

### **Lamp Type LED - 5mm Round**

Synonymous with function and performance, the 5mm Round LED has superior performance in outdoor applications due to its well-defined radiation pattern and wide viewing angle. These lamps are made with an advanced optical grade epoxy, offering superior high temperature and high moisture resistance performance in outdoor signal and sign applications

### **Features:**

- > High brightness LED lamp.
- > Narrow viewing angle; 30°.
- > Superior resistance to moisture.
- > Suitable for TTW soldering.

### **Applications:**

- > Full color signs
- > Outdoor displays/signs



**Optical Characteristics at Tj=25°C**

| Part Ordering Number | Color         | Viewing Angle° | Luminous Intensity @ IF = 20mA IV (mcd) |        |        |
|----------------------|---------------|----------------|---|--------|--------|
|                      |               |                | Min.                                    | Typ.   | Max.   |
| L5R-T3000-YZ2-1      | Red, 625nm    | 30             | 2850.0                                  | 4500.0 | 7150.0 |
| L5A-T3000-YZ2-1      | Amber, 615nm  | 30             | 2850.0                                  | 4500.0 | 7150.0 |
| L5Y-T3000-YZ2-1      | Yellow, 588nm | 30             | 2850.0                                  | 4500.0 | 7150.0 |

NOTE

1. Luminous intensity is measured with an accuracy of ± 15%.
2. Wavelength binning is carried for all units as per the wavelength-binning table. Only one wavelength group is allowed for each pack.

**Electrical Characteristics at Tj=25°C**

| Part Number | Vf @ If = 20mA |          |          | Vr @ Ir = 10uA |
|-------------|----------------|----------|----------|----------------|
|             | Min. (V)       | Typ. (V) | Max. (V) | Min. (V)       |
| L5x-T3000   | 2.0            | 2.2      | 2.7      | 12             |

Forward voltages are measure using a current pulse of 1 ms and with an accuracy of ± 0.1V.

**Absolute Maximum Ratings**

|  | Maximum Value | Unit |
|--|---------------|------|
| DC forward current                                 | 50            | mA   |
| Peak pulse current; (tp ≤ 10µs, Duty cycle = 0.10) | 200           | mA   |
| Reverse voltage ; Ir (max) = 10µA.                 | 12            | V    |
| ESD threshold (HBM)                                | 2000          | V    |
| LED junction temperature                           | 120           | °C   |
| Operating temperature                              | -40 ... +100  | °C   |
| Storage temperature                                | -40 ... +100  | °C   |
| Power dissipation (at room temperature)            | 130           | mW   |

**Wavelength Grouping at Tj=25°C**

| Color       | Group | Wavelength distribution (nm) |
|-------------|-------|------------------------------|
| L5R; Red    | Full  | 620 - 630                    |
| L5A; Amber  | Full  | 610 - 621                    |
|             | W     | 610 - 615                    |
|             | X     | 615 - 621                    |
| L5Y; Yellow | Full  | 582 - 594                    |
|             | W     | 582 - 585                    |
|             | X     | 585 - 588                    |
|             | Y     | 588 - 591                    |
|             | Z     | 591 - 594                    |

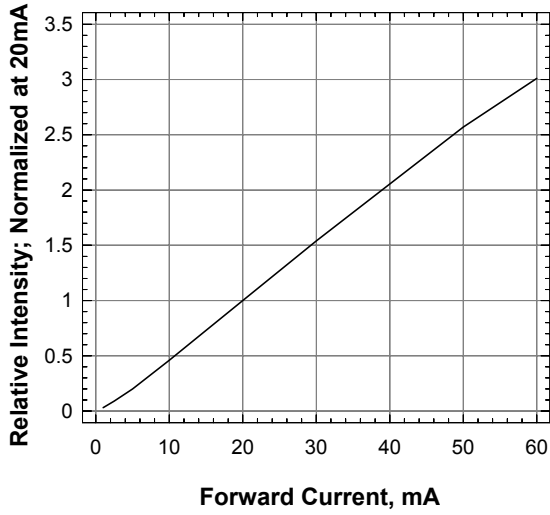
Dominant wavelength is measured with an accuracy of ± 1 nm.

