

TC1N4148  
TC1N4448  
TC1N914B

SEMICONDUCTOR

## 500 mW LL-34 Hermetically Sealed Glass Fast Switching Diodes



SURFACE MOUNT  
LL34

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

Symbol	Parameter	Value	Units
$P_D$	Power Dissipation	500	mW
$T_{STG}$	Storage Temperature Range	-65 to +200	$^\circ\text{C}$
$T_J$	Operating Junction Temperature	+175	$^\circ\text{C}$
$W_{IV}$	Working Inverse Voltage	75	V
$I_O$	Average Rectified Current	150	mA
$I_{FM}$	Non-repetitive Peak Forward Current	450	mA
$I_{FSURGE}$	Peak Forward Surge Current	2	A

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

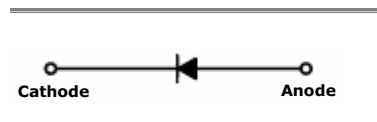
DEVICE MARKING DIAGRAM



Cathode Band Color : Black

### Specification Features:

- Fast Switching Device ( $T_{RR} < 4.0$  nS)
- 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
- 1<sup>st</sup> band indicates negative polarity



ELECTRICAL SYMBOL

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

Symbol	Parameter	Test Condition	Limits		Unit
			Min	Max	
$B_V$	Breakdown Voltage	$I_R = 100\mu\text{A}$	100		Volts
		$I_R = 5\mu\text{A}$	75		
$I_R$	Reverse Leakage Current	$V_R = 20\text{V}$		25	nA
		$V_R = 75\text{V}$		5	$\mu\text{A}$
$V_F$	Forward Voltage	TCLL4448, TCLL914B $I_F = 5\text{mA}$	0.62	0.72	Volts
		TCLL4148 $I_F = 10\text{mA}$		1.0	
		TCLL4448, TCLL914B $I_F = 100\text{mA}$		1.0	
$T_{RR}$	Reverse Recovery Time	$I_F = 10\text{mA}$ , $V_R = 6\text{V}$ $R_L = 100\Omega$ $I_{RR} = 1\text{mA}$		4	nS
$C$	Capacitance	$V_R = 0\text{V}$ , $f = 1\text{MHz}$		4	pF

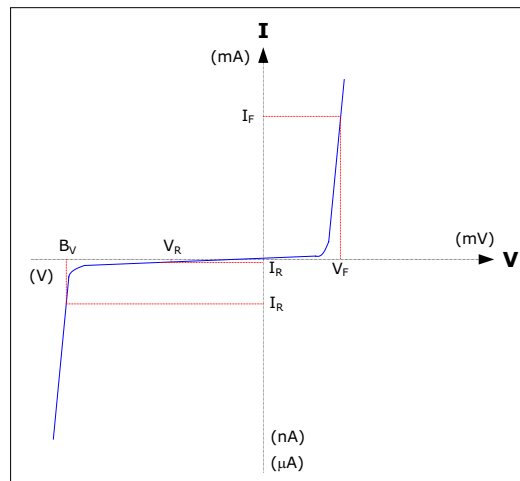
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### Electrical Symbol Definition

Symbol	Parameter
$B_V$	Breakdown Voltage @ $I_R$
$I_R$	Reverse Leakage Current @ $V_R$
$V_R$	Reverse Voltage
$I_F$	Forward Current
$V_F$	Forward Voltage @ $I_F$

### Typical Characteristics



### Ordering Information

Device	Pack Option	Package	Quantity
TCLLxxxx	7" Reel	Tape and Reel	2,500
TCLLxxxxR13	13" Reel	Tape and Reel	10,000
TCLLxxxx	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.

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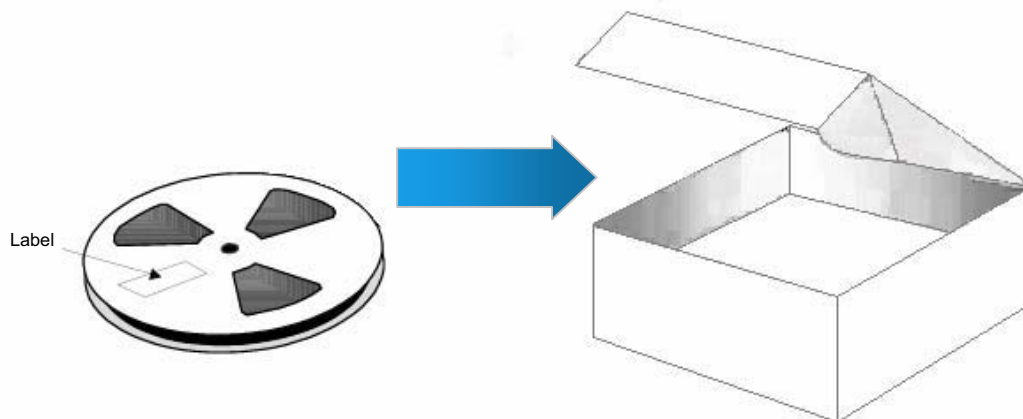
**LL-34 (Mini-MELF) Tape & Reel Packaging Information**

