

500 mW DO-35 Hermetically Sealed Glass Zener Voltage Regulators

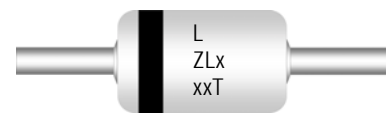
AXIAL LEAD
DO35

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.

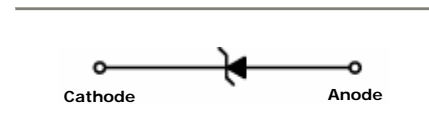
DEVICE MARKING DIAGRAM



L : Logo
 Device Code : TCZLxxT
 VZ Tolerance (T) : B = $\pm 2\%$
 C = $\pm 5\%$

Specification Features:

- Zener Voltage Range 2.4 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)			I_{ZT} (mA)	$Z_{ZT} @ I_{ZT}$ (Ω) Max	I_{ZK} (mA)	$Z_{ZK} @ I_{ZK}$ (Ω) Max	$I_R @ V_R$ (μA) Max	V_R (Volts)
	Min	Nom	Max						
TCZL2V4B	2.35	2.4	2.45	5	94	1	564	45	1
TCZL2V7B	2.65	2.7	2.75	5	94	1	564	18	1
TCZL3V0B	2.94	3.0	3.06	5	89	1	564	9	1
TCZL3V3B	3.23	3.3	3.37	5	89	1	564	4.5	1
TCZL3V6B	3.53	3.6	3.67	5	84	1	564	4.5	1
TCZL3V9B	3.82	3.9	3.98	5	84	1	564	2.7	1
TCZL4V3B	4.21	4.3	4.39	5	84	1	564	2.7	1
TCZL4V7B	4.61	4.7	4.79	5	75	1	470	2.7	2
TCZL5V1B	5.00	5.1	5.20	5	56	1	451	1.8	2
TCZL5V6B	5.49	5.6	5.71	5	37	1	376	0.9	2
TCZL6V2B	6.08	6.2	6.32	5	9	1	141	2.7	4
TCZL6V8B	6.66	6.8	6.94	5	14	1	75	1.8	4
TCZL7V5B	7.33	7.5	7.63	5	14	1	75	0.9	5
TCZL8V2B	8.04	8.2	8.36	5	14	1	75	0.63	5
TCZL9V1B	8.92	9.1	9.28	5	14	1	94	0.45	6
TCZL10B	9.80	10	10.20	5	18	1	141	0.18	7
TCZL11B	10.78	11	11.22	5	18	1	141	0.09	8
TCZL12B	11.76	12	12.24	5	23	1	141	0.09	8
TCZL13B	12.74	13	13.26	5	28	1	160	0.09	8
TCZL15B	14.70	15	15.30	5	28	1	188	0.045	10.5
TCZL16B	15.68	16	16.32	5	37	1	188	0.045	11.2

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

Device Type	$V_Z @ I_{ZT}$ (Volts)			I_{ZT} (mA)	$Z_{ZT} @ I_{ZT}$ (Ω) Max	I_{ZK} (mA)	$Z_{ZK} @ I_{ZK}$ (Ω) Max	$I_R @ V_R$ (μA) Max	V_R (Volts)
	Min	Nom	Max						
TCZL18B	17.64	18	18.36	5	42	1	212	0.045	12.6
TCZL20B	19.60	20	20.40	5	51	1	212	0.045	14.0
TCZL22B	21.56	22	22.44	5	51	1	235	0.045	15.4
TCZL24B	23.52	24	24.48	5	65	1	235	0.045	16.8
TCZL27B	26.46	27	27.54	5	75	0.5	282	0.045	18.9
TCZL30B	29.40	30	30.60	5	75	0.5	282	0.045	21.0
TCZL33B	32.34	33	33.66	5	75	0.5	306	0.045	23.0
TCZL36B	35.28	36	36.72	5	84	0.5	329	0.045	25.2
TCZL39B	38.22	39	39.78	5	122	0.5	329	0.045	27.3
TCZL43B	42.14	43	43.86	5	141	0.5	353	0.045	30.1
TCZL47B	46.06	47	47.94	5	160	0.5	353	0.045	33.0
TCZL51B	49.98	51	52.02	5	169	0.5	376	0.045	35.7
TCZL56B	54.88	56	57.12	5	188	0.5	400	0.045	39.2
TCZL62B	60.76	62	63.24	5	202	0.5	423	0.045	43.4
TCZL68B	66.64	68	69.36	5	226	0.5	447	0.045	47.6
TCZL75B	73.50	75	76.50	5	240	0.5	470	0.045	52.5

V_F Forward Voltage = 1 V Maximum @ $I_F = 100$ 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 $\pm 2\%$. Device tolerance of $\pm 5\%$ is indicated by a "C" instead of a "B".

