TAK CHEONG®

SEMICONDUCTOR

500 mW DO-34 Hermetically
Sealed Glass Zener Voltage Regulators

AXIAL LEAD
DO34

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
Lead Temperature (1/16" from case for 10 seconds)	230	°C

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

DEVICE MARKING DIAGRAM

L =Tak Cheong Logo
xxx =Device Code TCMTZJxxx
T (tolerance) =A, B, C or D
Band color =Black

Specification Features:

- Zener Voltage Range 2.0 to 39 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 Lads 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	T Tolerance		VZ@IZT Min	VZ@IZT Nom	VZ@IZT Max	Izt (mA)	Zzt@Izt (Ohms) Max	Zzk@Izk (Ohms) Max	Izk (mA)	I_R @V_R (uA) Max	V_R (V)
TCMTZJ2V0	A	5.5%	1.880	1.990	2.100	5	100	1000	0.5	120	0.5
	B	4.3%	2.020	2.110	2.200						
TCMTZJ2V2	A	4.0%	2.120	2.210	2.300	5	100	1000	0.5	100	0.7
	B	4.1%	2.220	2.315	2.410						
TCMTZJ2V4	A	3.9%	2.330	2.425	2.520	5	100	1000	0.5	120	1.0
	B	4.0%	2.430	2.530	2.630						
TCMTZJ2V7	A	4.0%	2.540	2.645	2.750	5	110	1000	0.5	100	1.0
	B	3.9%	2.690	2.800	2.910						
TCMTZJ3V0	A	3.7%	2.850	2.960	3.070	5	120	1000	0.5	50	1.0
	B	3.4%	3.010	3.115	3.220						
TCMTZJ3V3	A	3.4%	3.160	3.270	3.380	5	120	1000	0.5	20	1.0
	B	3.1%	3.320	3.425	3.530						
TCMTZJ3V6	A	3.6%	3.455	3.575	3.695	5	100	1000	1	10	1.0
	B	3.3%	3.600	3.723	3.845						
TCMTZJ3V9	A	3.5%	3.740	3.875	4.010	5	100	1000	1	5	1.0
	B	3.3%	3.890	4.025	4.160						
TCMTZJ4V3	A	3.0%	4.040	4.165	4.290	5	100	1000	1	5	1.0
	B	3.0%	4.170	4.300	4.430						
	C	3.0%	4.300	4.435	4.570						

Electrical Characteristics T_A = 25°C unless otherwise noted

Device Type	T Tolerance		V_Z@Izt Min	V_Z@Izt Nom	V_Z@Izt Max	Izt (mA)	Zzt@Izt (Ohms) Max	Zzk@Izk (Ohms) Max	Izk (mA)	I_R@V_R (uA) Max	V_R (V)
TCMTZJ4V7	A	2.6%	4.44	4.56	4.68	5	80	900	1	5	1.0
	B	2.8%	4.55	4.68	4.80						
	C	2.7%	4.68	4.81	4.93						
TCMTZJ5V1	A	2.6%	4.81	4.94	5.07	5	80	800	1	5	1.5
	B	2.6%	4.94	5.07	5.20						
	C	2.7%	5.09	5.23	5.37						
TCMTZJ5V6	A	2.4%	5.28	5.41	5.55	5	60	500	1	5	2.5
	B	2.5%	5.45	5.59	5.73						
	C	2.6%	5.61	5.76	5.91						
TCMTZJ6V2	A	2.7%	5.78	5.94	6.09	5	60	300	1	5	3.0
	B	2.6%	5.96	6.12	6.27						
	C	2.5%	6.12	6.28	6.44						
TCMTZJ6V8	A	2.6%	6.29	6.46	6.63	5	20	150	0.5	2	3.5
	B	2.6%	6.49	6.66	6.83						
	C	2.6%	6.66	6.84	7.01						
TCMTZJ7V5	A	2.7%	6.85	7.04	7.22	5	20	120	0.5	0.5	4.0
	B	2.6%	7.07	7.26	7.45						
	C	2.5%	7.29	7.48	7.67						
TCMTZJ8V2	A	2.6%	7.53	7.73	7.92	5	20	120	0.5	0.5	5.0
	B	2.6%	7.78	7.99	8.19						
	C	2.5%	8.03	8.24	8.45						
TCMTZJ9V1	A	2.6%	8.29	8.51	8.73	5	25	120	0.5	0.5	6.0
	B	2.5%	8.57	8.79	9.01						
	C	2.6%	8.83	9.07	9.30						
TCMTZJ10V	A	2.6%	9.12	9.36	9.59	5	30	120	0.5	0.2	7.0
	B	2.6%	9.41	9.66	9.90						
	C	2.5%	9.70	9.95	10.20						
	D	2.5%	9.94	10.19	10.44						
TCMTZJ11V	A	2.6%	10.18	10.45	10.71	5	30	120	0.5	0.2	8.0
	B	2.6%	10.50	10.78	11.05						
	C	2.5%	10.82	11.10	11.38						
TCMTZJ12V	A	2.5%	11.13	11.42	11.71	5	30	110	0.5	0.2	9.0
	B	2.6%	11.44	11.74	12.03						
	C	2.6%	11.74	12.05	12.35						
TCMTZJ13V	A	2.6%	12.11	12.43	12.75	5	35	110	0.5	0.2	10
	B	2.6%	12.55	12.88	13.21						
	C	2.6%	12.99	13.33	13.66						
TCMTZJ15V	A	2.5%	13.44	13.79	14.13	5	40	110	0.5	0.2	11
	B	2.6%	13.89	14.26	14.62						
	C	2.5%	14.35	14.72	15.09						
TCMTZJ16V	A	2.6%	14.80	15.19	15.57	5	40	150	0.5	0.2	12
	B	2.6%	15.25	15.65	16.04						
	C	2.5%	15.69	16.10	16.51						
TCMTZJ18V	A	2.5%	16.22	16.64	17.06	5	45	150	0.5	0.2	13
	B	2.5%	16.82	17.26	17.70						
	C	2.6%	17.42	17.88	18.33						
TCMTZJ20V	A	2.5%	18.02	18.49	18.96	5	55	200	0.5	0.2	15
	B	2.5%	18.63	19.11	19.59						
	C	2.5%	19.23	19.73	20.22						
	D	2.5%	19.72	20.22	20.72						

