

500 mW LL-34 Hermetically Sealed Glass Zener Voltage Regulators



SURFACE MOUNT
LL34

DEVICE MARKING DIAGRAM



Cathode Band Color : Blue

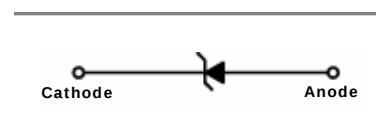
Absolute Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise noted

Parameter	Value	Units
Power Dissipation	500	mW
Storage Temperature Range	-65 to +200	$^\circ\text{C}$
Operating Junction Temperature	+200	$^\circ\text{C}$

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
- LL-34 (Mini-MELF) Package
- Surface Device Type Mounting
- Hermetically Sealed Glass
- Compression Bonded Construction
- All external surfaces are corrosion resistant and leads are readily solderable
- 1st band indicates negative polarity



ELECTRICAL SYMBOL

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

Device Type	$V_Z @ I_{ZT}$ (Volts)		I_{ZT} (mA)	$Z_{ZT} @ I_{ZT}$ (Ω) Max	I_{ZK} (mA)	$Z_{ZK} @ I_{ZK}$ (Ω) Max	$I_R @ V_R$ (μA) Max	V_R (Volts)
	V_Z Min	V_Z Max						
TCBZV79C 2V0	1.88	2.12	5	100	1	600	150	1
TCBZV79C 2V2	2.08	2.33	5	100	1	600	150	1
TCBZV79C 2V4	2.28	2.56	5	100	1	600	100	1
TCBZV79C 2V7	2.51	2.89	5	100	1	600	75	1
TCBZV79C 3V0	2.8	3.2	5	95	1	600	50	1
TCBZV79C 3V3	3.1	3.5	5	95	1	600	25	1
TCBZV79C 3V6	3.4	3.8	5	90	1	600	15	1
TCBZV79C 3V9	3.7	4.1	5	90	1	600	10	1
TCBZV79C 4V3	4	4.6	5	90	1	600	5	1
TCBZV79C 4V7	4.4	5	5	80	1	500	3	2
TCBZV79C 5V1	4.8	5.4	5	60	1	480	2	2
TCBZV79C 5V6	5.2	6	5	40	1	400	1	2
TCBZV79C 6V2	5.8	6.6	5	10	1	150	3	4
TCBZV79C 6V8	6.4	7.2	5	15	1	80	2	4
TCBZV79C 7V5	7	7.9	5	15	1	80	1	5
TCBZV79C 8V2	7.7	8.7	5	15	1	80	0.7	5
TCBZV79C 9V1	8.5	9.6	5	15	1	100	0.5	6
TCBZV79C 10	9.4	10.6	5	20	1	150	0.2	7
TCBZV79C 11	10.4	11.6	5	20	1	150	0.1	8
TCBZV79C 12	11.4	12.7	5	25	1	150	0.1	8
TCBZV79C 13	12.4	14.1	5	30	1	170	0.1	8
TCBZV79C 15	13.8	15.6	5	30	1	200	0.05	10.5
TCBZV79C 16	15.3	17.1	5	40	1	200	0.05	11.2

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

Device Type	$V_Z @ I_{ZT}$ (Volts)		I_{ZT} (mA)	$Z_{ZT} @ I_{ZT}$ (Ω) Max	I_{ZK} (mA)	$Z_{ZK} @ I_{ZK}$ (Ω) Max	$I_R @ V_R$ (μA) Max	V_R (Volts)
	V_Z Min	V_Z Max						
TCBZV79C 18	16.8	19.1	5	45	1	225	0.05	12.6
TCBZV79C 20	18.8	21.2	5	55	1	225	0.05	14
TCBZV79C 22	20.8	23.3	5	55	1	250	0.05	15.4
TCBZV79C 24	22.8	25.6	5	70	1	250	0.05	16.8
TCBZV79C 27	25.1	28.9	2	80	0.5	300	0.05	18.9
TCBZV79C 30	28	32	2	80	0.5	300	0.05	21
TCBZV79C 33	31	35	2	80	0.5	325	0.05	23.1
TCBZV79C 36	34	38	2	90	0.5	350	0.05	25.2
TCBZV79C 39	37	41	2	130	0.5	350	0.05	27.3
TCBZV79C 43	40	46	2	150	0.5	375	0.05	30.1
TCBZV79C 47	44	50	2	170	0.5	375	0.05	32.9
TCBZV79C 51	48	54	2	180	0.5	400	0.05	35.7
TCBZV79C 56	52	60	2	200	0.5	425	0.05	39.2

