TAK CHEONG®

SEMICONDUCTOR

500 mW DO-35 Hermetically Sealed Glass Zener Voltage Regulators

AXIAL LEAD
DO35

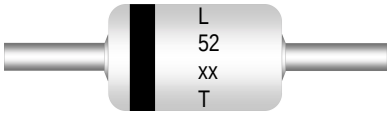
Absolute Maximum Ratings

T_A = 25°C unless otherwise noted

Parameter	Value	Units
Power Dissipation	500	mW
Storage Temperature Range	-65 to +200	°C
Operating Junction Temperature	+200	°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.

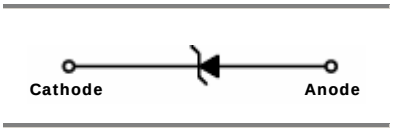
DEVICE MARKING DIAGRAM



L : Logo
Device Code : TC1N52xxT
Tolerance (T) : A = 10%
B = 5%
C = 2%
D = 1%

Specification Features:

- Zener Voltage Range 2.4 to 56 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
- Cathode indicated by polarity band



ELECTRICAL SYMBOL

Electrical Characteristics

T_A = 25°C unless otherwise noted

Device Type	V_Z @ I_{ZT} (Volts) Nominal	I_{ZT} (mA)	Z_{ZT} @ I_{ZT} (Ω) Max	Z_{ZK} @ I_{ZK} = 0.25mA (Ω) Max	I_R @ V_R (μA) Max	V_R (Volts)
TC1N5221B	2.4	20	30	1200	100	1
TC1N5222B	2.5	20	30	1250	100	1
TC1N5223B	2.7	20	30	1300	75	1
TC1N5224B	2.8	20	30	1400	75	1
TC1N5225B	3	20	29	1600	50	1
TC1N5226B	3.3	20	28	1600	25	1
TC1N5227B	3.6	20	24	1700	15	1
TC1N5228B	3.9	20	23	1900	10	1
TC1N5229B	4.3	20	22	2000	5	1
TC1N5230B	4.7	20	19	1900	5	2
TC1N5231B	5.1	20	17	1600	5	2
TC1N5232B	5.6	20	11	1600	5	3
TC1N5233B	6	20	7	1600	5	3.5
TC1N5234B	6.2	20	7	1000	5	4
TC1N5235B	6.8	20	5	750	3	5
TC1N5236B	7.5	20	6	500	3	6
TC1N5237B	8.2	20	8	500	3	6.5
TC1N5238B	8.7	20	8	600	3	6.5
TC1N5239B	9.1	20	10	600	3	7
TC1N5240B	10	20	17	600	3	8
TC1N5241B	11	20	22	600	2	8.4
TC1N5242B	12	20	30	600	1	9.1
TC1N5243B	13	9.5	13	600	0.5	9.9
TC1N5244B	14	9	15	600	0.1	10

Electrical Characteristics

T_A = 25°C unless otherwise noted

Device Type	V_Z @ I_{ZT} (Volts) Nominal	I_{ZT} (mA)	Z_{ZT} @ I_{ZT} (Ω) Max	Z_{ZK} @ I_{ZK} = 0.25mA (Ω) Max	I_R @ V_R (μA) Max	V_R (Volts)
TC1N5245B	15	8.5	16	600	0.1	11
TC1N5246B	16	7.8	17	600	0.1	12
TC1N5247B	17	7.4	19	600	0.1	13
TC1N5248B	18	7	21	600	0.1	14
TC1N5249B	19	6.6	23	600	0.1	14
TC1N5250B	20	6.2	25	600	0.1	15
TC1N5251B	22	5.6	29	600	0.1	17
TC1N5252B	24	5.2	33	600	0.1	18
TC1N5253B	25	5	35	600	0.1	19
TC1N5254B	27	4.6	41	600	0.1	21
TC1N5255B	28	4.5	44	600	0.1	21
TC1N5256B	30	4.2	49	600	0.1	23
TC1N5257B	33	3.8	58	700	0.1	25
TC1N5258B	36	3.4	70	700	0.1	27
TC1N5259B	39	3.2	80	800	0.1	30
TC1N5258B	36	3.4	70	700	0.1	27
TC1N5259B	39	3.2	80	800	0.1	30
TC1N5260B	43	3	93	900	0.1	33
TC1N5261B	47	2.7	105	1000	0.1	36
TC1N5262B	51	2.5	125	1100	0.1	39
TC1N5263B	56	2.2	150	1300	0.1	43

