

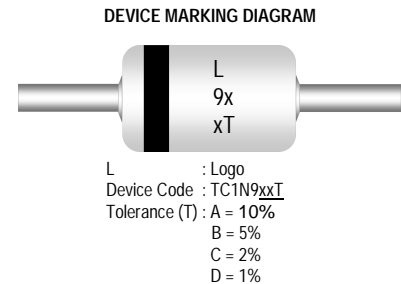
# 500 mW DO-35 Hermetically Sealed Glass Zener Voltage Regulators



## Absolute Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise noted

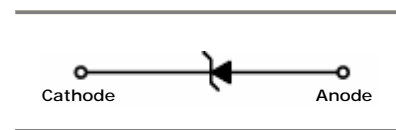
Parameter	Value	Units
Power Dissipation	500	mW
Storage Temperature Range	-65 to +200	$^\circ\text{C}$
Operating Junction Temperature	+200	$^\circ\text{C}$
Lead Temperature (1/16" from case for 10 seconds)	+230	$^\circ\text{C}$

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



## Specification Features:

- Zener Voltage Range 6.8 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 $T_A = 25^\circ\text{C}$ unless otherwise noted

Device Type	$V_Z @ I_{ZT}$ (Volts) Nominal	$I_{ZT}$ (mA)	$Z_{ZT} @ I_{ZT}$ ( $\Omega$ ) Max	$Z_{ZK} @ I_{ZK} = 0.25\text{mA}$ ( $\Omega$ ) Max	$I_R @ V_R$ ( $\mu\text{A}$ ) Max	$V_R$ (Volts)
TC1N957B	6.8	18.5	4.5	700	150	5.2
TC1N958B	7.5	16.5	5.5	700	75	5.7
TC1N959B	8.2	15	6.5	700	50	6.2
TC1N960B	9.1	14	7.5	700	25	6.9
TC1N961B	10	12.5	8.5	700	10	7.6
TC1N962B	11	11.5	9.5	700	5	8.4
TC1N963B	12	10.5	11.5	700	5	9.1
TC1N964B	13	9.5	13	700	5	9.9
TC1N965B	15	8.5	16	700	5	11.4
TC1N966B	16	7.8	17	700	5	12.2
TC1N967B	18	7	21	750	5	13.7
TC1N968B	20	6.2	25	750	5	15.2
TC1N969B	22	5.6	29	750	5	16.7
TC1N970B	24	5.2	33	750	5	18.2
TC1N971B	27	4.6	41	750	5	20.6
TC1N972B	30	4.2	49	1000	5	22.8
TC1N973B	33	3.8	58	1000	5	25.1
TC1N974B	36	3.4	70	1000	5	27.4
TC1N975B	39	3.2	80	1000	5	29.7
TC1N976B	43	3	93	1500	5	32.7
TC1N977B	47	2.7	105	1500	5	35.8

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

Device Type	$V_Z @ I_{ZT}$ (Volts) Nominal	$I_{ZT}$ (mA)	$Z_{ZT} @ I_{ZT}$ ( $\Omega$ ) Max	$Z_{ZK} @ I_{ZK} = 0.25\text{mA}$ ( $\Omega$ ) Max	$I_R @ V_R$ ( $\mu\text{A}$ ) Max	$V_R$ (Volts)
TC1N978B	51	2.5	125	1500	5	38.8
TC1N979B	56	2.2	150	2000	5	42.6

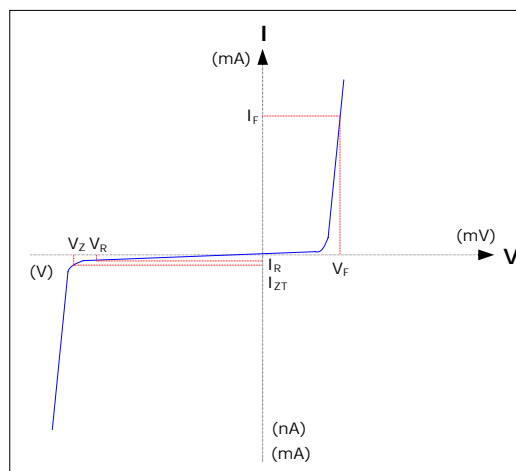
 $V_F$  Forward Voltage = 1.5 V Maximum @  $I_F = 200$  mA for all types

