

# PRODUCT SPECIFICATION

*Part Number*  
**PL00134-WCRG1825**

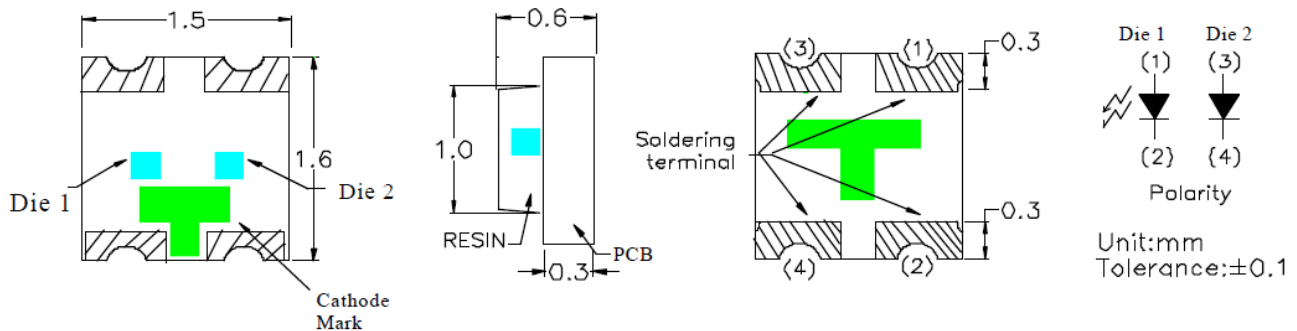
## Details

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

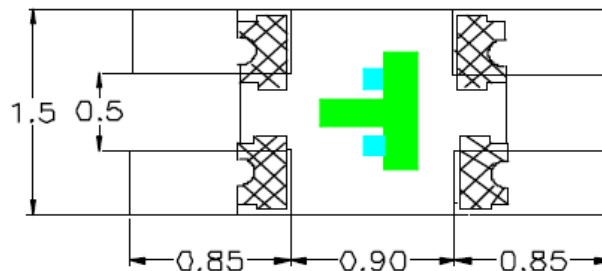
## Features

- 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-WCRG1825	AlInGaP	Ultra-Bright Red	Water Clear
	InGaN	True Green	

### 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 (@ 20mA)				Viewing Angle 201/2 (deg)
Emitting Color	λP (nm)	λD (nm)	Δλ (nm)	PD (mW)	IFmax (mA)	VF (V)		IV (mcd)		120°
Ultra-Bright Red	645	631	20	78	30	Typ.	Max.	Min.	Typ.	
						2.1	2.6	72	115	
True Green	523	525	30	84	20	3.3	3.8	180	315	

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

### *Luminous Intensity Bins*

Test Condition: @20mA		
Bin Code R18 (Red)	Min. IV (mcd)	Max. Iv (mcd)
J	45	72
K	72	115
L	115	180