**Luminous Intensity Group at Tj=25°C**

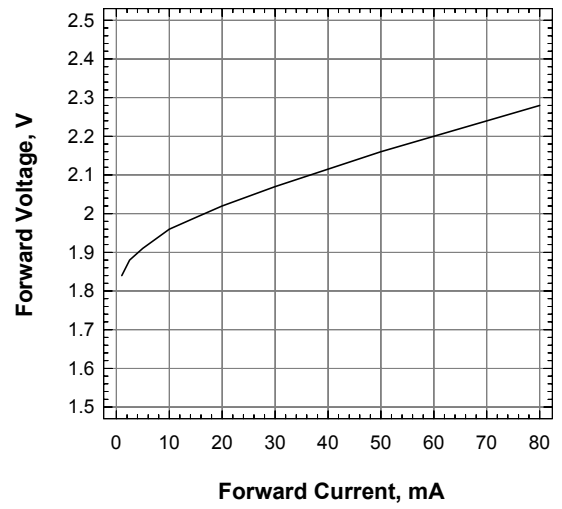
| Brightness Group | Luminous Intensity @ IV (mcd) |
|------------------|-------------------------------|
| Y1               | 2850.0...3550.0               |
| Y2               | 3550.0...4500.0               |
| Z1               | 4500.0...5600.0               |
| Z2               | 5600.0...7150.0               |

Luminous intensity is measured with an accuracy of ± 15%.

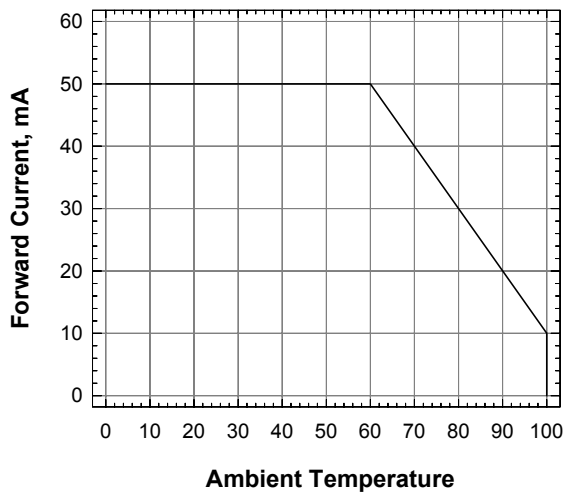
**Relative Luminous Intensity Vs Forward Current**