Electrical Characteristics T_A = 25°C unless otherwise noted

Device Type	T Tolerance		V_Z@Izt Min	V_Z@Izt Nom	V_Z@Izt Max	Izt (mA)	Zzt@Izt (Ohms) Max	Zzk@Izk (Ohms) Max	Izk (mA)	I_R@V_R (uA) Max	V_R (V)
TCMTZJ22V	A	2.2%	20.15	20.68	21.20	5	30	200	0.5	0.2	17
	B	2.5%	20.64	21.18	21.71						
	C	2.5%	21.08	21.63	22.17						
	D	2.5%	21.52	22.08	22.63						
TCMTZJ24V	A	2.5%	22.05	22.62	23.18	5	35	200	0.5	0.2	19
	B	2.5%	22.61	23.19	23.77						
	C	2.5%	23.12	23.72	24.31						
	D	2.5%	23.63	24.24	24.85						
TCMTZJ27V	A	2.5%	24.26	24.89	25.52	5	45	250	0.5	0.2	21
	B	2.5%	24.97	25.62	26.26						
	C	2.5%	25.63	26.29	26.95						
	D	2.5%	26.29	26.97	27.64						
TCMTZJ30V	A	2.5%	26.99	27.69	28.39	5	55	250	0.5	0.2	23
	B	2.5%	27.70	28.42	29.13						
	C	2.5%	28.36	29.09	29.82						
	D	2.5%	29.02	29.77	30.51						
TCMTZJ33V	A	2.5%	29.68	30.45	31.22	5	65	250	0.5	0.2	25
	B	2.5%	30.32	31.10	31.88						
	C	2.5%	30.90	31.70	32.50						
	D	2.5%	31.49	32.30	33.11						
TCMTZJ36V	A	2.5%	32.14	32.97	33.79	5	75	250	0.5	0.2	27
	B	2.5%	32.79	33.64	34.49						
	C	2.5%	33.40	34.27	35.13						
	D	2.5%	34.01	34.89	35.77						
TCMTZJ39V	A	2.5%	34.68	35.58	36.47	5	85	250	0.5	0.2	30
	B	2.5%	35.36	36.28	37.19						
	C	2.5%	36.00	36.93	37.85						
	D	2.5%	36.63	37.58	38.52						
VF (forward voltage) = 1.2 V maximum @ IF = 200mA for all types											

Note:

1. The zener voltage subdivision (VZ) is measured 40mS after diode is powered up.
2. The operating resistance (Zzt and Zzk) is measured by superimposing a minute alternation current in the regulated current (Iz).
3. When ordering, please specify tolerance A, B, C or D.