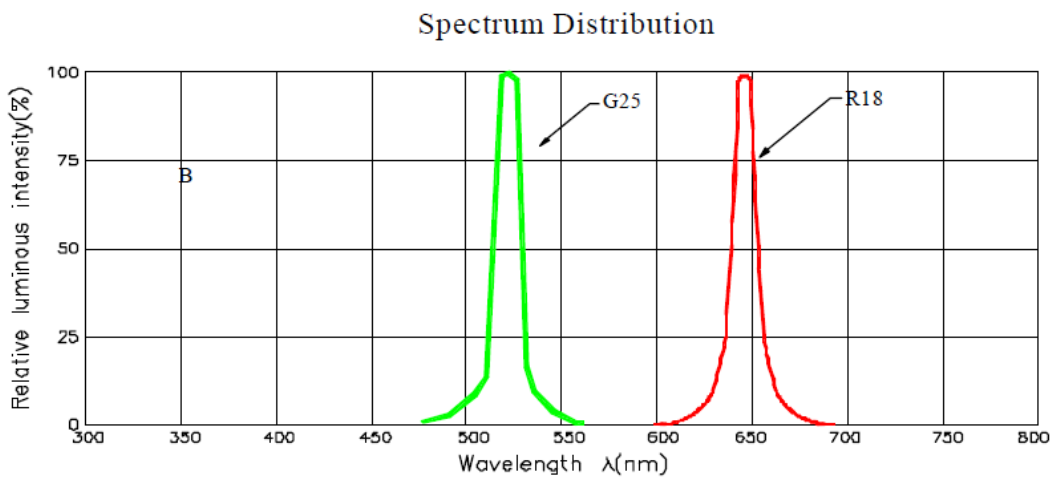
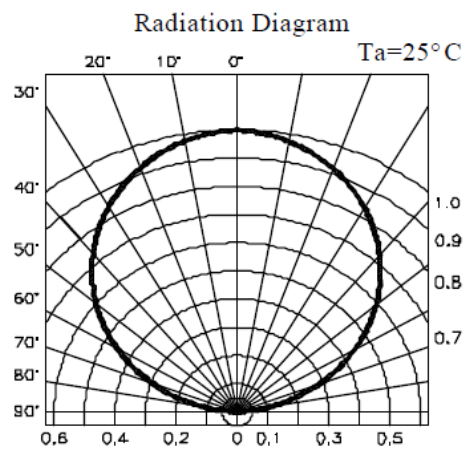
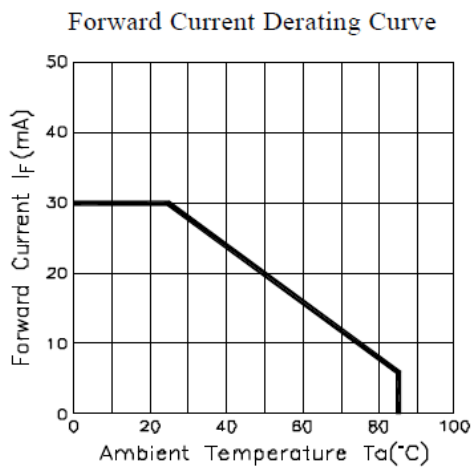
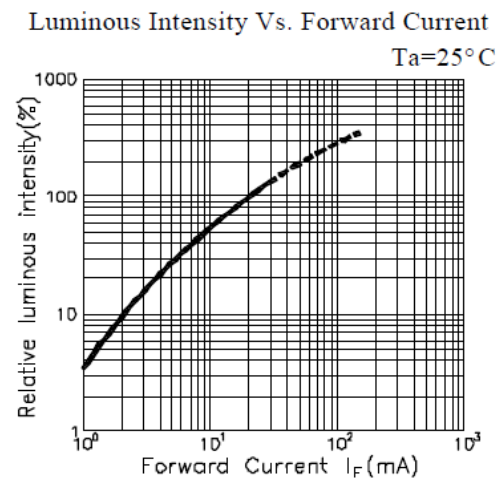
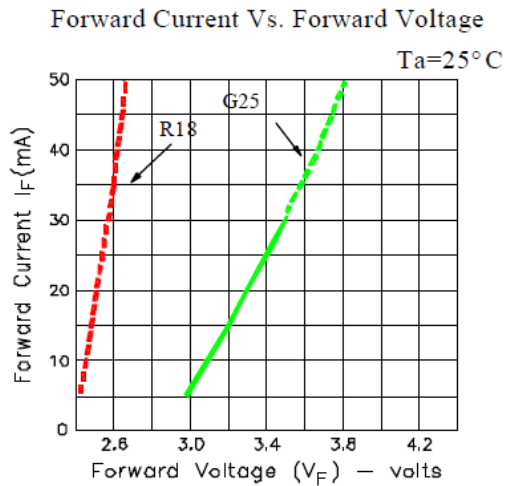
Test Condition: @20mA		
Bin Code G25 (True Green)	Min. IV (mcd)	Max. Iv (mcd)
M	180	285
N	285	450