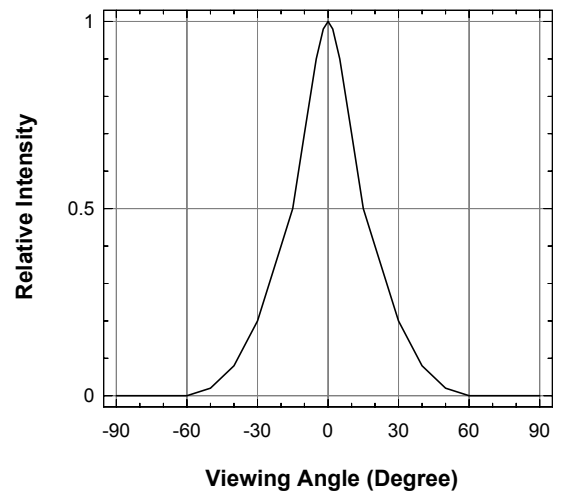
**Forward Current Vs Forward Voltage**



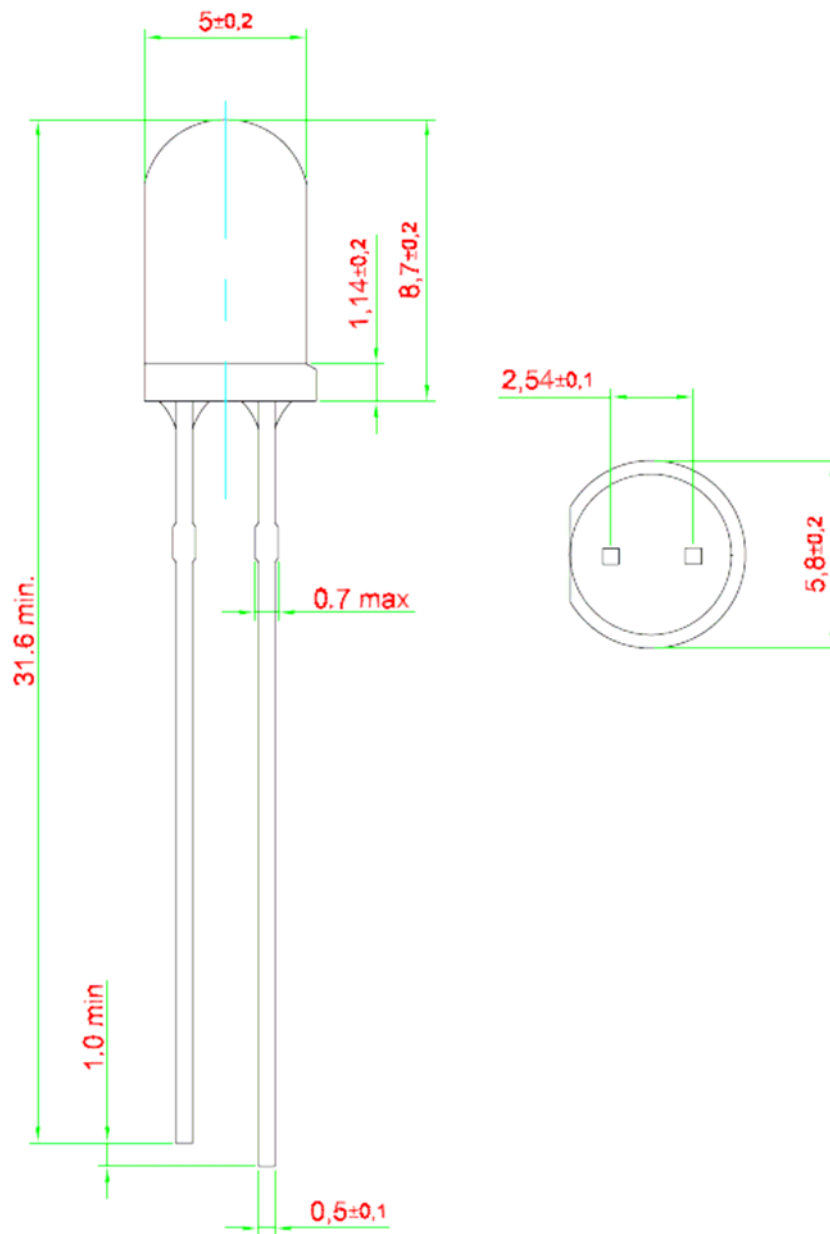
**Maximum Current Vs Temperature**



**Radiation Pattern**

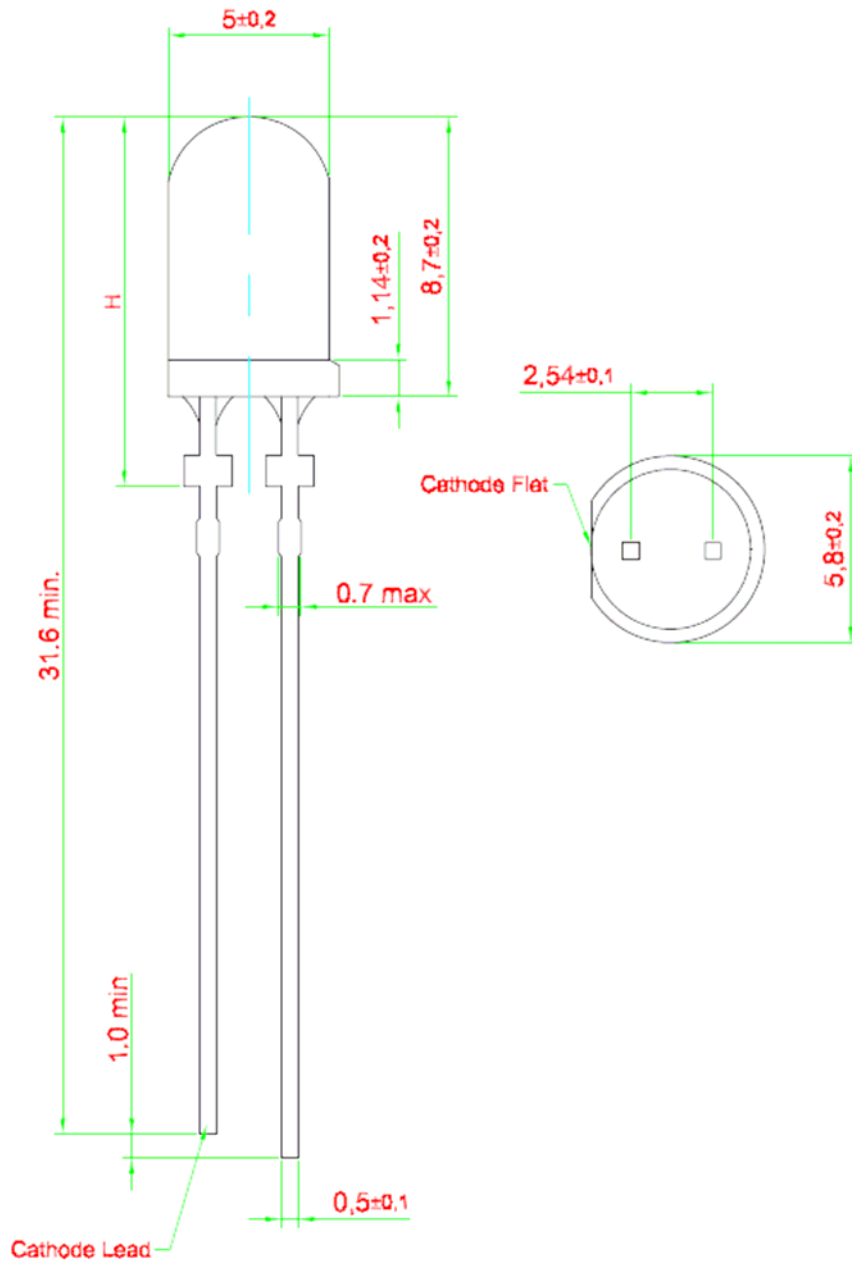


**5mm Lamp • TS AlInGaP : High Brightness Package Outlines**



Epoxy meniscus may extend 1.5mm max. down the LED

**5mm Lamp • TS AllnGaP : High Brightness Package Outlines**



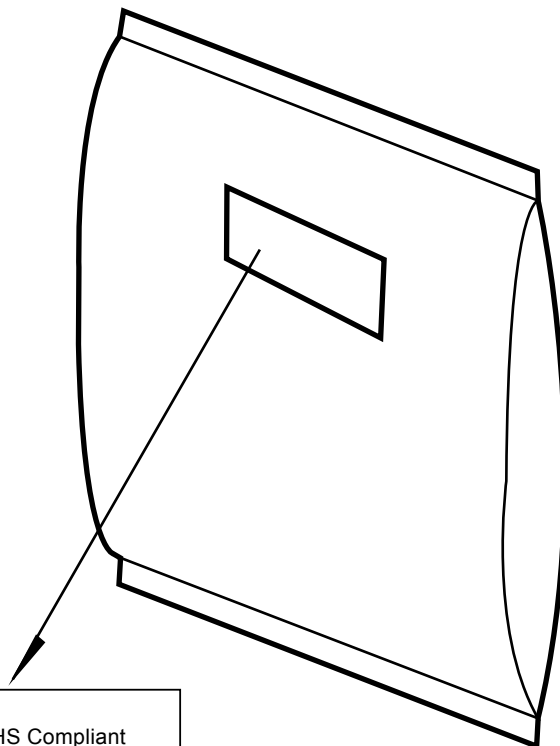
Epoxy meniscus may extend 1.5mm max. down the LED

Parts with the stand-off option will be defined as L5x-TxxxS-xxxx-1  
 Option with stand-off - Parts with 30° viewing angle; H = 12.0mm ± 0.5mm




**Packaging Specification**

**1. Loose pack of 500pcs/pack: L5x-Txxxx-xxxx-x-x-0**

|               | Average 1pc 5mm Lamp | 1 completed pack (500pcs) |
|---------------|----------------------|---------------------------|
| Weight (gram) | 0.29                 | 155 ± 10                  |

