

# PRODUCT SPECIFICATION

*Part Number*  
**PL00134-WCYB0611**

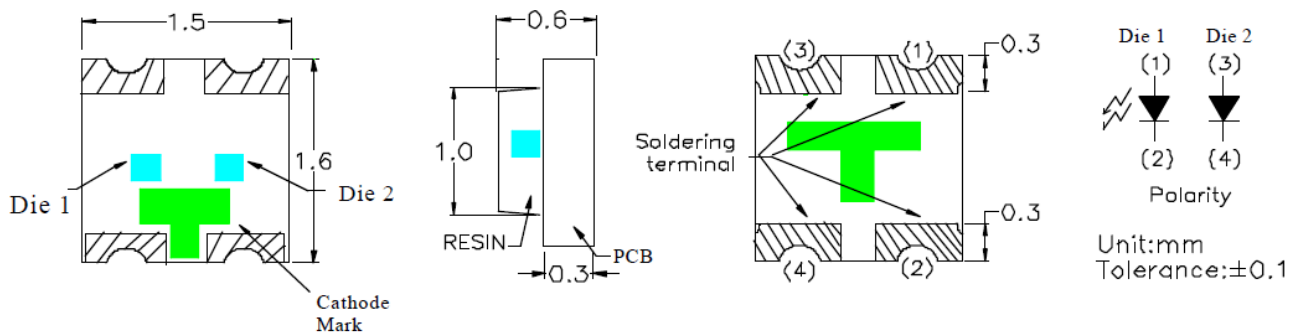
## Details

- Bi-Color Ultra-Bright Surface Mount LED
- 1.6 mm x 1.5mm x 0.6 mm, 0605 package
- Emitting color: Yellow and Blue
- AlInGaP or InGaN chip material
- 4,000 Piece Reels

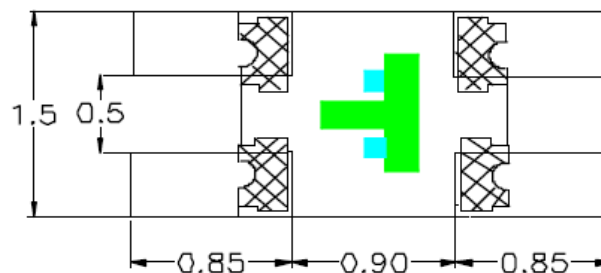
## Features

- RoHS Compliant
- Compatible with automatic placement equipment
- High Luminous Intensity
- Compatible with reflow solder process

## Mechanical Dimensions



## Recommended Soldering Pad Dimensions



### Notes:

1. Dimensions in millimeters unless otherwise noted
2. Specifications subject to change without notice



### Device Selection Guide

| Model Number     | Chip     |                     | Lens Type   |
|------------------|----------|---------------------|-------------|
|                  | Material | Emitting Color      |             |
| PL00134-WCYB0611 | AlInGaP  | Ultra-Bright Yellow | Water Clear |
|                  | InGaN    | Ultra-Bright Blue   |             |

### Absolute Maximum Ratings at Ta=25 °C

| Parameter   | Symbol | Maximum | Unit  |
|---|--------|---------|-------|
| Peak Forward Current (duty cycle 1/10, 0.1ms Pulse Width) | IFP    | 100     | mA    |
| Derating Liner from 25°C                                  | --     | 0.4     | mA/°C |
| Reverse Voltage   | VR     | 5       | V     |
| Operating Temperature                                     | Topr   | -40~+85 | °C    |
| Storage Temperature                                       | Tstg   | -40~+85 | °C    |

### Electrical and Optical Characteristics at Ta=25 °C

| Chip                   |            |            | Absolute Max. Ratings |            |               | Electro-optical Data<br>(@ 20mA) |      |          |      | Viewing<br>Angle<br>201/2 (deg) |
|------------------------|------------|------------|-----------------------|------------|---------------|----------------------------------|------|----------|------|---------------------------------|
| Emitting<br>Color      | λP<br>(nm) | λD<br>(nm) | Δλ<br>(nm)            | PD<br>(mW) | IFmax<br>(mA) | VF (V)                           |      | IV (mcd) |      | 120°                            |
| Ultra-Bright<br>Yellow | 592        | 590        | 15                    | 78         | 30            | Typ.                             | Max. | Min.     | Typ. |                                 |
|                        |            |            |                       |            |               | 2.1                              | 2.6  | 45       | 72   |                                 |
| Blue                   | 468        | 470        | 25                    | 84         | 20            | 3.3                              | 3.8  | 45       | 72   |                                 |