**LL-34 Packaging Outline**

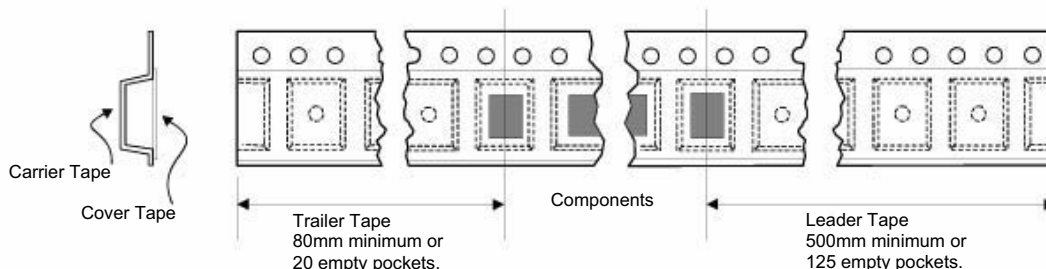


**Packaging Description:**

LL34 parts are shipped in tape and reel. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer 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 178mm diameter reel. The reels are blue in color and made of recyclable plastic. Other option comes in 10,000 units per 13" or 330mm diameter reel



**LL-34 Leader and Trailer**

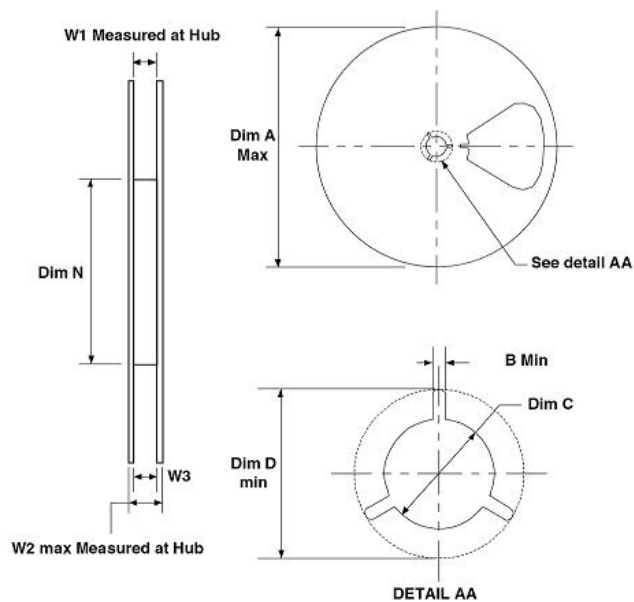


TC1N4148  
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**LL-34 (Mini-MELF) Tape & Reel Packaging Information**

LL-34 Reel Outline



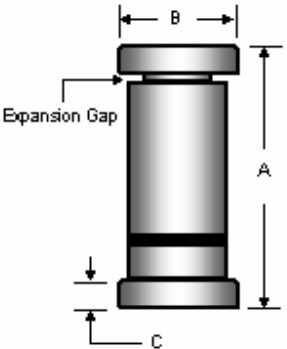
Dimensions are in millimeters

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

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**Package Outline**

Package	Case Outline																												
LL34	<div style="display: flex; align-items: center; justify-content: space-around;">  <table border="1" data-bbox="718 616 1412 907"> <thead> <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> </thead> <tbody> <tr> <td><b>A</b></td> <td>3.302</td> <td>3.505</td> <td>0.130</td> <td>0.138</td> </tr> <tr> <td><b>B</b></td> <td>1.397</td> <td>1.499</td> <td>0.055</td> <td>0.059</td> </tr> <tr> <td><b>C</b></td> <td>0.350</td> <td>0.500</td> <td>0.014</td> <td>0.020</td> </tr> </tbody> </table> </div>	DIM	LL-34				Millimeters		Inches		Min	Max	Min	Max	<b>A</b>	3.302	3.505	0.130	0.138	<b>B</b>	1.397	1.499	0.055	0.059	<b>C</b>	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.