V_F Forward Voltage = 1.1 V Maximum @ I_F = 200 mA for all types

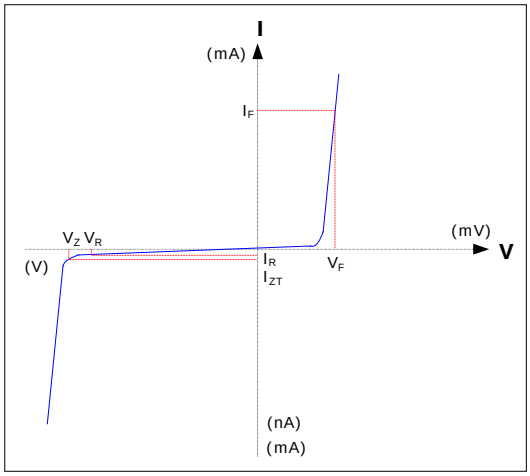
Notes:

1. The type numbers listed have zener voltage as shown and have a standard tolerance on the nominal zener voltage of ±5%. Suffix A = ±10%, C = ±2% and D = ±1%.
2. For detailed information on price, availability and delivery of nominal zener voltages between the voltages shown and tighter voltage tolerances, contact your nearest Tak Cheong Electronics representative.
3. The 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} or I_{ZK}) is superimposed to I_{ZT} or I_{ZK}.

Electrical Symbol Definition

Symbol	Parameter
V_Z	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 Leakage Current @ V_R
V_R	Breakdown Voltage
I_F	Forward Current
V_F	Forward Voltage @ I_F

Typical Characteristics



Ordering Information

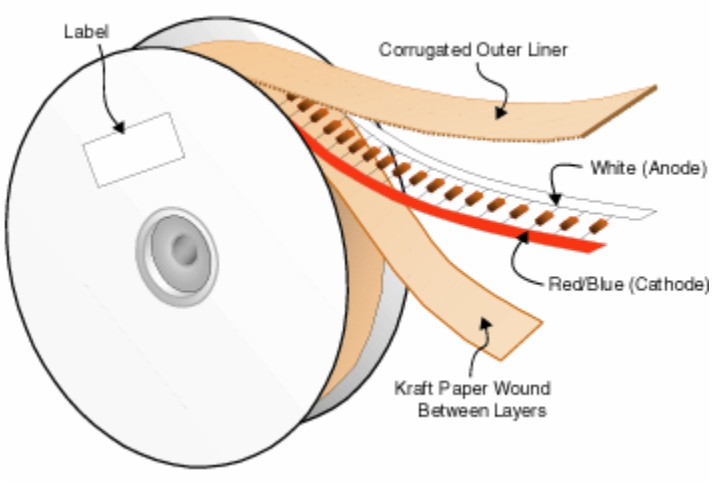
Device	Package	Quantity
TC1N52xxB	Bulk	10,000
TC1N52xxB.TB	Tape and Ammo (52mm)	5,000
TC1N52xxB.TR	Tape and Reel (52mm)	10,000
TC1N52xxB.T26B	Tape and Ammo (26mm)	5,000
TC1N52xxB	Others (…contact Tak Cheong sales representatives)	

Axial-Lead Tape Packaging Standards

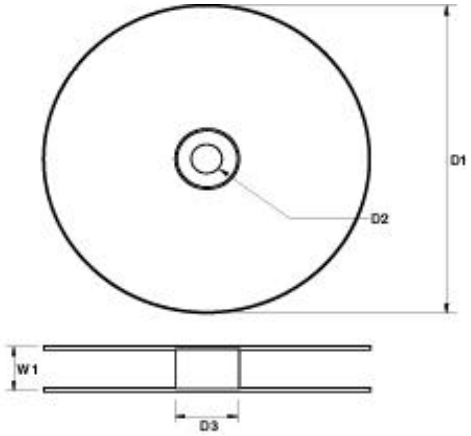
This axial-lead component's packaging requirements use in automatic testing and assembly equipment. And this standard practices for lead-tape packaging of axial-lead components meets the requirements of EIA Standard RS-296-D "Lead-taping of Components on Axial Lead Configuration for Automatic Insertion".