Notes: Tolerance Luminous intensity ±15% and Wavelength (λD) ±2nm

### *Luminous Intensity Bins*

| Test Condition: @20mA    |               |               |
|--------------------------|---------------|---------------|
| Bin Code<br>Y06 (Yellow) | Min. Iv (mcd) | Max. Iv (mcd) |
| J                        | 45            | 72            |
| K                        | 72            | 115           |

| Test Condition: @20mA  |               |               |
|------------------------|---------------|---------------|
| Bin Code<br>B11 (Blue) | Min. Iv (mcd) | Max. Iv (mcd) |
| J                      | 45            | 72            |
| K                      | 72            | 115           |
| L                      | 115           | 180           |

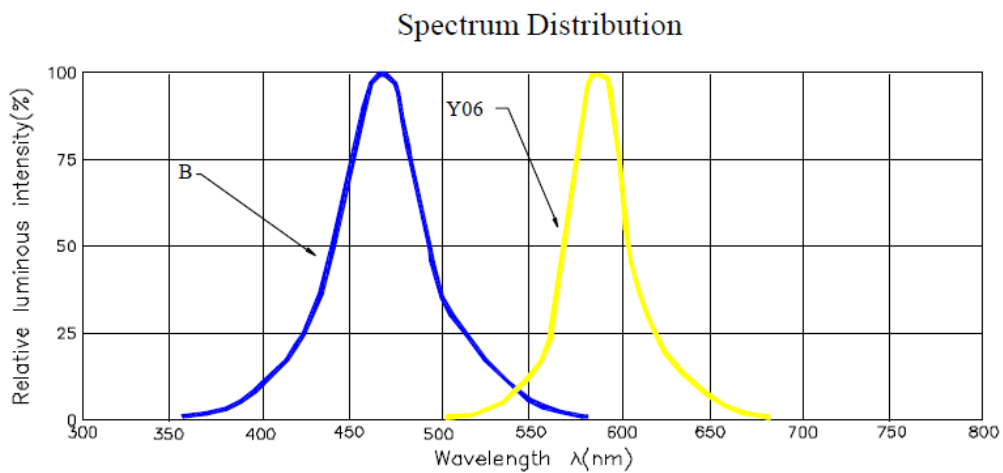
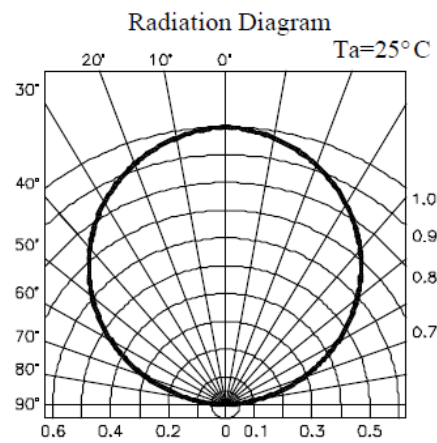
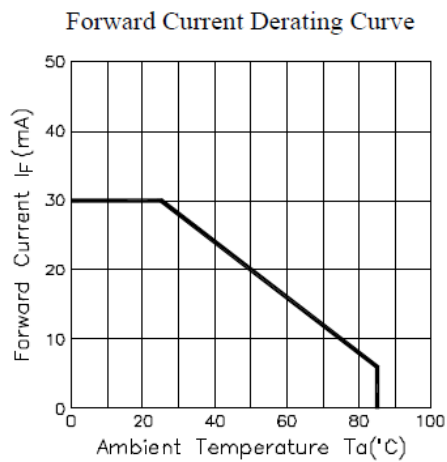
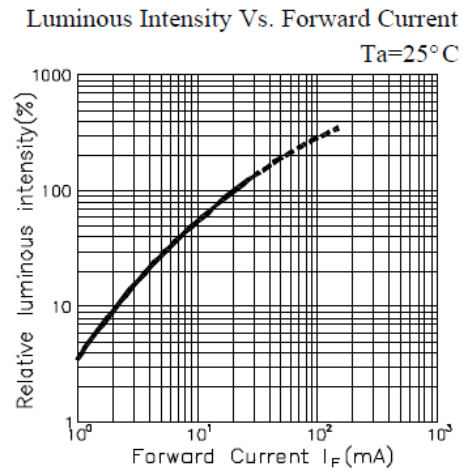
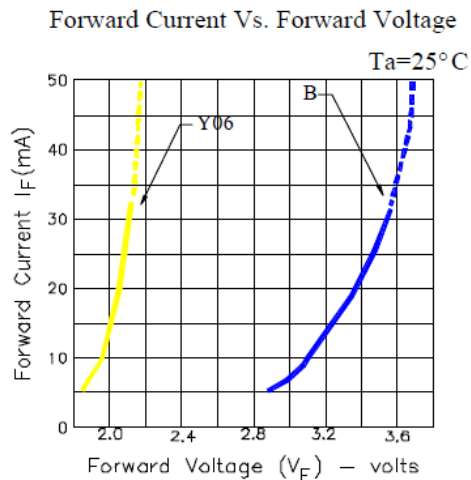
### *Dominant Wavelength Bins*