**Notes:**

- The type numbers listed have zener voltage as shown and have a standard tolerance on the nominal zener voltage of  $\pm 5\%$ . Suffix A =  $\pm 10\%$ , C =  $\pm 2\%$  and D =  $\pm 1\%$ .
- 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.
- 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**

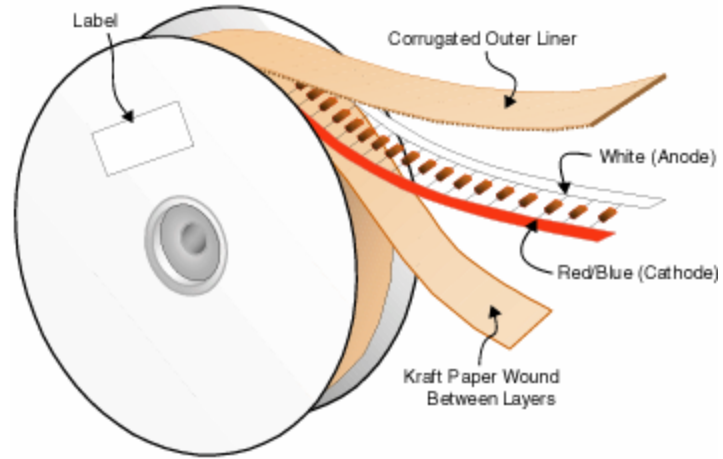
Device	Package	Quantity
TC1N9xxB	Bulk	10,000
TC1N9xxB.TB	Tape and Ammo (52mm)	5,000
TC1N9xxB.TR	Tape and Reel (52mm)	10,000
TC1N9xxB.TB26	Tape and Ammo (26mm)	5,000
TC1N9xxB	Others (...contact Tak Cheong sales representatives)	

**Axial-Lead Tape Packaging Standards**

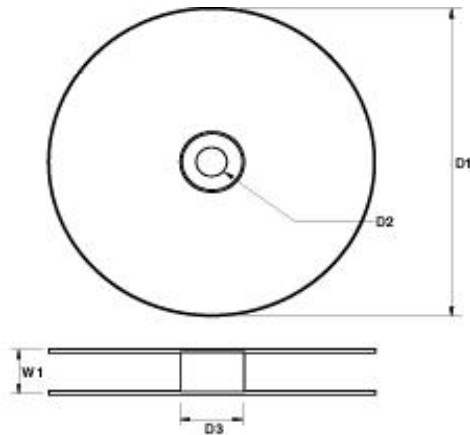
This axial-lead component's packaging requirements use in automatic testing and assembly equipment. And this standard practices for lead-tape packaging of axial-lead components meets the requirements of EIA Standard RS-296-D "Lead-taping of Components on Axial Lead Configuration for Automatic Insertion".

