

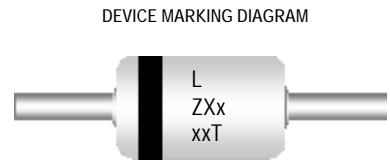
500 mW DO-35 Hermetically Sealed Glass Zener Voltage Regulators



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.



L : Logo
 Device Code : TCZXxxT
 VZ Tolerance (T) : A, B, C or D

Specification Features:

- § Zener Voltage Range 2.0 to 39 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	VZ Tolerance	VZ@IZT			Izt (mA)	Zzt@Izt (Ohms) Max	Zzk@Izk (Ohms) Max	Izk (mA)	I _R @V _R (uA) Max	V _R (V)
		Min	Nom	Max						
TCZX2V0	A	1.880	1.990	2.100	5	100	1000	0.5	120	0.5
	B	2.020	2.110	2.200						
TCZX2V2	A	2.120	2.210	2.300	5	100	1000	0.5	100	0.7
	B	2.220	2.315	2.410						
TCZX2V4	A	2.330	2.425	2.520	5	100	1000	0.5	120	1.0
	B	2.430	2.530	2.630						
TCZX2V7	A	2.540	2.645	2.750	5	110	1000	0.5	100	1.0
	B	2.690	2.800	2.910						
TCZX3V0	A	2.850	2.960	3.070	5	120	1000	0.5	50	1.0
	B	3.010	3.115	3.220						
TCZX3V3	A	3.160	3.270	3.380	5	120	1000	0.5	20	1.0
	B	3.320	3.425	3.530						
TCZX3V6	A	3.455	3.575	3.695	5	100	1000	1	10	1.0
	B	3.600	3.723	3.845						
TCZX3V9	A	3.740	3.875	4.010	5	100	1000	1	5	1.0
	B	3.890	4.025	4.160						
TCZX4V3	A	4.040	4.165	4.290	5	100	1000	1	5	1.0
	B	4.170	4.300	4.430						
	C	4.300	4.435	4.570						
TCZX4V7	A	4.44	4.56	4.68	5	80	900	1	5	1.0
	B	4.55	4.68	4.80						
	C	4.68	4.81	4.93						
TCZX5V1	A	4.81	4.94	5.07	5	80	800	1	5	1.5
	B	4.94	5.07	5.20						
	C	5.09	5.23	5.37						