| Test Condition: @20mA    |                     |                     |
|--------------------------|---------------------|---------------------|
| Bin Code<br>Y06 (Yellow) | $\lambda$ Dmin (nm) | $\lambda$ Dmax (nm) |
| 2                        | 585                 | 588                 |
| 3                        | 588                 | 591                 |
| 4                        | 591                 | 594                 |

| Test Condition: @20mA  |                     |                     |
|------------------------|---------------------|---------------------|
| Bin Code<br>B11 (Blue) | $\lambda$ Dmin (nm) | $\lambda$ Dmax (nm) |
| 1                      | 465                 | 470                 |
| 2                      | 470                 | 475                 |

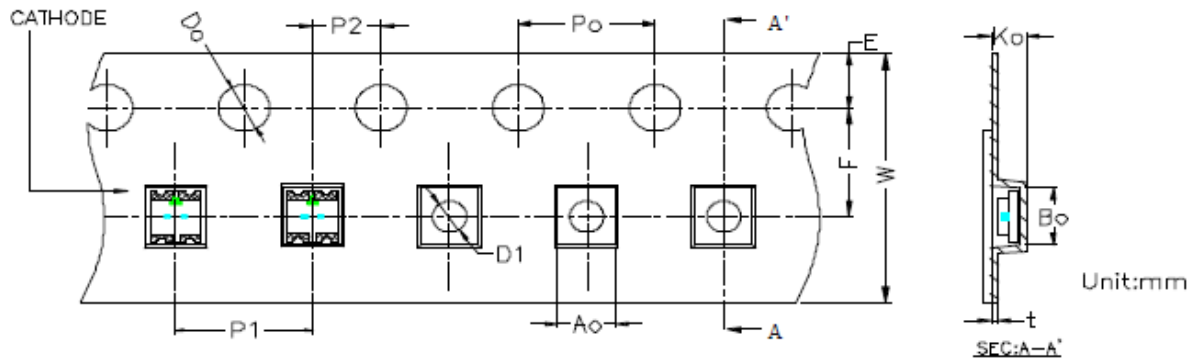