### *Dominant Wavelength Bins*

Test Condition: @20mA		
Bin Code R18 (Red)	$\lambda_{Dmin}$ (nm)	$\lambda_{Dmax}$ (nm)
1	624	640

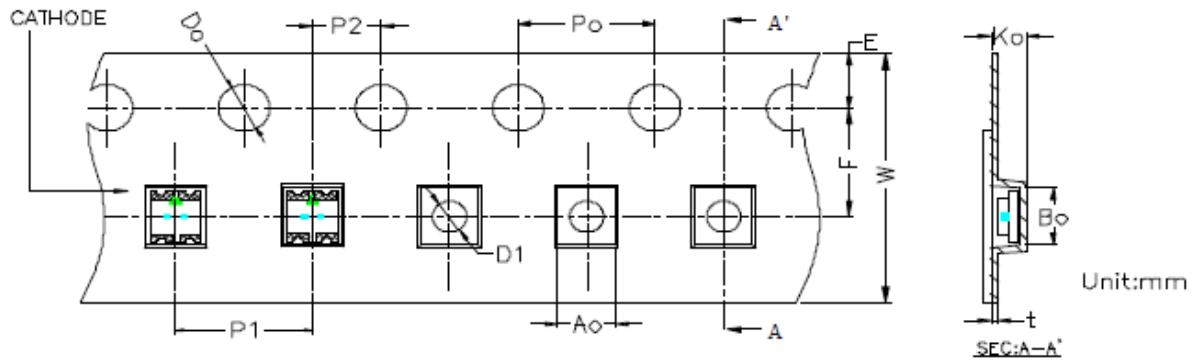
Test Condition: @20mA		
Bin Code G25 (True Green)	$\lambda_{Dmin}$ (nm)	$\lambda_{Dmax}$ (nm)
1	520	525
2	525	530
3	530	535

