

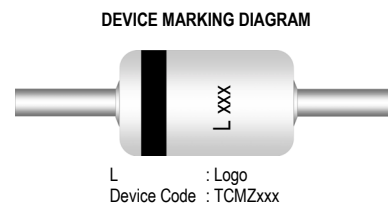
# 500 mW DO-34 Hermetically Sealed Glass Zener Voltage Regulators



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

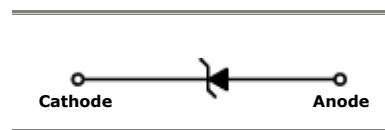
Parameter	Value	Units
Power Dissipation	500	mW
Storage Temperature Range	-65 to +200	$^\circ\text{C}$
Operating Junction Temperature	+200	$^\circ\text{C}$
Lead Temperature (1/16" from case for 10 seconds)	+230	$^\circ\text{C}$

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



## Specification Features:

- Zener Voltage Range 2.0 to 56 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 $T_A = 25^\circ\text{C}$ unless otherwise noted

Device Type	$V_Z @ I_{ZT}$ (Volts) Nominal	$I_{ZT}$ (mA)	$Z_{ZT} @ I_{ZT}$ ( $\Omega$ ) Max	$I_R @ V_R$ ( $\mu\text{A}$ ) Max	$V_R$ (Volts)
TCMZ2V0	2.0	5	100	120	0.5
TCMZ2V2	2.2	5	100	120	0.7
TCMZ2V4	2.4	5	100	120	1
TCMZ2V7	2.7	5	110	100	1
TCMZ3V0	3.0	5	120	50	1
TCMZ3V3	3.3	5	120	20	1
TCMZ3V6	3.6	5	100	10	1
TCMZ3V9	3.9	5	100	5	1
TCMZ4V3	4.3	5	100	5	1
TCMZ4V7	4.7	5	80	5	1
TCMZ5V1	5.1	5	80	5	1.5
TCMZ5V6	5.6	5	60	5	2.5
TCMZ6V2	6.2	5	60	5	3
TCMZ6V8	6.8	5	20	2	3.5
TCMZ7V5	7.5	5	20	0.5	4
TCMZ8V2	8.2	5	20	0.5	5
TCMZ9V1	9.1	5	25	0.5	6
TCMZ10V	10	5	30	0.2	7
TCMZ11V	11	5	30	0.2	8
TCMZ12V	12	5	30	0.2	9
TCMZ13V	13	5	35	0.2	10
TCMZ15V	15	5	40	0.2	11

**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	$I_R @ V_R$ ( $\mu\text{A}$ ) Max	$V_R$ (Volts)
TCMZ16V	16	5	40	0.2	12
TCMZ18V	18	5	45	0.2	13
TCMZ20V	20	5	45	0.2	15
TCMZ22V	22	5	30	0.2	17
TCMZ24V	24	5	35	0.2	19
TCMZ27V	27	5	45	0.2	21
TCMZ30V	30	5	55	0.2	23
TCMZ33V	33	5	65	0.2	25
TCMZ36V	36	5	75	0.2	27
TCMZ39V	39	5	85	0.2	30
TCMZ43V	43	5	90	0.2	33
TCMZ47V	47	5	90	0.2	36
TCMZ51V	51	5	110	0.2	39
TCMZ56V	56	5	110	0.2	43

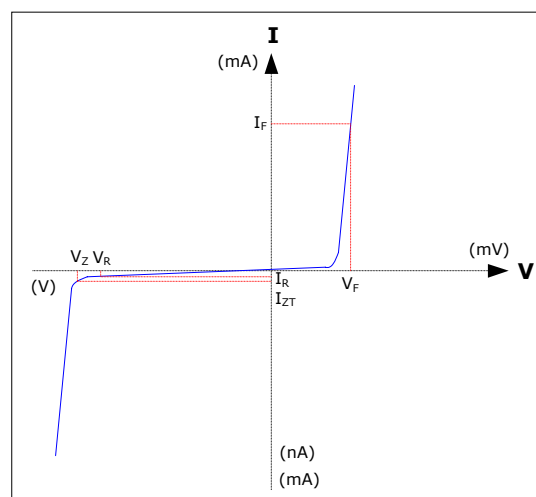
 $V_F$  Forward Voltage = 1.2 V Maximum @  $I_F = 200$  mA for all types

**Notes:**

- The type numbers listed have zener voltage min/max limits as shown and have a standard tolerance on the nominal zener voltage of 5%.
- 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**

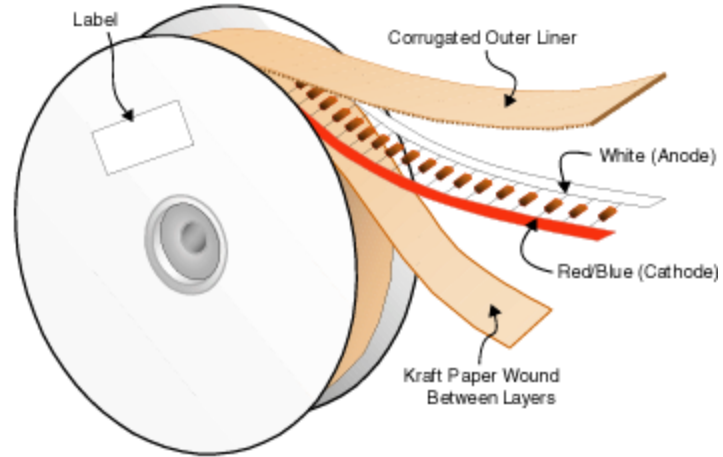
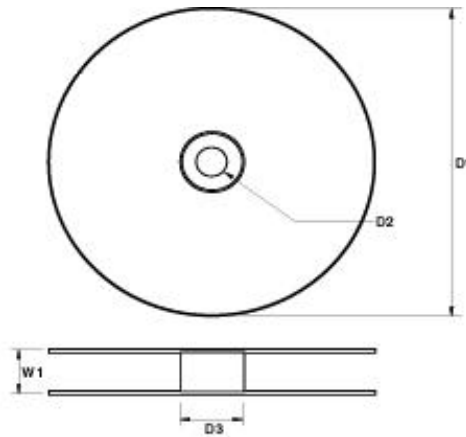
Symbol	Parameter
$V_Z$	Reverse Zener Voltage @ $I_{ZT}$
$I_{ZT}$	Reverse Current
$Z_{ZT}$	Maximum Zener Impedance @ $I_{ZT}$
$I_{ZK}$	Reverse Current
$Z_{ZK}$	Maximum Zener Impedance @ $I_{ZK}$
$I_R$	Reverse Leakage Current @ $V_R$
$V_R$	Breakdown Voltage
$I_F$	Forward Current
$V_F$	Forward Voltage @ $I_F$