### Typical Electrical / Optical Characteristic Curves

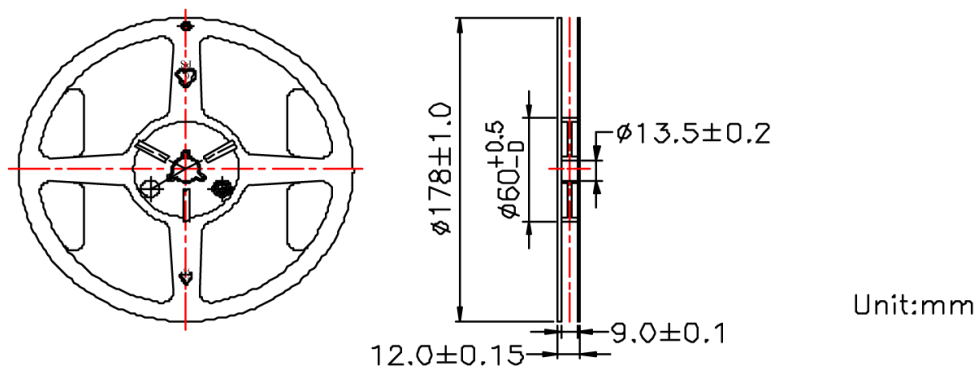


### Tape Specifications

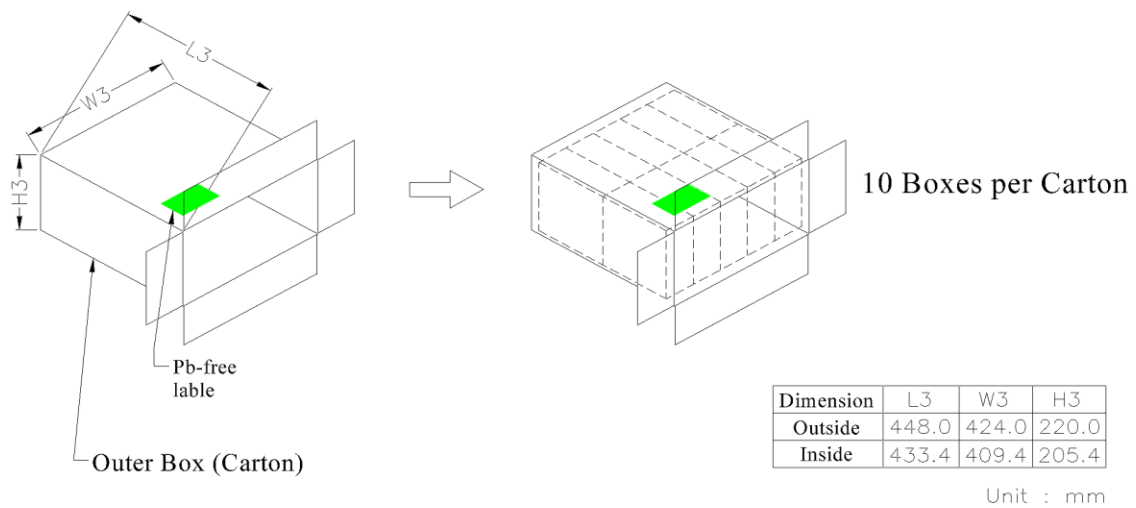
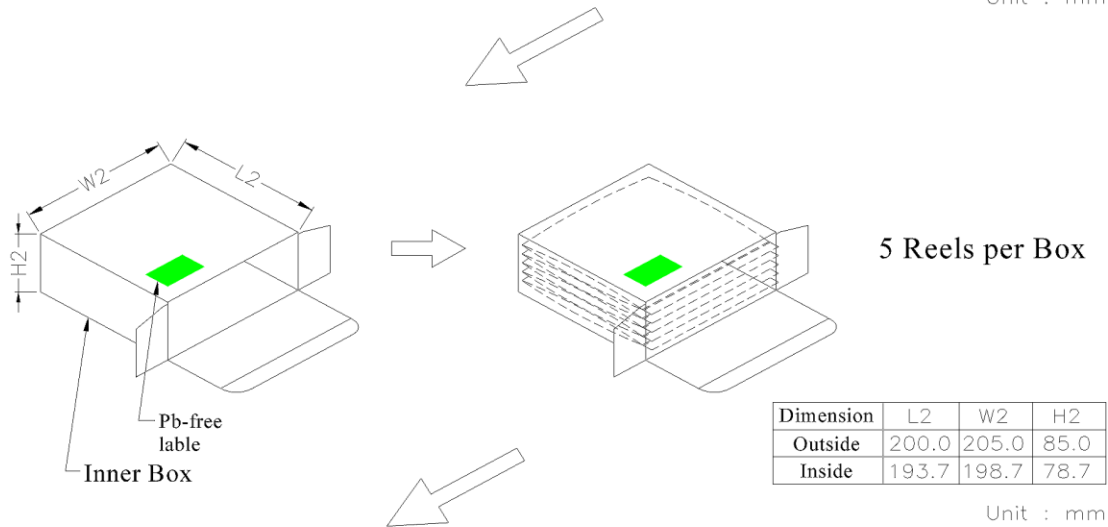
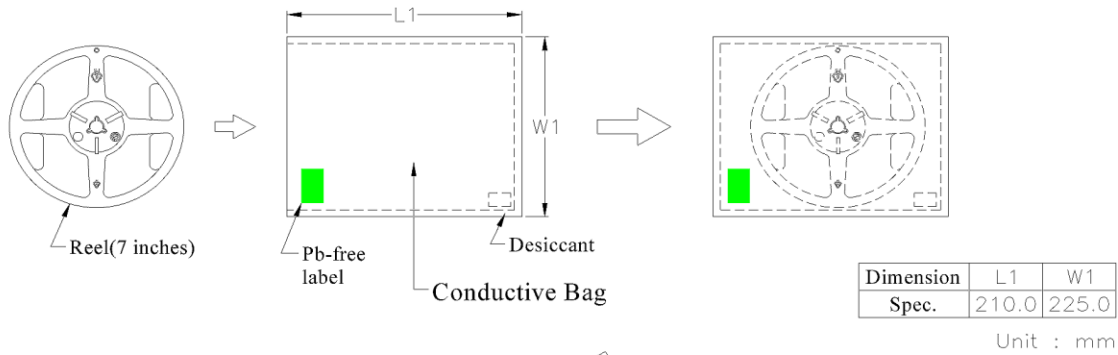
| Packing Size |      |       |       |       |  |  |       |       |       |       |       |       |       |
|--------------|------|-------|-------|-------|--|--|-------|-------|-------|-------|-------|-------|-------|
| Item         | W    | P1    | E     | F     | Do   | D1   | PO    | 10PO  | P2    | Ao    | Bo    | Ko    | t     |
| Spec.        | 8.00 | 4.00  | 1.75  | 3.50  | 1.50   | 1.00   | 4.00  | 40.00 | 2.00  | 1.65  | 1.75  | 0.70  | 0.229 |
| Tolerance    | ±0.3 | ±0.10 | ±0.10 | ±0.05 | $\begin{smallmatrix} +0.10 \\ -0.00 \end{smallmatrix}$ | $\begin{smallmatrix} +0.25 \\ -0.00 \end{smallmatrix}$ | ±0.05 | ±0.20 | ±0.05 | ±0.05 | ±0.05 | ±0.05 | ±0.02 |