Typical Characteristics

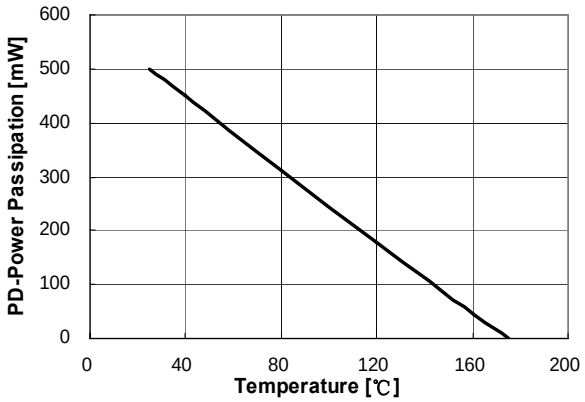


Figure 1. Power Dissipation vs Ambient Temperature
Valid provided leads at a distance of 0.8mm from case are kept at ambient temperature

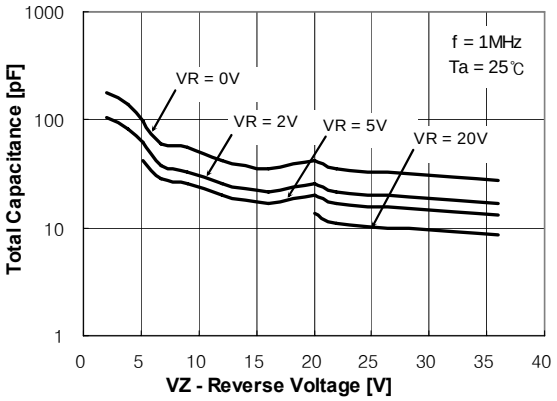


Figure 2. Total Capacitance

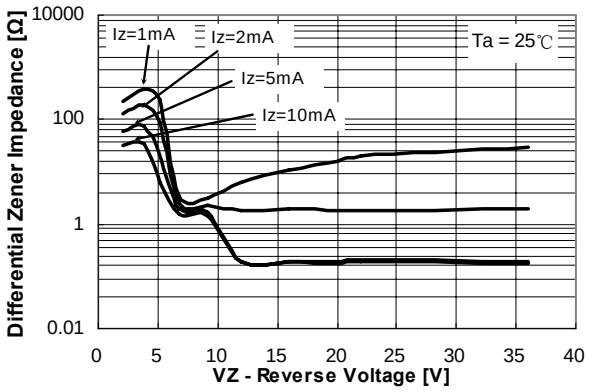


Figure 3. Differential Impedance vs. Zener Voltage

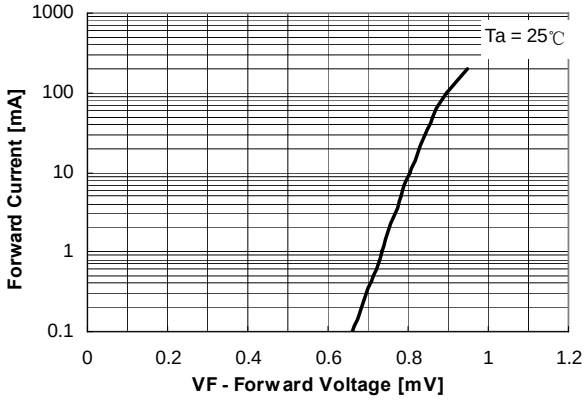


Figure 4. Forward Current vs. Forward Voltage

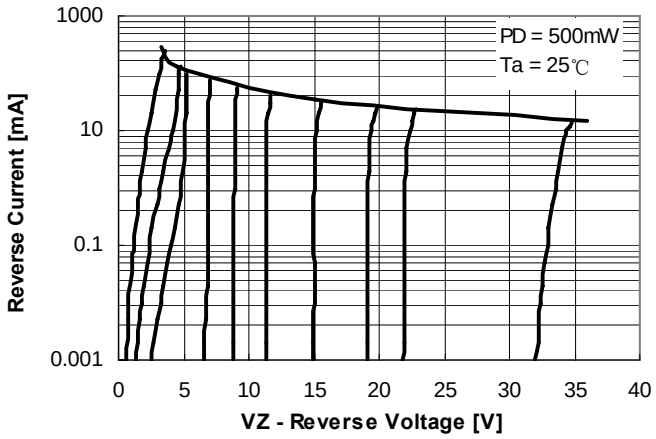
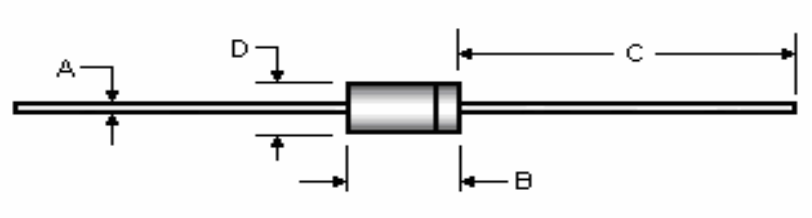


Figure 5. Reverse Current vs. Reverse Voltage

Package Outline

Package	Case Outline
DO-34	

Dimension	DO-34			
	Millimeters		Inches	
	Min	Max	Min	Max
A	0.46	0.55	0.018	.0022
B	2.16	3.04	0.085	0.120
C	25.40	38.10	1.000	1.500
D	1.27	1.90	0.050	0.075

Note:
1.0 All dimensions are within JEDEC standard.
2.0 DO-34 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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