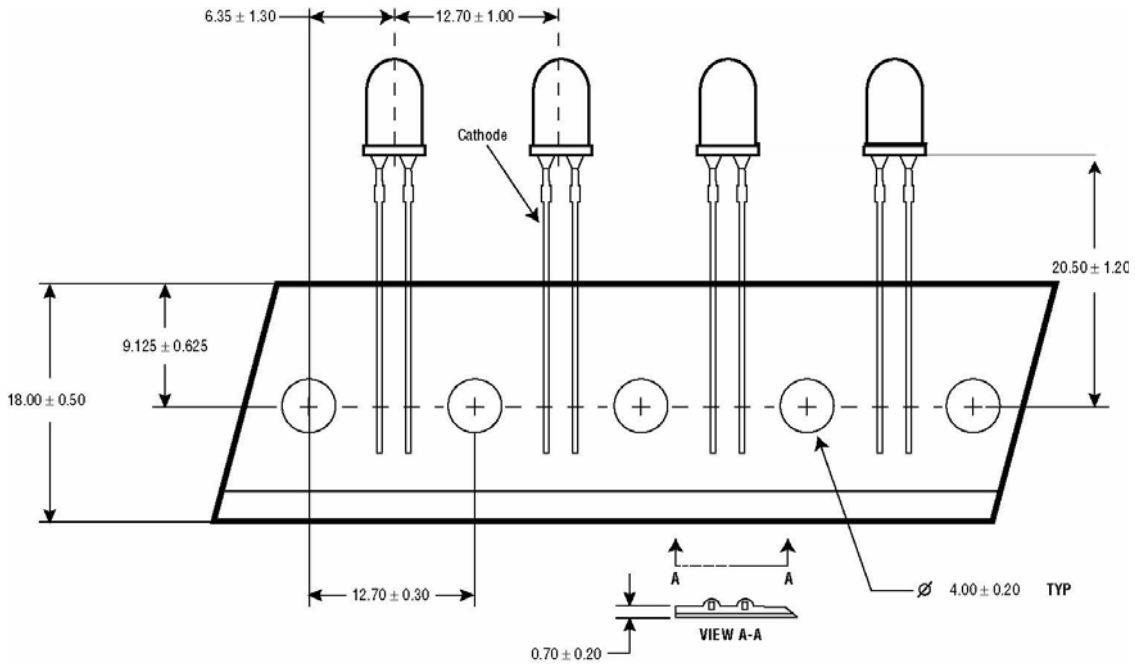


Barcode label

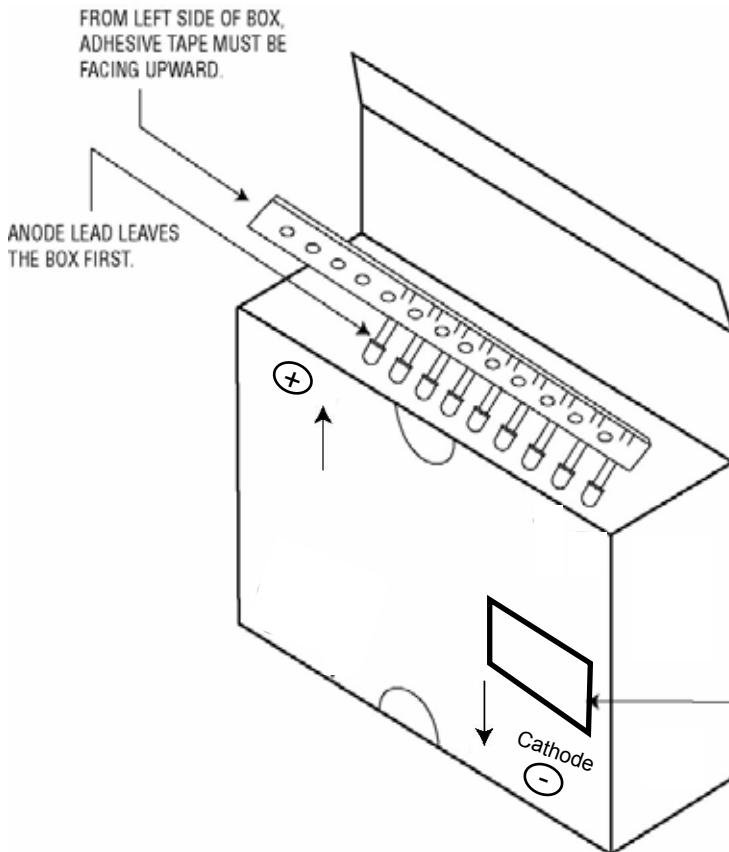
|   |   |
|---|---|
| <b>DOMINANT</b>   | ROHS Compliant  |
| LOT NO : lotno  |   |
|  |   |
| PART NO : partno  | PB Free   |
| QTY : product quantity per reel   | S/N : serial no   |
|   | D/C: date code  |
| GROUP : group   |  |
|  |   |

**Packaging Specification**

**2. Ammpack: L5x-Txxxx-xxxx-x-x-A**



| Average 1pc 5mm Lamp (g) | Box Dimensions (mm) | Empty Box Weight (kg) | Quantity / Box (pcs) | 1 Completed Box With Units (kg) |
|--------------------------|---------------------|-----------------------|----------------------|---------------------------------|
| 0.29                     | 335 x 235 x 48      | 0.14                  | 2,000                | 0.95 ± 10                       |