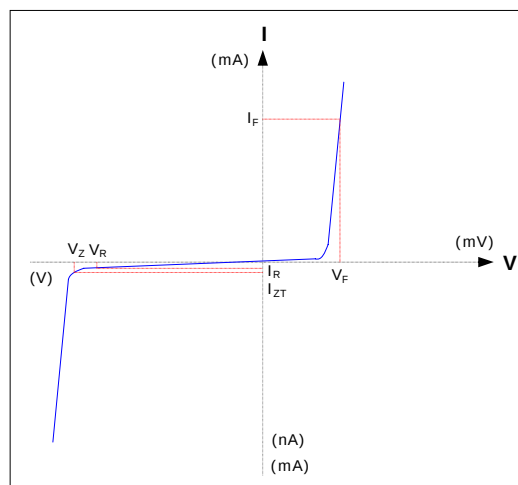
 V_F Forward Voltage = 1.5 V Maximum @ $I_F = 100$ mA for all types

Notes:

- The type numbers listed have zener voltage min/max limits as shown.
- 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

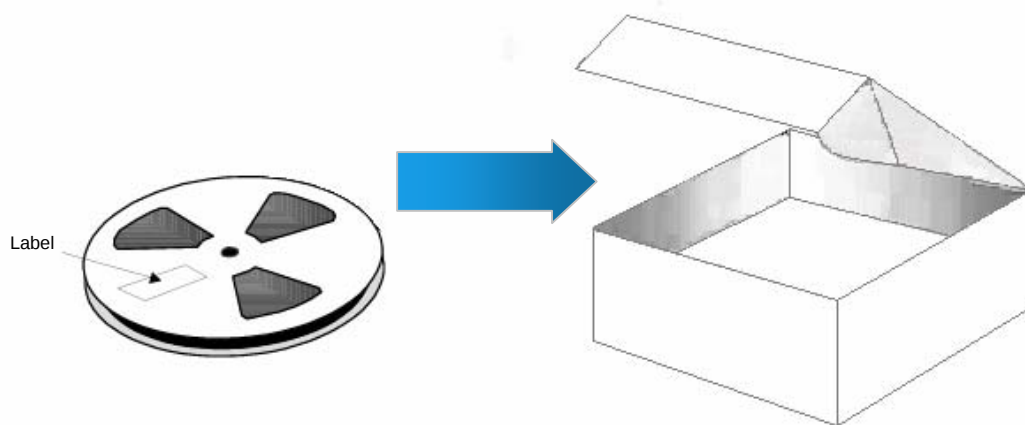
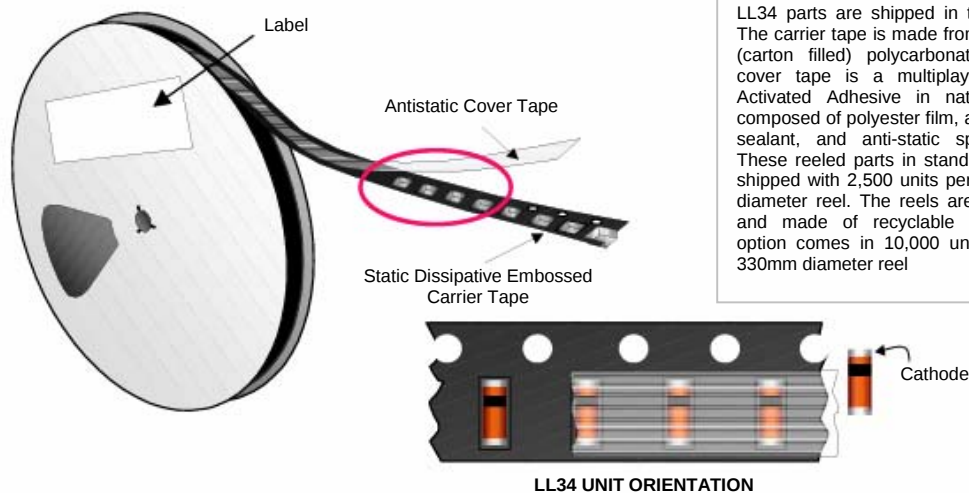
Device	Pack Option	Package	Quantity
TCBZV79Cxxx	7" Reel	Tape and Reel	2500
TCBZV79CR13	13" Reel	Tape and Reel	10,000
TCBZV79Cxxx	Others	(...contact Tak Cheong sales representatives)	

