TAK CHEONG®

SEMICONDUCTOR

500 mW DO-35 Hermetically Sealed Glass Zener Voltage Regulators

AXIAL LEAD
DO35

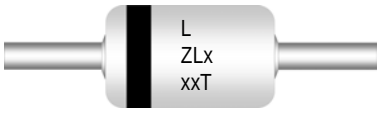
Absolute Maximum Ratings

T_A = 25°C unless otherwise noted

Parameter	Value	Units
Power Dissipation	500	mW
Storage Temperature Range	-65 to +175	°C
Operating Junction Temperature	+175	°C

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

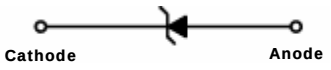
DEVICE MARKING DIAGRAM



L : Logo
Device Code : TCZLxxxT
VZ Tolerance (T) : B = ±2%
C = ±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°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

Number: DB-044
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Electrical Characteristics

T_A = 25°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 ±2%. Device tolerance of ±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℃ 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

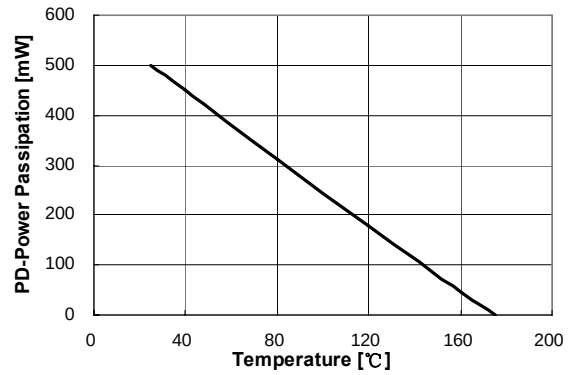


Figure 1. Power Dissipation vs Ambient Temperature
Valid provided leads at a distance of 0.8mm from case are kept at ambient temperature

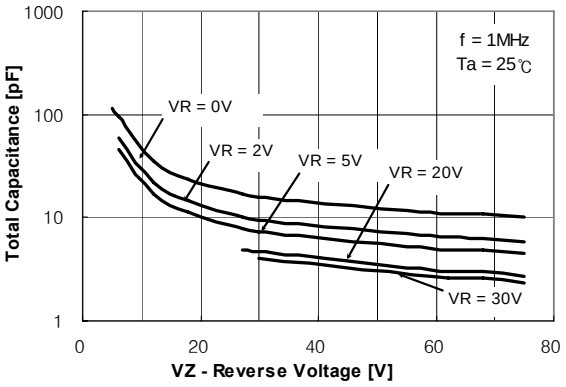


Figure 2. Total Capacitance

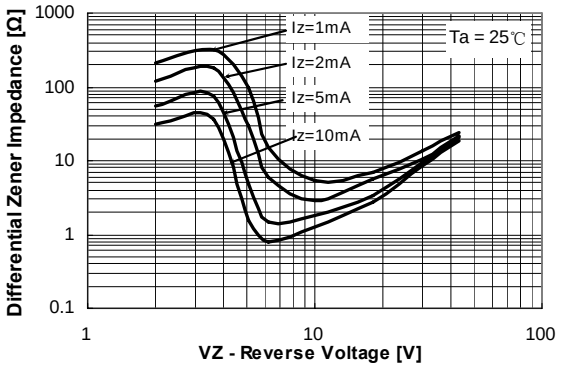


Figure 3. Differential Impedance vs. Zener Voltage

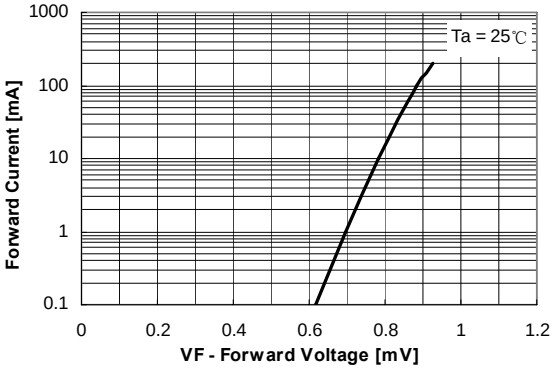


Figure 4. Forward Current vs. Forward Voltage

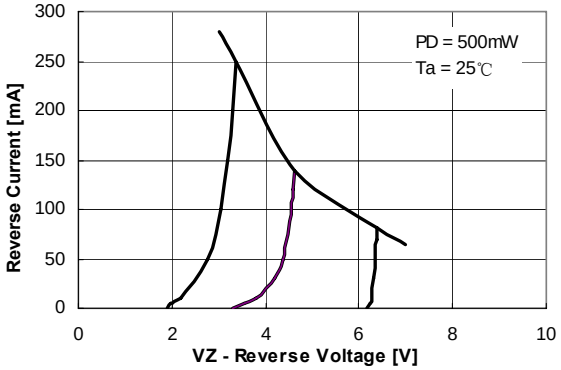


Figure 5. Reverse Current vs. Reverse Voltage

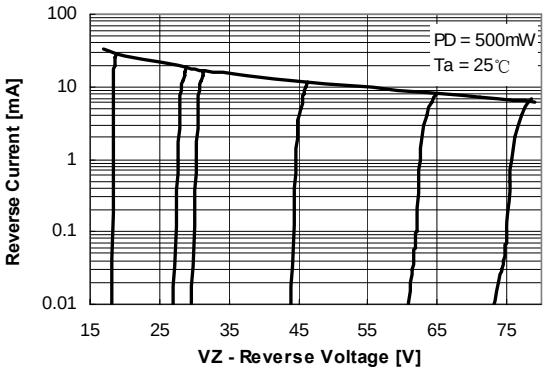
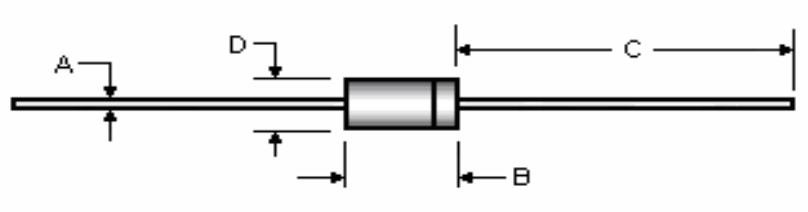


Figure 6. Reverse Current vs. Reverse Voltage

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 with 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 damagers resulting from such improper use of sale.

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