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

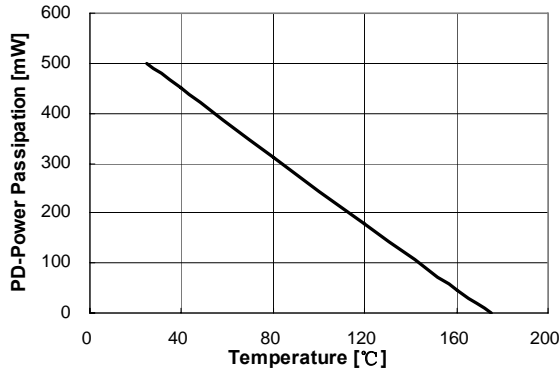


Figure 1. Power Dissipation vs Ambient Temperature
Valid provided leads at a distance of 0.8mm from case are kept at ambient temperature

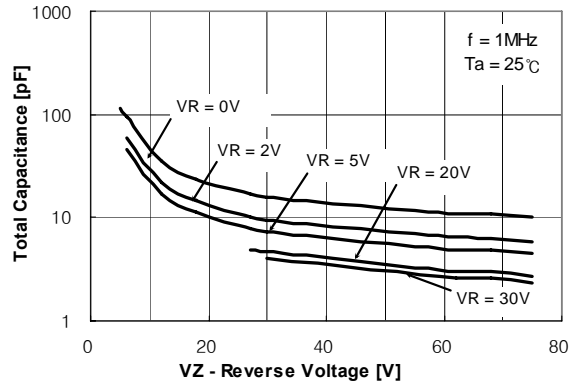


Figure 2. Total Capacitance

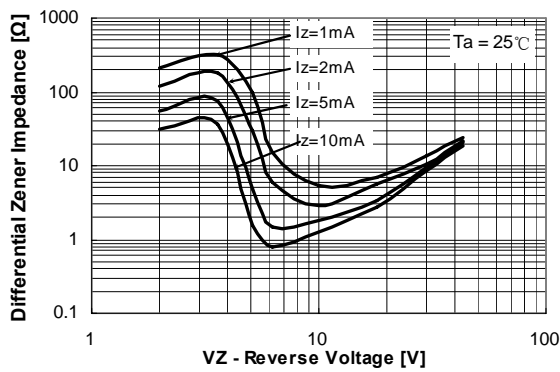


Figure 3. Differential Impedance vs. Zener Voltage

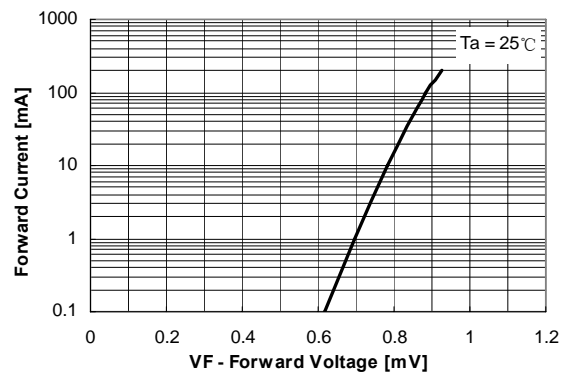


Figure 4. Forward Current vs. Forward Voltage

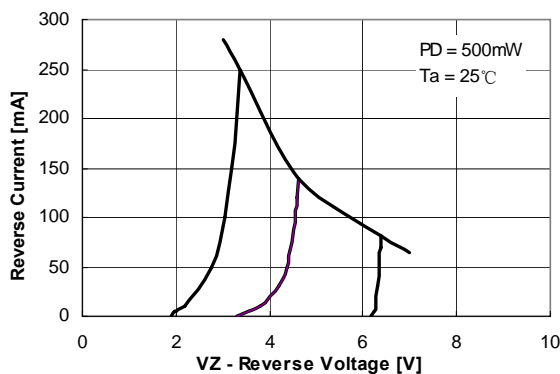


Figure 5. Reverse Current vs. Reverse Voltage

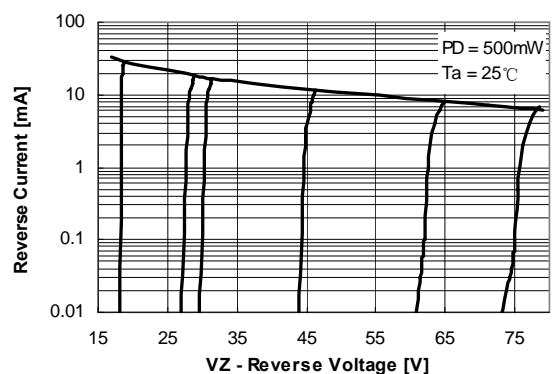
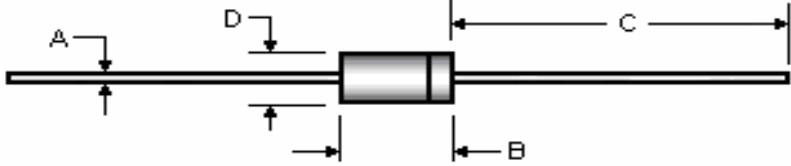


Figure 6. Reverse Current vs. Reverse Voltage

Package Outline

Package	Case Outline				
DO-35					
	DO-35				
	DIM	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

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