LL34 (Mini-MELF) Tape Packaging Standards

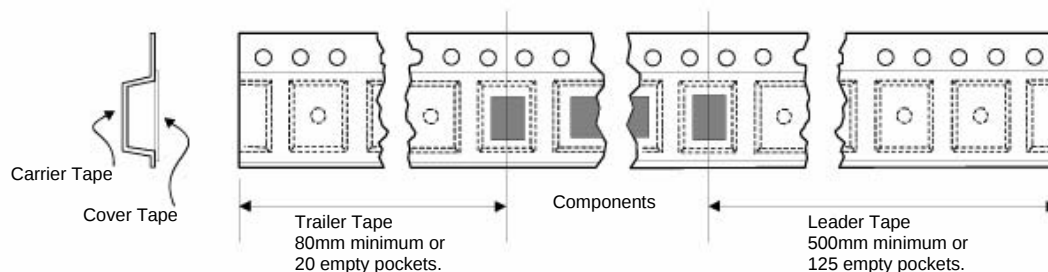
This standard practices for surface-mount tape packaging of leadless (Mini-MELF) components meets the requirements of EIA Standard RS-481-A.

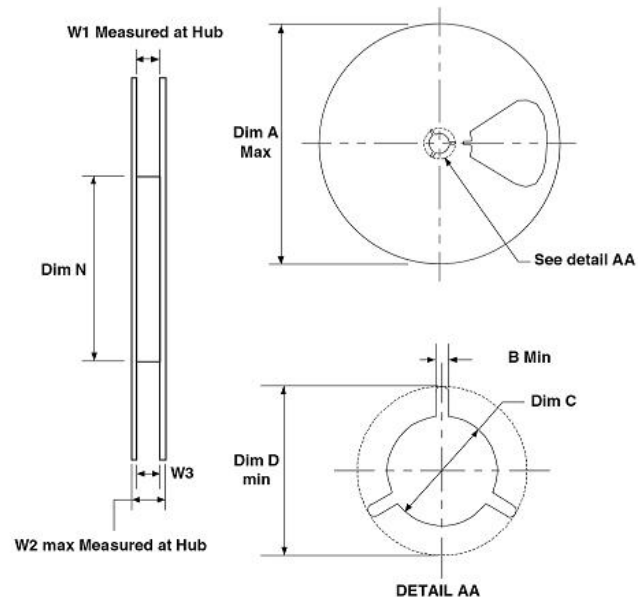
LL-34 (Mini-MELF) Tape & Reel Packaging Information

LL-34 Packaging Outline



LL-34 Leader and Trailer

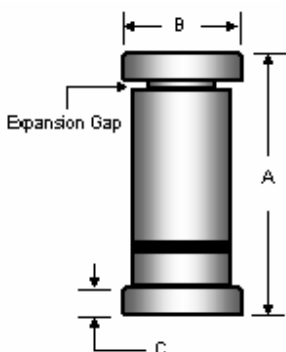


LL-34 (Mini-MELF) Tape & Reel Packaging Information
LL-34 Reel Outline


Dimensions are in millimeters

Tape Size	QTY Option	Dim A	Dim B	Dim C	Dim D	Dim N	W1	W2	W3
8mm	2,500	178	1.5	13	20.2	55	8.4	14.4	7.9 – 10.9
	10,000	330	1.5	13	20.2	100	8.4	14.4	7.9 – 10.9

Package Outline

Package	Case Outline																												
LL34	 Diagram of the LL34 package showing dimensions A, B, and C, and an Expansion Gap. <table><tr><th rowspan="3">DIM</th><th colspan="4">LL-34</th></tr><tr><th colspan="2">Millimeters</th><th colspan="2">Inches</th></tr><tr><th>Min</th><th>Max</th><th>Min</th><th>Max</th></tr><tr><td>A</td><td>3.302</td><td>3.505</td><td>0.130</td><td>0.138</td></tr><tr><td>B</td><td>1.397</td><td>1.499</td><td>0.055</td><td>0.059</td></tr><tr><td>C</td><td>0.350</td><td>0.500</td><td>0.014</td><td>0.020</td></tr></table>	DIM	LL-34				Millimeters		Inches		Min	Max	Min	Max	A	3.302	3.505	0.130	0.138	B	1.397	1.499	0.055	0.059	C	0.350	0.500	0.014	0.020
DIM	LL-34																												
	Millimeters		Inches																										
	Min	Max	Min	Max																									
A	3.302	3.505	0.130	0.138																									
B	1.397	1.499	0.055	0.059																									
C	0.350	0.500	0.014	0.020																									

Notes:

1. LL34 polarity denoted by a band.
2. 'Expansion Gap' has no relation to the location of polarity.