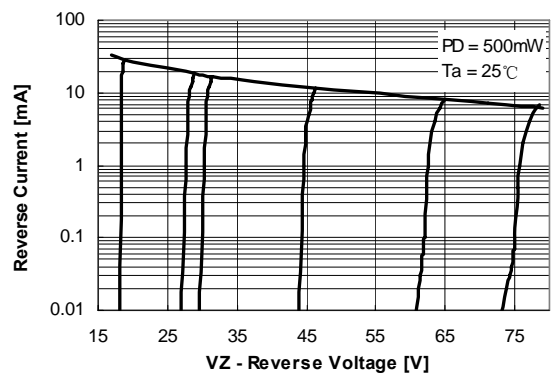
**Figure 3. Differential Impedance vs. Zener Voltage**



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

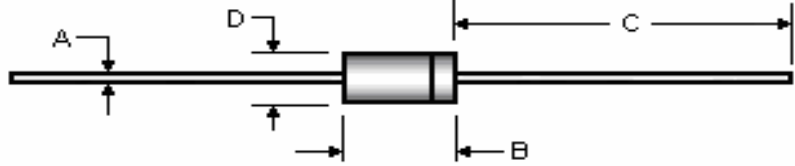


**Figure 5. Reverse Current vs. Reverse Voltage**



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

**Package Outline**

Package	Case Outline				
DO-34					
	<b>DO-34</b>				
	<b>DIM</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>	2.16	3.04	0.085	0.120
<b>C</b>	25.40	38.10	1.000	1.500	
<b>D</b>	1.27	1.90	0.050	0.075	

**Notes:**

1. All dimensions are within JEDEC standard.
2. DO34 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.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website <http://www.takcheong.com>, or consult your nearest Tak Cheong's sales office for further assistance.