**Typical Characteristics**

**Ordering Information**

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

**Axial-Lead Tape Packaging Standards**

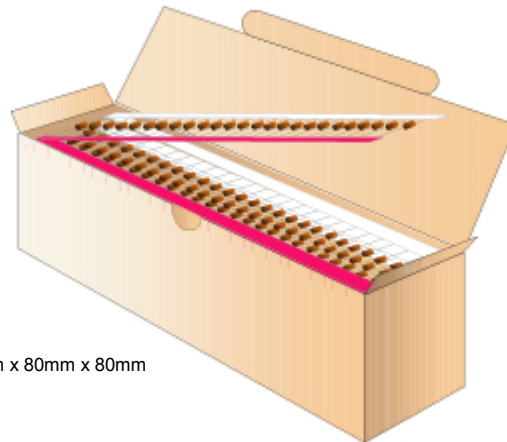
This axial-lead component's packaging requirements use in automatic testing and assembly equipment. And this standard practices for lead-tape packaging of axial-lead components meets the requirements of EIA Standard RS-296-D "Lead-taping of Components on Axial Lead Configuration for Automatic Insertion".

**Tape & Reel Packaging Information**
**Tape & Reel Outline**

**Reel Dimensions**


DIM	Millimeters
D1	356
D2	30
D3	84
W1	77.5

**Quantity Per Reel**

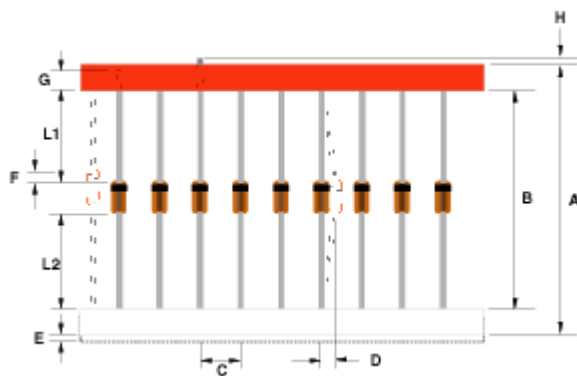
PKG Type	Quantity Per Reel
DO-34	10,000

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


250mm x 80mm x 80mm

**Quantity Per Ammo Box**

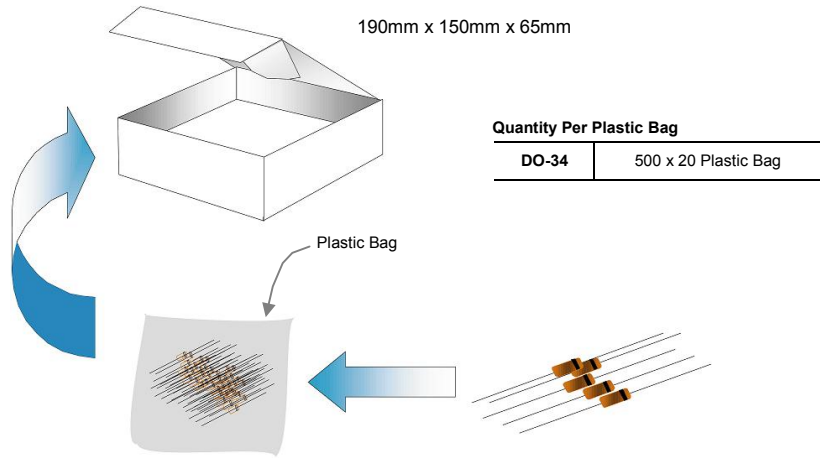
PKG Type	Quantity Per Box
DO-34	5,000

**Taping Dimensions**


Description	Millimeters	
	Standard Width	52
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**

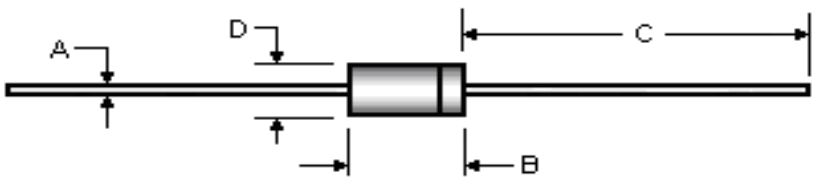
**Bulk Outline**



**Quantity Per Box**

PKG Type	Quantity Per Box
DO-34	10,000

**Package Outline**

Package	Case Outline				
DO-34					
	<b>DO-34</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>	2.16	3.04	0.085	0.120
<b>C</b>	25.40	38.10	1.000	1.500	
<b>D</b>	1.27	1.90	0.050	0.075	

**Notes:**

1. All dimensions are within JEDEC standard.
2. DO34 polarity denoted by cathode band.