### Reel Specifications



## Packaging



### Precautions for Use

- The Chip-LED Taping is much smaller than lead frame type components, thus enable smaller board size, higher packing density, Yellowuced storage space and finally smaller equipment to be obtained.
- Besides, lightweight makes them ideal for miniature application, etc.

| No. | Item                              | Test Conditions                                      | Test<br>hr/cycle/time | Sample<br>Q'ty | Ac / Re |
|-----|-----------------------------------|--|-----------------------|----------------|---------|
| 1   | Solder Heat                       | TEMP : 260°C±5°C ; 10±1 sec                          | 2 times               | 30 pcs         | 0 / 1   |
| 2   | Solderbility Test ※               | TEMP : 235°C±5°C ; 3±1 sec                           | 1 time                | 5 pcs          | 0 / 1   |
| 3   | Temperature Cycle                 | H : +85°C 30min.<br>∫ 5min.<br>L : -40°C 30min.      | 100 cycles            | 20 pcs         | 0 / 1   |
| 4   | Thermal Shock                     | H : +85°C 5min.<br>∫<br>L : -40°C 5min.              | 50 cycles             | 20 pcs         | 0 / 1   |
| 5   | High Temperature Storage          | TEMP : 85°C  | 1000 hrs              | 20 pcs         | 0 / 1   |
| 6   | Low Temperature Storage           | TEMP : -40°C   | 1000 hrs              | 20 pcs         | 0 / 1   |
| 7   | DC Operating Life                 | I <sub>F</sub> = I <sub>Fmax</sub>                   | 1000 hrs              | 20 pcs         | 0 / 1   |
| 8   | High Temperature<br>High Humidity | 85°C / 90~95%R.H.                                    | 1000 hrs              | 20 pcs         | 0 / 1   |
| 9   | Shocking test                     | 100~2000Hz ; 98.1m/s <sup>2</sup><br>X,Y,Z direction | 2 hrs                 | 20 pcs         | 0 / 1   |
| 10  | Dropping test                     | Put on pallet ; height : 75cm                        | 3 times               | 20 pcs         | 0 / 1   |