Barcode label

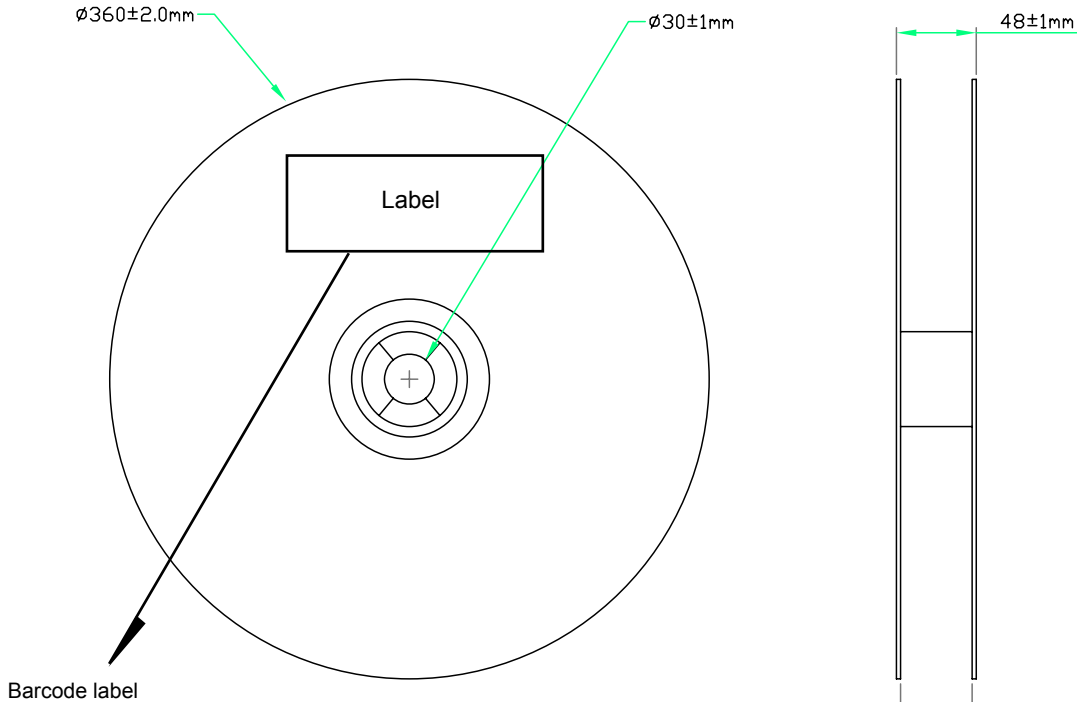
|                                 |                 |                |
|---------------------------------|-----------------|----------------|
| <b>DOMINANT</b>                 |                 | ROHS Compliant |
| LOT NO : lotno                  |                 |                |
|                                 |                 |                |
| PART NO : partno                |                 | PB Free        |
| QTY : product quantity per reel | S/N : serial no | D/C: date code |
| GROUP : group                   |                 |                |
|                                 |                 |                |




