

500 mW LL-34 Hermetically Sealed Glass Zener Voltage Regulators



SURFACE MOUNT
LL34 (Mini-MELF)

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.

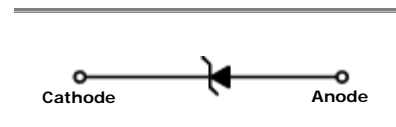
DEVICE MARKING DIAGRAM



Cathode Band Color : Blue

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) Nominal	I_{ZT} (mA)	$Z_{ZT} @ I_{ZT}$ (Ω) Max	$I_R @ V_R$ (μA) Max	V_R (Volts)
LLZ2V0	2.0	5	100	120	0.5
LLZ2V2	2.2	5	100	120	0.7
LLZ2V4	2.4	5	100	120	1
LLZ2V7	2.7	5	110	100	1
LLZ3V0	3.0	5	120	50	1
LLZ3V3	3.3	5	120	20	1
LLZ3V6	3.6	5	100	10	1
LLZ3V9	3.9	5	100	5	1
LLZ4V3	4.3	5	100	5	1
LLZ4V7	4.7	5	80	5	1
LLZ5V1	5.1	5	80	5	1.5
LLZ5V6	5.6	5	60	5	2.5
LLZ6V2	6.2	5	60	5	3
LLZ6V8	6.8	5	20	2	3.5
LLZ7V5	7.5	5	20	0.5	4
LLZ8V2	8.2	5	20	0.5	5
LLZ9V1	9.1	5	25	0.5	6
LLZ10V	10	5	30	0.2	7
LLZ11V	11	5	30	0.2	8
LLZ12V	12	5	30	0.2	9
LLZ13V	13	5	35	0.2	10
LLZ15V	15	5	40	0.2	11

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LLZ16V	16	5	40	0.2	12
LLZ18V	18	5	45	0.2	13
LLZ20V	20	5	45	0.2	15
LLZ22V	22	5	30	0.2	17
LLZ24V	24	5	35	0.2	19
LLZ27V	27	5	45	0.2	21
LLZ30V	30	5	55	0.2	23
LLZ33V	33	5	65	0.2	25
LLZ36V	36	5	75	0.2	27
LLZ39V	39	5	85	0.2	30
LLZ43V	43	5	90	0.2	33
LLZ47V	47	5	90	0.2	36
LLZ51V	51	5	110	0.2	39
LLZ56V	56	5	110	0.2	43

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

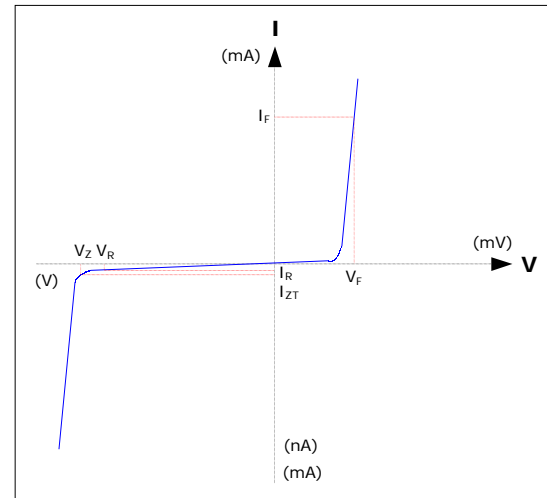
Notes:

- 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 Synsemi 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

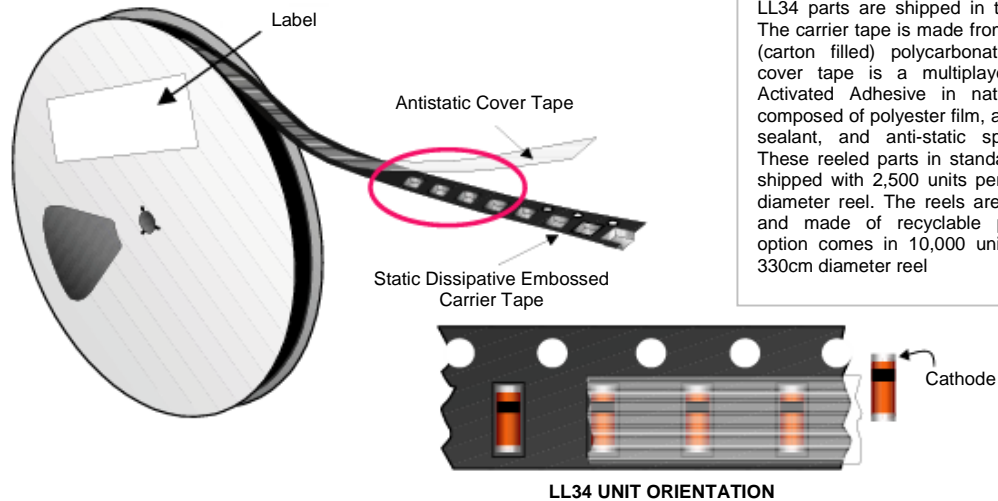


Ordering Information

Pack Option	Package	Quantity
7" Reel	Tape and Reel	2500
13" Reel	Tape and Reel	10,000

