TCMTZJxxx Series

500 mW DO-34 Hermetically Sealed Glass Zener Voltage Regulators

Absolute Maximum Ratings T_A = 25°C unless otherwise noted

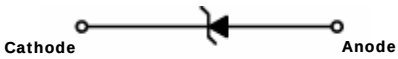
Parameter	Value	Units
Power Dissipation	500	mW
Storage Temperature Range	-65 to +200	°C
Operating Junction Temperature	+175	°C
Lead Temperature (1/16" from case for 10 seconds)	230	°C

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

AXIAL LEAD
DO34

DEVICE MARKING DIAGRAM

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



ELECTRICAL SYMBOL

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 leads are readily solderable
- Cathode indicated by polarity band

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											

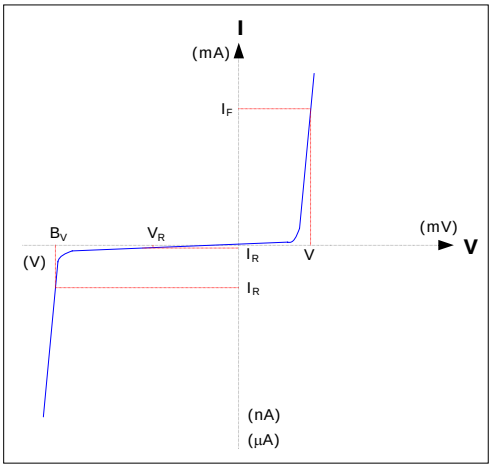
Note:

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.

Electrical Symbol Definition

Symbol	Parameter
VZ	Reverse Zener Voltage @ I_{zt}
I_{zt}	Reverse Current
Z_{zt}	Maximum Zener Impedance @ I_{zt}
I_{zk}	Reverse Current
Z_{zk}	Maximum Zener Impedance @ I_{zk}
I_R	Reverse Current @ V_R
V_R	Breakdown Voltage
I_F	Forward Current
V_F	Forward Voltage @ **I_F**

Typical Characteristics



Ordering Information

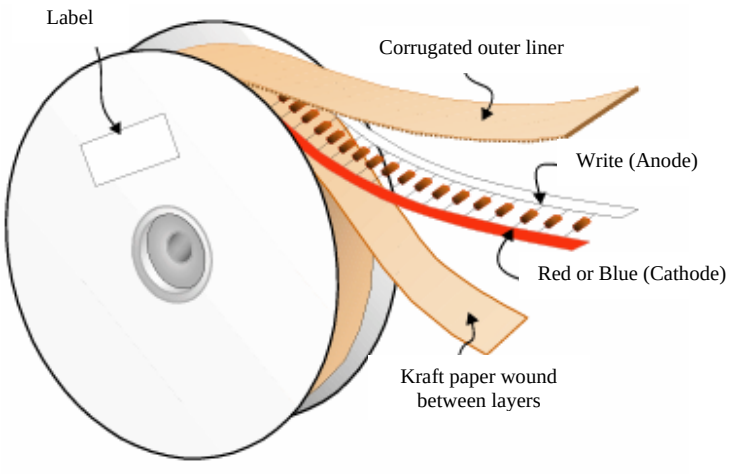
Device	Package	Quantity
TCMTZJXXXT	Bulk	10,000
TCMTZJXXXT.TB	Tape and Ammo	5,000
TCMTZJXXXT.TR	Tape and Reel	10,000
TCMTZJXXXT	Others (…contact Tak Cheong sales representatives)	

Axial-Lead Tape Packaging Standards

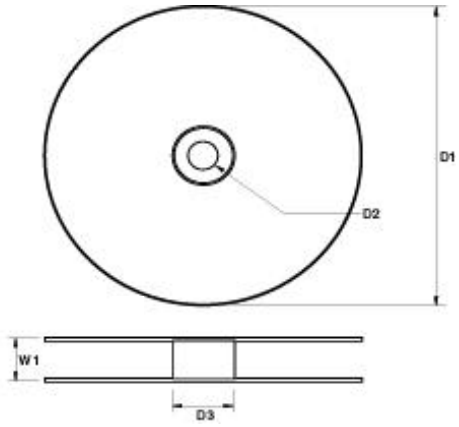
This axial-lead component's packaging requirements use in automatic testing and assembly equipment. And this standard practices for lead-tape packaging of axial-lead components meets the requirements of EIA Standard RS-296-D "Lead-taping of Components on Axial Lead Configuration for Automatic Insertion".