LABEL ON THIS SIDE OF BOX



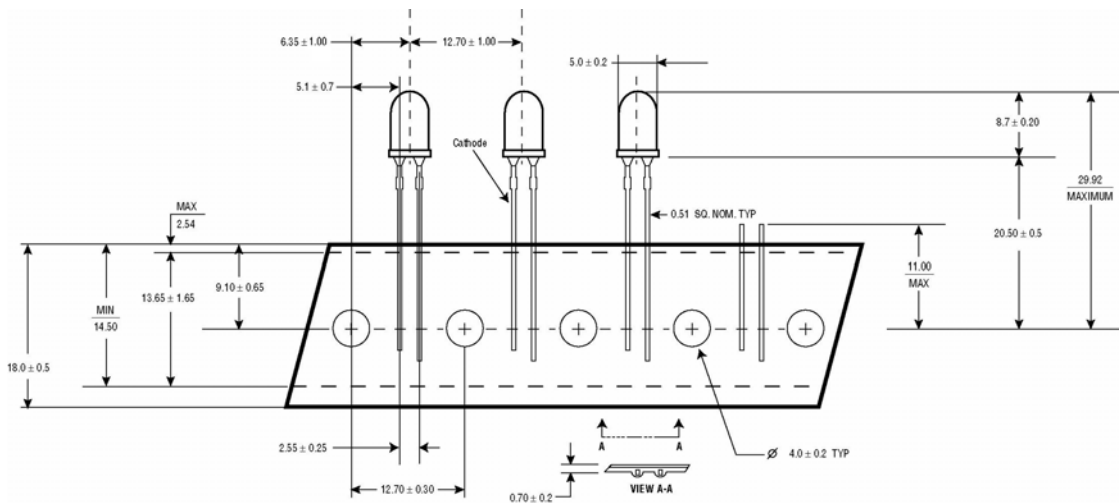
**Packaging Specification**

**3. Reel: L5x-Txxxx-xxxx-x-x-T**



|   |   |
|---|---|
| <b>DOMINANT</b>   | ROHS Compliant  |
| LOT NO : lotno  |   |
|  |   |
| PART NO : partno  | PB Free   |
| QTY : product quantity per reel   | S/N : serial no   |
|   | D/C : date code   |
| GROUP : group   |  |
|  |   |

| Average 1pc 5mm Lamp (g) | Empty Reel Weight (kg) | Quantity / Reel (pcs) | 1 Completed Reel (kg) |
|--------------------------|------------------------|-----------------------|-----------------------|
| 0.29                     | 0.39                   | 1,300                 | 0.95 ± 10             |