Tape & Reel Packaging Information

Tape & Reel Outline



Reel Dimensions

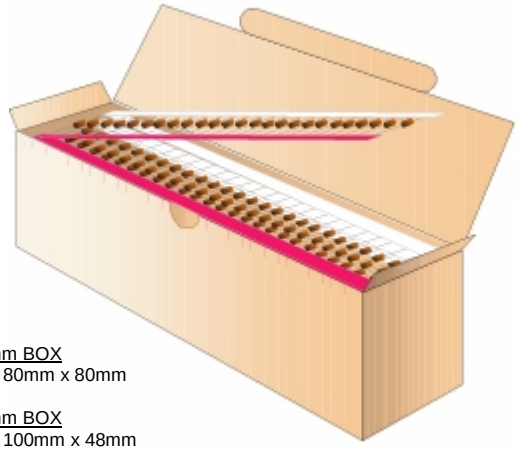


DIM	Millimeters
D1	356
D2	30
D3	84
W1	77.5

Quantity Per Reel

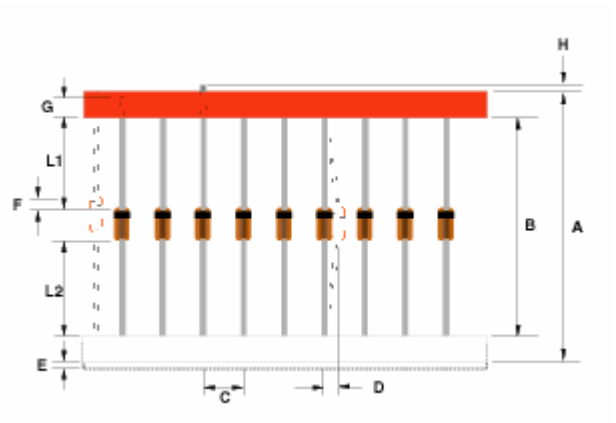
PKG Type	Quantity Per Reel
DO-35	10,000

Tape & Ammo Packaging Information

Tape & Ammo Outline	 FOR 52mm BOX 250mm x 80mm x 80mm FOR 26mm BOX 255mm x 100mm x 48mm
Quantity Per Ammo Box	

PKG Type	Quantity Per Box
DO-35	5,000

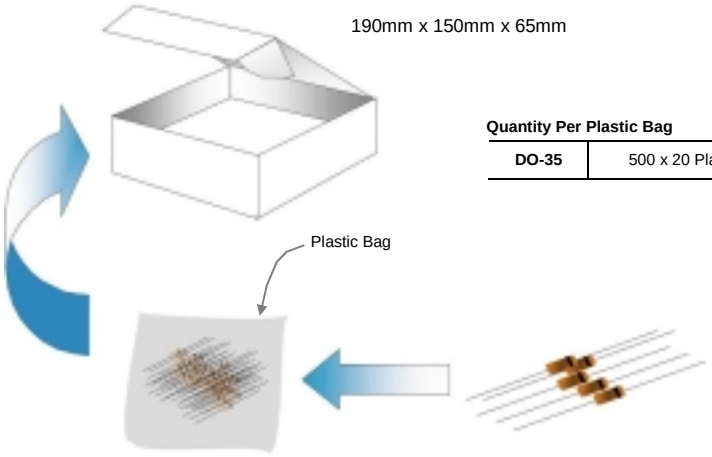
Taping Dimensions



Description	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

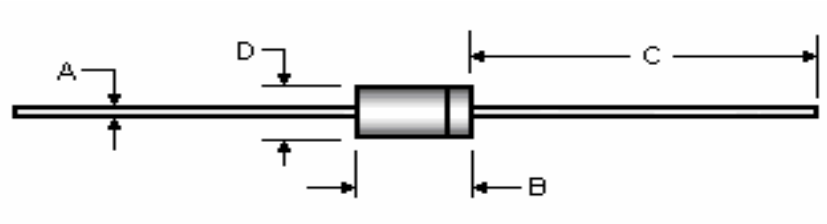


Quantity Per Plastic Bag	
DO-35	500 x 20 Plastic Bag

Quantity Per Box

PKG Type	Quantity Per Box
DO-35	10,000

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.