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

Device Type	T Tolerance	$V_Z@I_{ZT}$			I_{ZT} (mA)	$Z_{ZT}@I_{ZT}$ (Ohms) Max	$Z_{ZK}@I_{ZK}$ (Ohms) Max	I_{ZK} (mA)	$I_R@V_R$ (uA) Max	V_R (V)
		Min	Nom	Max						
TCZX5V6	A	5.28	5.41	5.55	5	60	500	1	5	2.5
	B	5.45	5.59	5.73						
	C	5.61	5.76	5.91						
TCZX6V2	A	5.78	5.94	6.09	5	60	300	1	5	3.0
	B	5.96	6.12	6.27						
	C	6.12	6.28	6.44						
TCZX6V8	A	6.29	6.46	6.63	5	20	150	0.5	2	3.5
	B	6.49	6.66	6.83						
	C	6.66	6.84	7.01						
TCZX7V5	A	6.85	7.04	7.22	5	20	120	0.5	0.5	4.0
	B	7.07	7.26	7.45						
	C	7.29	7.48	7.67						
TCZX8V2	A	7.53	7.73	7.92	5	20	120	0.5	0.5	5.0
	B	7.78	7.99	8.19						
	C	8.03	8.24	8.45						
TCZX9V1	A	8.29	8.51	8.73	5	25	120	0.5	0.5	6.0
	B	8.57	8.79	9.01						
	C	8.83	9.07	9.30						
TCZX10V	A	9.12	9.36	9.59	5	30	120	0.5	0.2	7.0
	B	9.41	9.66	9.90						
	C	9.70	9.95	10.20						
	D	9.94	10.19	10.44						
TCZX11V	A	10.18	10.45	10.71	5	30	120	0.5	0.2	8.0
	B	10.50	10.78	11.05						
	C	10.82	11.10	11.38						
TCZX12V	A	11.13	11.42	11.71	5	30	110	0.5	0.2	9.0
	B	11.44	11.74	12.03						
	C	11.74	12.05	12.35						
TCZX13V	A	12.11	12.43	12.75	5	35	110	0.5	0.2	10
	B	12.55	12.88	13.21						
	C	12.99	13.33	13.66						
TCZX15V	A	13.44	13.79	14.13	5	40	110	0.5	0.2	11
	B	13.89	14.26	14.62						
	C	14.35	14.72	15.09						
TCZX16V	A	14.80	15.19	15.57	5	40	150	0.5	0.2	12
	B	15.25	15.65	16.04						
	C	15.69	16.10	16.51						
TCZX18V	A	16.22	16.64	17.06	5	45	150	0.5	0.2	13
	B	16.82	17.26	17.70						
	C	17.42	17.88	18.33						
TCZX20V	A	18.02	18.49	18.96	5	55	200	0.5	0.2	15
	B	18.63	19.11	19.59						
	C	19.23	19.73	20.22						
	D	19.72	20.22	20.72						
TCZX22V	A	20.15	21.68	21.20	5	30	200	0.5	0.2	17
	B	20.64	21.18	21.71						
	C	21.08	21.63	22.17						
	D	21.52	22.08	22.63						
TCZX24V	A	22.05	22.62	23.18	5	35	200	0.5	0.2	19
	B	22.61	23.19	23.77						
	C	23.12	23.72	24.31						
	D	23.63	24.24	24.85						
TCZX27V	A	24.26	24.89	25.52	5	45	250	0.5	0.2	21
	B	24.97	25.62	26.26						
	C	25.63	26.29	26.95						
	D	26.29	26.97	27.64						
TCZX30V	A	26.99	27.69	28.39	5	55	250	0.5	0.2	23
	B	27.70	28.42	29.13						
	C	28.36	29.09	29.82						
	D	29.02	29.77	30.51						

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

Device Type	T Tolerance	$V_Z@I_{ZT}$			I_{ZT} (mA)	$Z_{zt}@I_{ZT}$ (Ohms) Max	$Z_{zk}@I_{zk}$ (Ohms) Max	I_{zk} (mA)	$I_{R@V_R}$ (μA) Max	V_R (V)
		Min	Nom	Max						
TCZX33V	A	29.68	30.45	31.22	5	65	250	0.5	0.2	25
	B	30.32	31.10	31.88						
	C	30.90	31.70	32.50						
	D	31.49	32.30	33.11						
TCZX36V	A	32.14	32.97	33.79	5	75	250	0.5	0.2	27
	B	32.79	33.64	34.49						
	C	33.40	34.27	35.13						
	D	34.01	34.89	35.77						
TCZX39V	A	34.68	35.58	36.47	5	85	250	0.5	0.2	30
	B	35.36	36.28	37.19						
	C	36.00	36.93	37.85						
	D	36.63	37.58	38.52						

V_F (forward voltage) = 1.2 V maximum @ $I_F = 200\text{mA}$ for all types

Notes:

1. TOLERANCE AND VOLTAGE DESIGNATION

The type numbers listed have zener voltage as shown

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} .

5. WHEN ORDERING, PLEASE SPECIFY TOLERANCE A, B, C OR D

Typical Characteristics

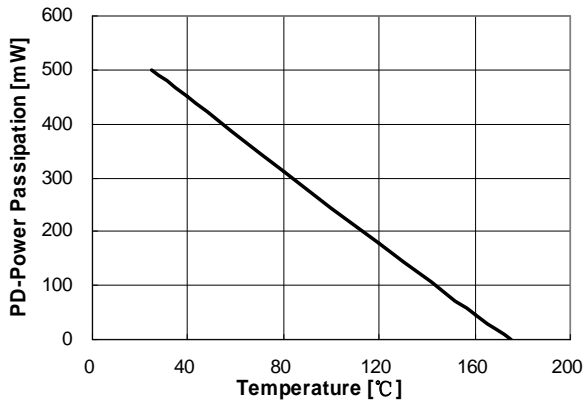


Figure 1. Power Dissipation vs Ambient Temperature
Valid provided leads at a distance of 0.8mm from case are kept at ambient temperature