Tape & Reel Packaging Information

Tape & Reel Outline



Reel Dimensions

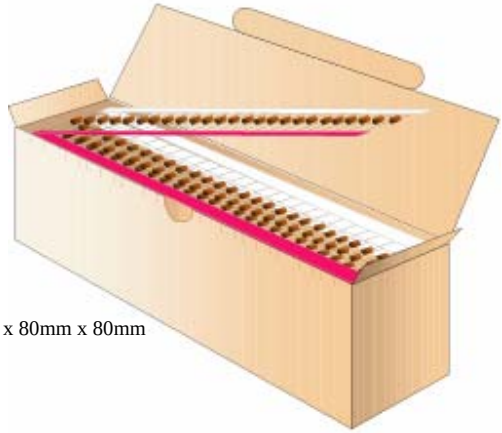


DIM	Millimeters
D1	356
D2	30
D3	84
D4	77.5

Quantity Per Reel

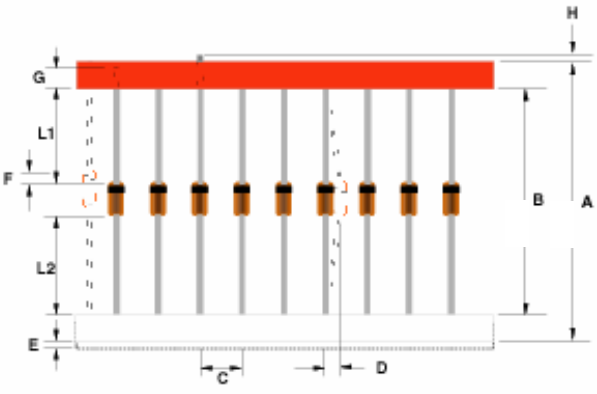
Package Type	Quantity Per Reel
DO-34	10,000

Tape & Ammo Packaging Information

Tape & Ammo Outline	 250mm x 80mm x 80mm
Quantity Per Ammo Box	

Package Type	Quantity Per Reel
DO-34	5,000

Taping Dimension

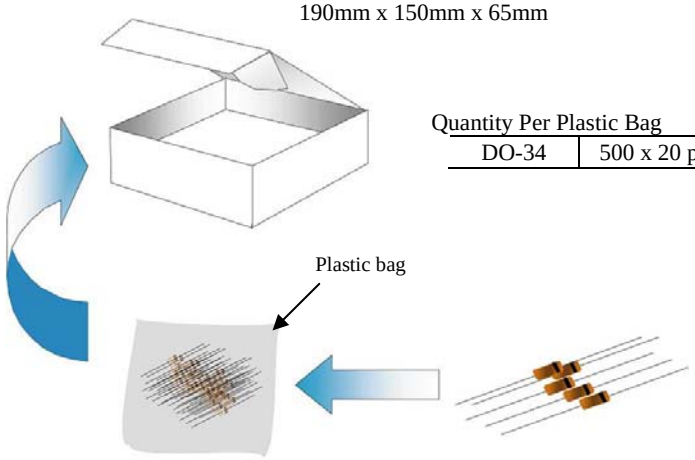


Descerip tion	Millimeters	
Standard Width	52	26
Tape Spacing (B)	52±0.69	26+0.5/-0
Component Pitch (C)	5.08±0.4	5.08±0.4
Untaped Lead (L1-L2)	±0.69	±0.69
Glass Offset (F)	±0.69	±0.69
Bent (D)	1.2 Max	1.2 Max
Tape Width (G)	6.138±0.576	6.138±0.576
Tape Mismatch (E)	0.55 Max	0.55 Max
Taped Lead (G)	3.2 Min	3.2 Min
Lead Beyond Tape (H)	0	0

Bulk Packaging Information

Bulk Outline

190mm x 150mm x 65mm



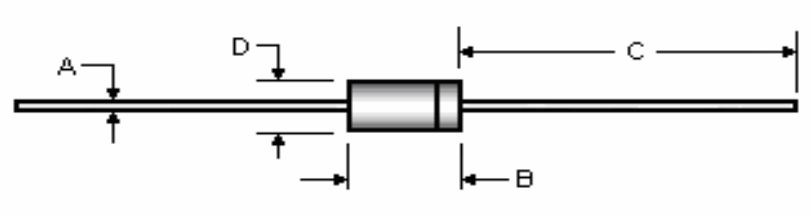
Quantity Per Plastic Bag

DO-34	500 x 20 plastic bags

Quantity Per Box

Package Type	Quantity Per Reel
DO-34	10,000

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.