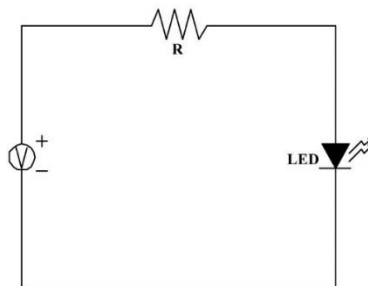
#### Judgment Criteria

|                                   |   |
|-----------------------------------|---|
| Forward Voltage V <sub>F</sub>    | V <sub>F</sub> Max-Increase < 1.1x              |
| Reverse Current I <sub>R</sub>    | I <sub>R</sub> Max-Increase < I <sub>Rmax</sub> |
| Luminous Intensity I <sub>V</sub> | I <sub>V</sub> Decay < 40%                      |

※ Solderbility test criteria : coverage is not less than 95%

Note : Measurement shall be taken after the tested samples have been returned to normal ambient conditions (generally after two hours)

### Test Circuit



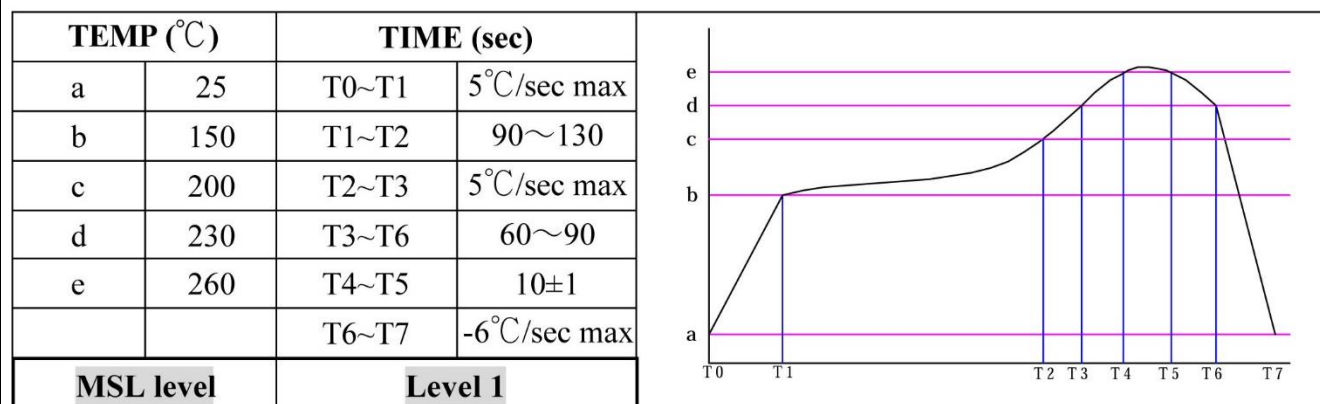
- *Overdrive current proof*

Customer must apply resistors for protection, otherwise slight voltage shift will cause current change with great deal. (Burn out will happen)

- *Storage*

1. The operation of temperature and R.H. are :  $5^{\circ}\text{C} \sim 30^{\circ}\text{C}$ , 60%R.H. Max.
2. Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a damp-proof box with desiccant. Considering the tape life, we suggest our customers use our products within 1.5 years (from production date).
3. It is recommended to bake before soldering when the package is unsealed more than 72 hrs. The condition is:  $60^{\circ}\text{C} \pm 5^{\circ}\text{C}$  for 15hrs.

### ***Reflow Temperature/Time***



### ***Hand Soldering Iron***

Temperature at tip of iron:  $400^{\circ}\text{C}$  Max (35W Max)

Soldering time:  $3 \pm 1$  sec.



# P-TEC

|  |                    |                   |                       |
|--|--------------------|-------------------|-----------------------|
| <b>PL00134-WCYB0611</b><br><b>Customer Approval</b><br><b>Signatures</b> | <b>Approved By</b> | <b>Checked By</b> | <b>PrepaYellow By</b> |
|  |                    |                   |                       |

[illegible]