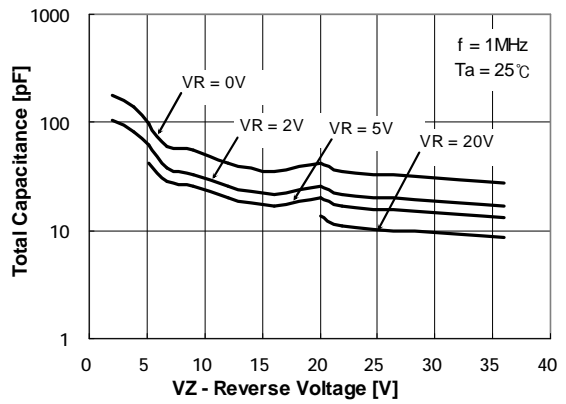


Figure 2. Total Capacitance

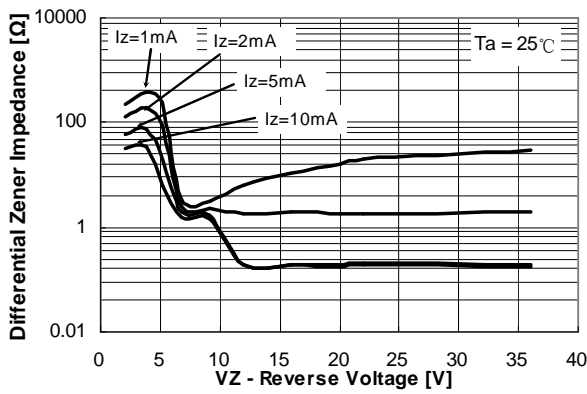


Figure 3. Differential Impedance vs. Zener Voltage

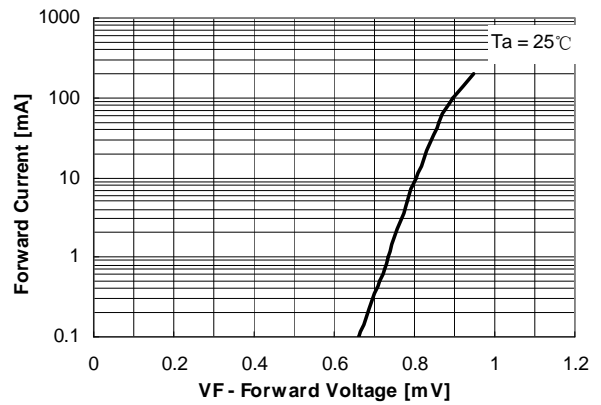


Figure 4. Forward Current vs. Forward Voltage

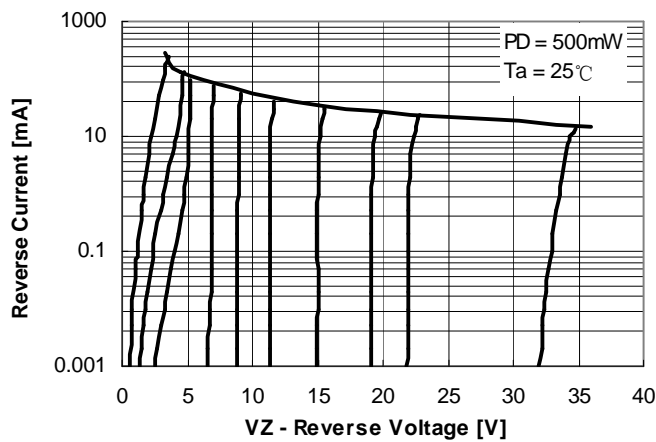
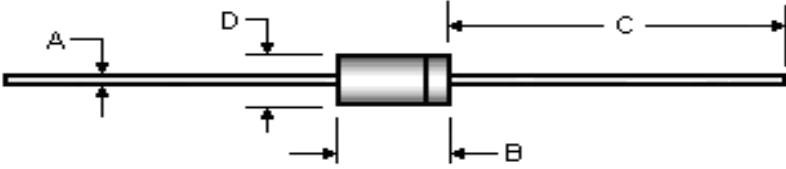


Figure 5. Reverse Current vs. Reverse Voltage

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	---	5.08	---	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.