### Typical Electrical / Optical Characteristic Curves

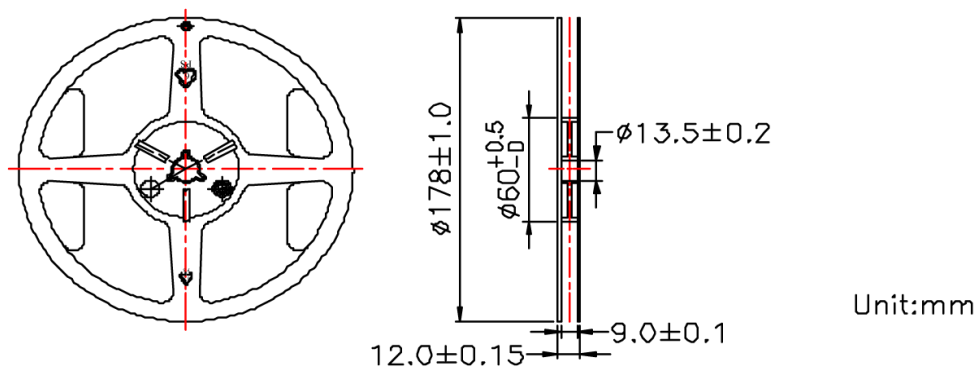


### Tape Specifications

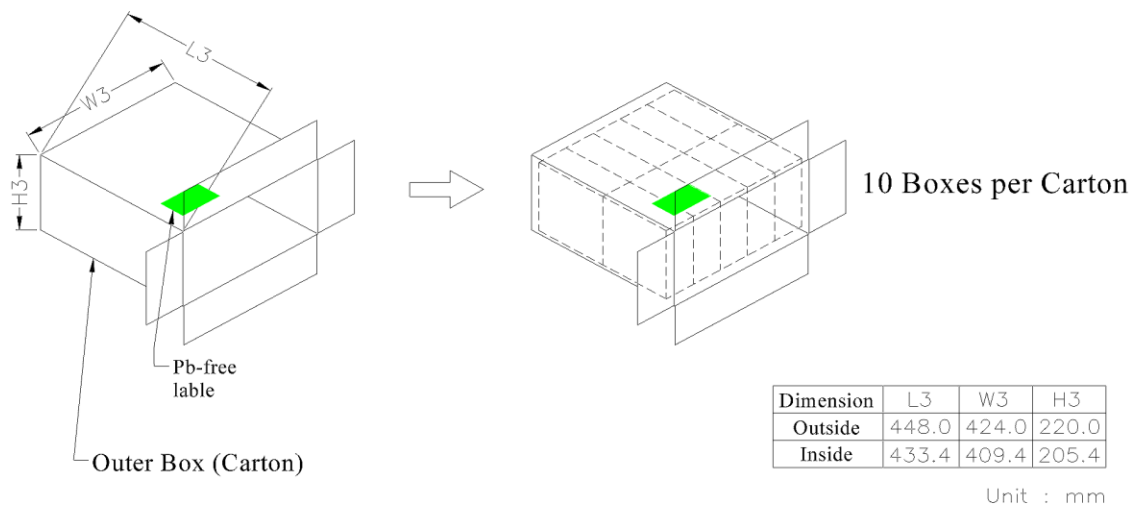
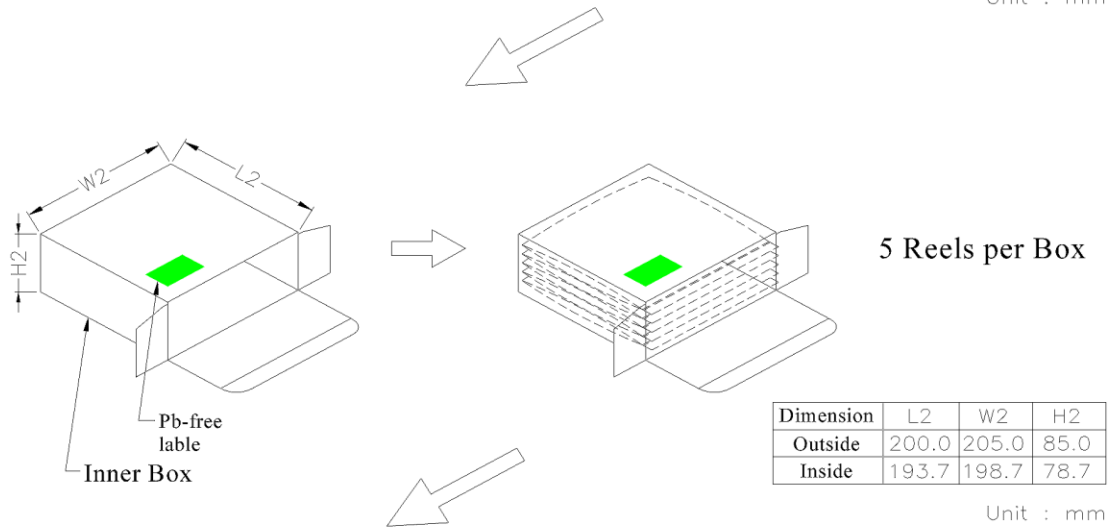
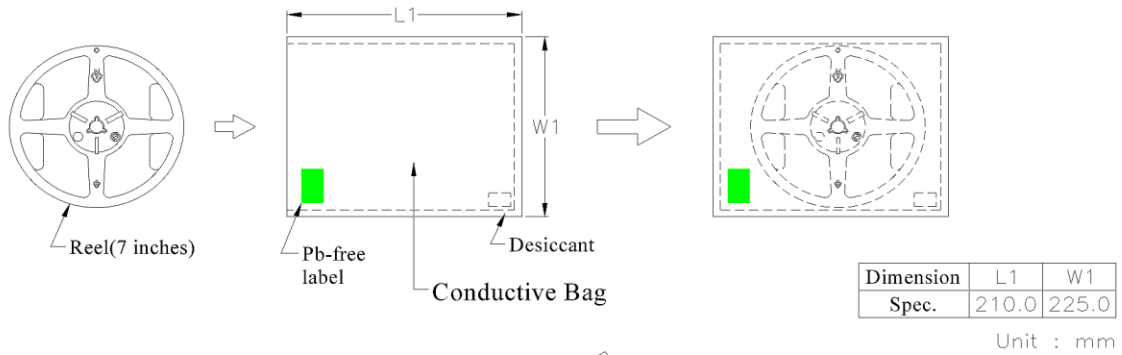
Packing Size													
Item	W	P1	E	F	Do	D1	PO	10PO	P2	Ao	Bo	Ko	t
Spec.	8.00	4.00	1.75	3.50	1.50	1.00	4.00	40.00	2.00	1.65	1.75	0.70	0.229
Tolerance	±0.3	±0.10	±0.10	±0.05	$\begin{smallmatrix} +0.10 \\ -0.00 \end{smallmatrix}$	$\begin{smallmatrix} +0.25 \\ -0.00 \end{smallmatrix}$	±0.05	±0.20	±0.05	±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, reduced storage space and finally smaller equipment to be obtained.
- Besides, lightweight makes them ideal for miniature application, etc.