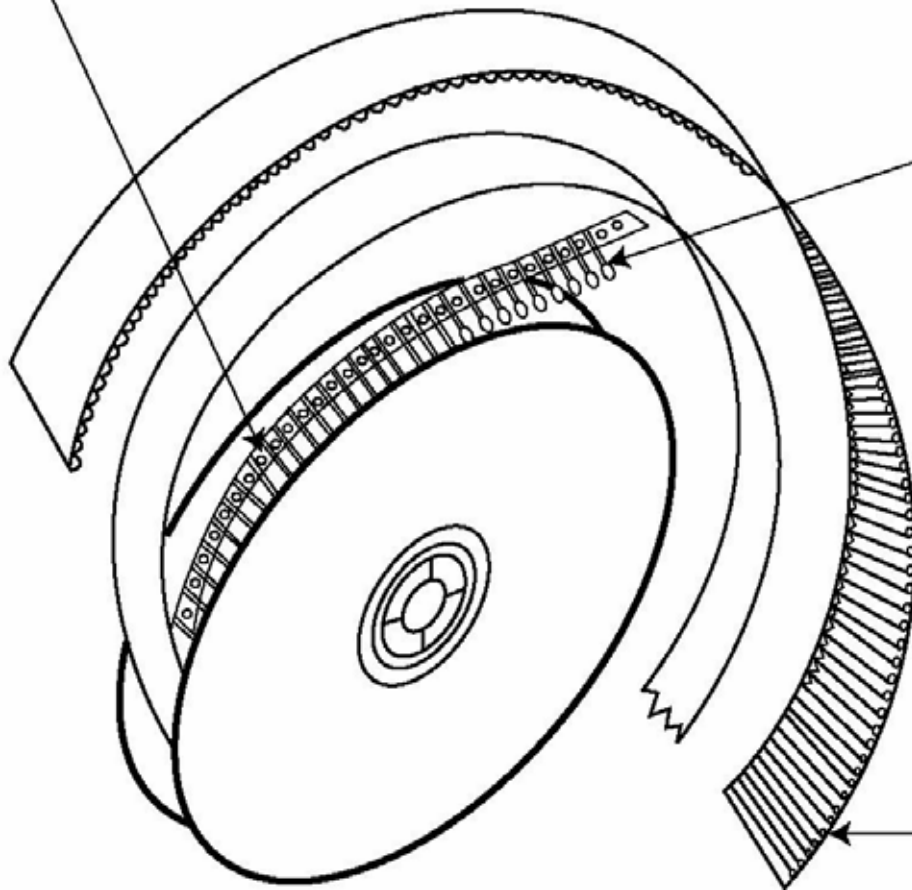
**Packaging Specification**

Adhesive Tape Must  
Be Facing Towards  
The Outside Of The Reel

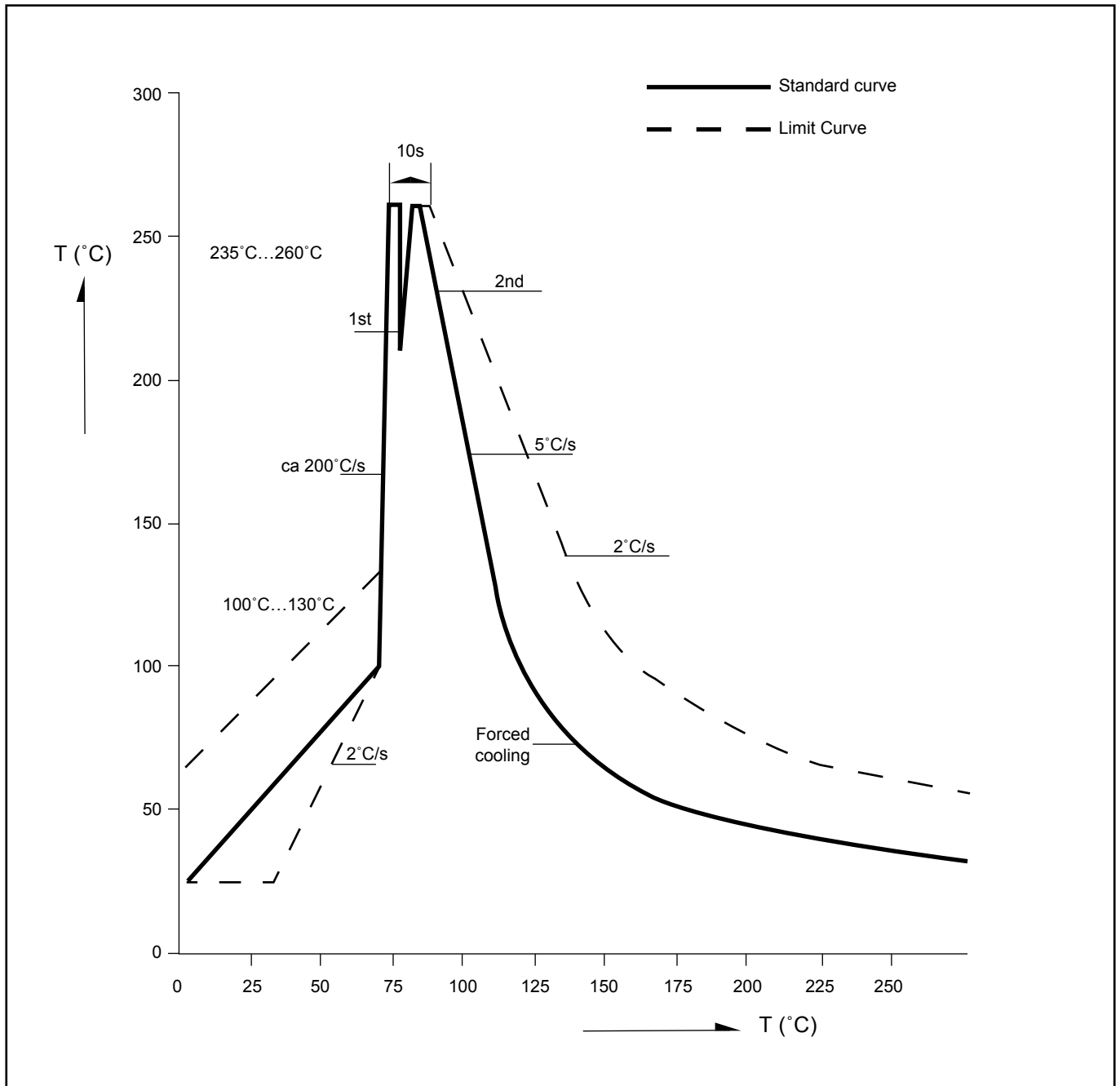
Reeling Orientation  
Clockwise

Anode Lead  
Leaves The  
Reel First

Protective  
Cardboard



**Recommended TTW Soldering Profile (acc. to CECC 00802)**



**Revision History**

| Page | Subjects                        | Date of Modification |
|------|---------------------------------|----------------------|
| -    | Initial Release                 | 05 Dec 2008          |
| 2    | Add new PartNo: L5A-T3000-YZ2-1 | 14 Jan 2009          |
| -    | Update company name             | 01 Jul 2010          |
|      |                                 |                      |
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DOMINANT Opto Technologies is a dynamic Malaysian Corporation that is among the world's leading SMT LED Manufacturers. An excellence – driven organization, it offers a comprehensive product range for diverse industries and applications. Featuring an internationally certified quality assurance acclaim, DOMINANT's extra bright LEDs are perfectly suited for various lighting applications in the automotive, consumer and communications as well as industrial sectors. With extensive industry experience and relentless pursuit of innovation, DOMINANT's state-of-art manufacturing, research and testing capabilities have become a trusted and reliable brand across the globe. More information about DOMINANT Opto Technologies can be found on the Internet at <http://www.dominant-semi.com>.

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