Tape & Reel Packaging Information

Tape & Reel Outline



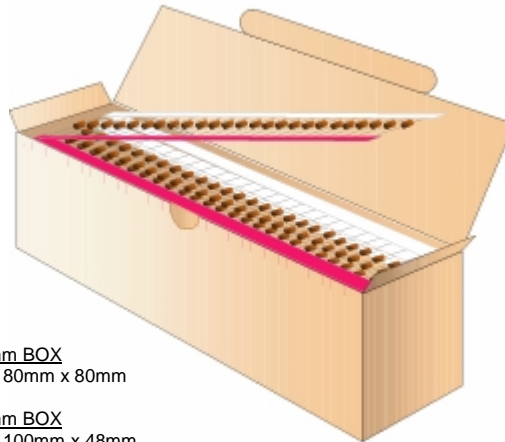
Reel Dimensions



DIM	Millimeters
D1	356
D2	30
D3	84
W1	77.5

Quantity Per Reel

PKG Type	Quantity Per Reel
DO-35	10,000

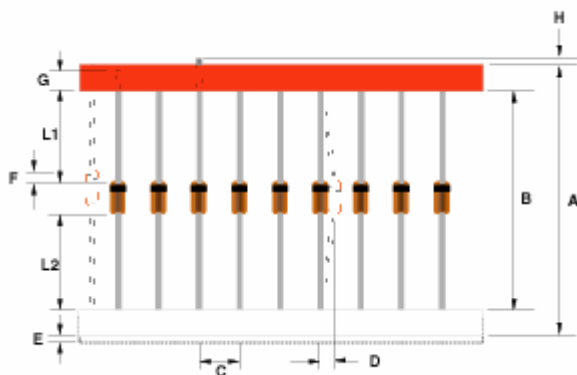
**Tape & Ammo Packaging Information**
**Tape & Ammo Outline**


FOR 52mm BOX  
250mm x 80mm x 80mm

FOR 26mm BOX  
255mm x 100mm x 48mm

**Quantity Per Ammo Box**

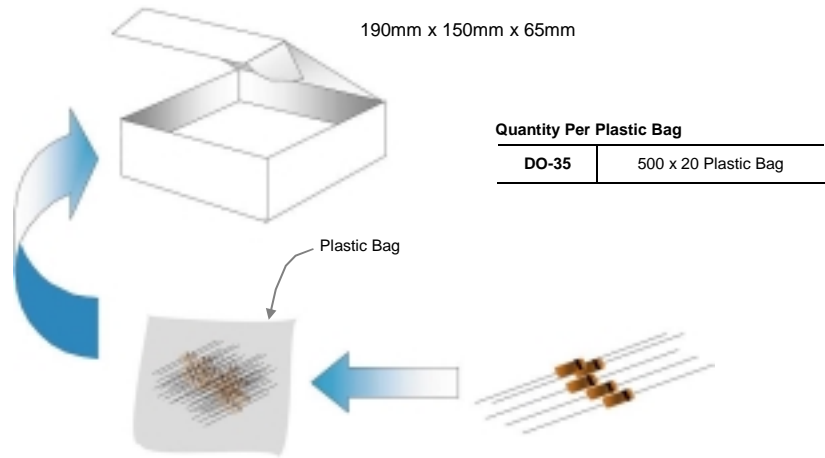
PKG Type	Quantity Per Box
DO-35	5,000

**Taping Dimensions**


Description	Millimeters	
	Standard Width	52
Tape Spacing (B)	52.37 ± 1.5	26 ± 1.5
Component Pitch (C)	5.08 ± 0.4	5.08 ± 0.4
Untaped Lead (L1 – L2)	± 1.4	± 1.0
Glass Offset (F)	± 0.79	± 0.79
Bent (D)	1.2 Max	1.2 Max
Tape Width (G)	6.138 ± 0.576	6.138 ± 0.576
Tape Mismatch (E)	0.75 Max	0.75 Max
Taped Lead (G)	2 Min	2 Min
Lead Beyond Tape (H)	0	0

Bulk Packaging Information

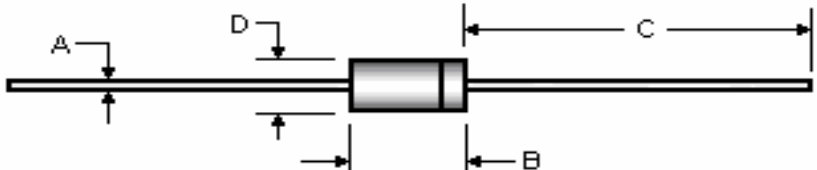
Bulk Outline



Quantity Per Box

PKG Type	Quantity Per Box
DO-35	10,000

**Package Outline**

Package	Case Outline				
DO-35					
	<b>DO-35</b>				
	<b>DIM</b>	<b>Millimeters</b>		<b>Inches</b>	
		Min	Max	Min	Max
	<b>A</b>	0.46	0.55	0.018	0.022
	<b>B</b>	3.05	5.08	0.120	0.200
<b>C</b>	25.40	38.10	1.000	1.500	
<b>D</b>	1.53	2.28	0.060	0.090	

**Notes:**

1. All dimensions are within JEDEC standard.
2. DO35 polarity denoted by cathode band.