No.	Item	Test Conditions	Test hr/cycle/time	Sample Q'ty	Ac / Re
1	Solder Heat	TEMP : 260°C±5°C ; 10±1 sec	2 times	30 pcs	0 / 1
2	Solderability Test ※	TEMP : 235°C±5°C ; 3±1 sec	1 time	5 pcs	0 / 1
3	Temperature Cycle	H : +85°C 30min. ∫ 5min. L : -40°C 30min.	100 cycles	20 pcs	0 / 1
4	Thermal Shock	H : +85°C 5min. ∫ 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 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> X,Y,Z direction	2 hrs	20 pcs	0 / 1
10	Dropping test	Put on pallet ; height : 75cm	3 times	20 pcs	0 / 1

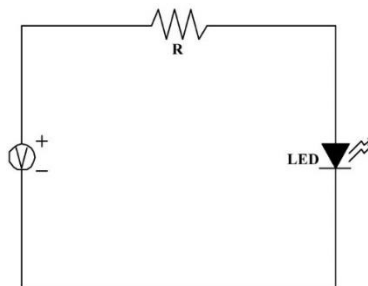
#### Judgment Criteria

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%

※ Solderability 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*

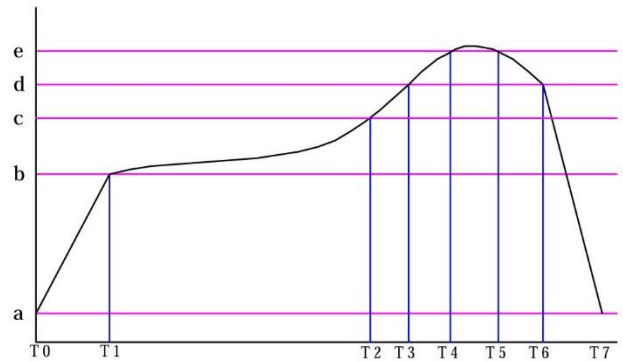
Customer must apply resistors for protection, otherwise slight voltage shift will cause current change with great deal. (Burn out will happen)

- *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***

TEMP ( $^{\circ}\text{C}$ )		TIME (sec)	
a	25	T0~T1	$5^{\circ}\text{C}/\text{sec max}$
b	150	T1~T2	90~130
c	200	T2~T3	$5^{\circ}\text{C}/\text{sec max}$
d	230	T3~T6	60~90
e	260	T4~T5	$10 \pm 1$
		T6~T7	$-6^{\circ}\text{C}/\text{sec max}$
<b>MSL level</b>		<b>Level 1</b>	



### ***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-WCRG1825</b> <b>Customer Approval</b> <b>Signatures</b>	<b>Approved By</b>	<b>Checked By</b>	<b>Prepared By</b>

[illegible]