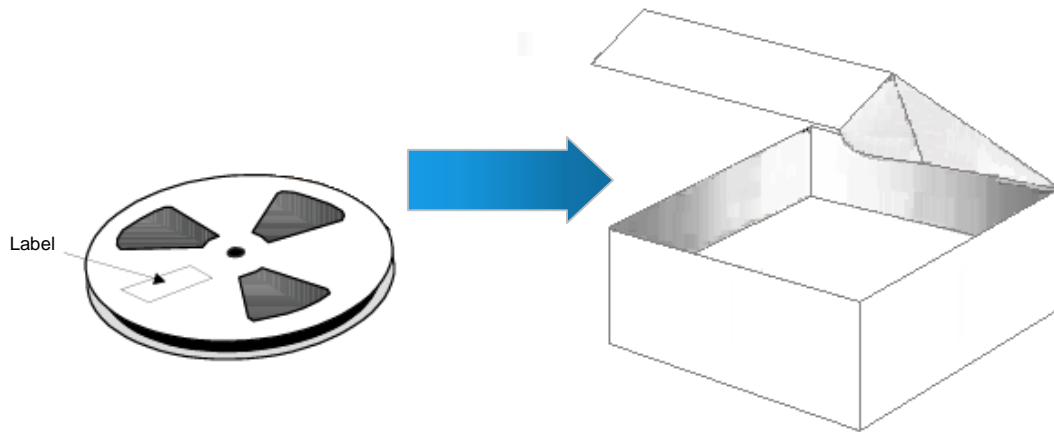
LL-34 (Mini-MELF) Tape & Reel Packaging Information

LL-34 Packaging Outline

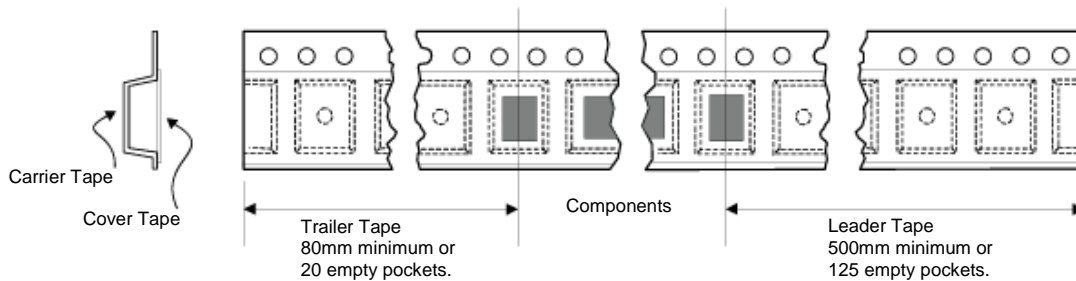


Packaging Description:

LL34 parts are shipped in tape and reel. The carrier tape is made from a dissipative (carton filled) polycarbonate resin. The cover tape is a multiplayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 2,500 units per 7" or 178cm diameter reel. The reels are blue in color and made of recyclable plastic. Other option comes in 10,000 units per 13" or 330cm diameter reel

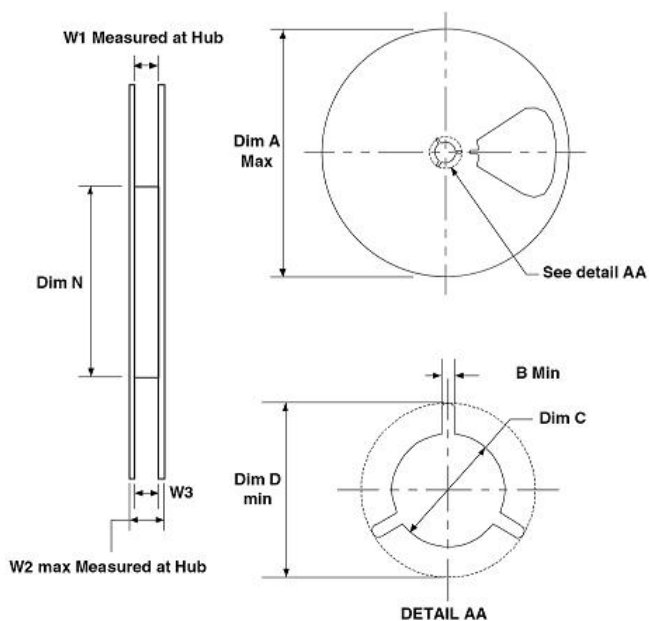


LL-34 Leader and Trailer



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

LL-34 Reel Outline



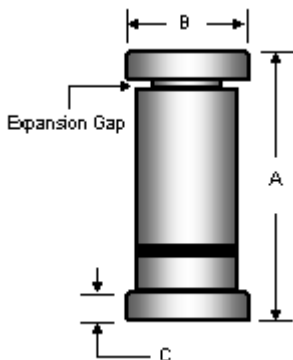
Dimensions are in millimeters

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



SYNSEMI SEMICONDUCTOR

Package Outline

Package	Case Outline																												
LL34	<div></div> <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
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Notes:

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