PRODUCT SPECIFICATION

Part Number

PL00134-WCRG1817

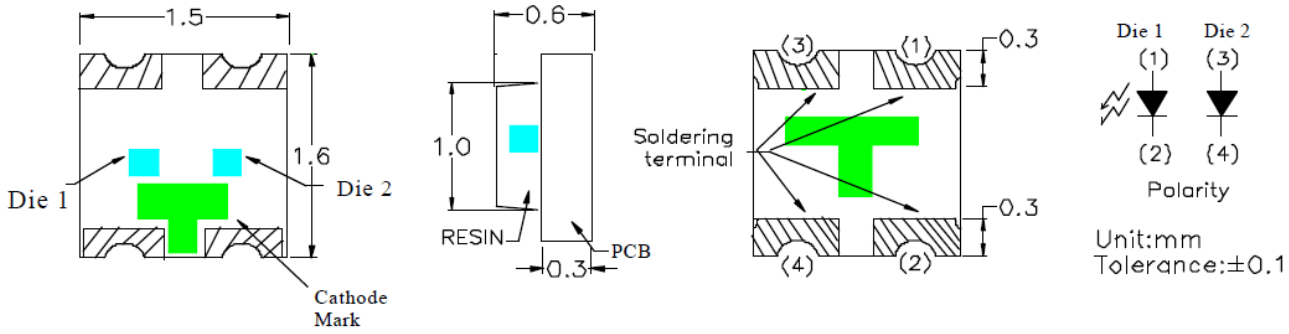
Details

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

Features

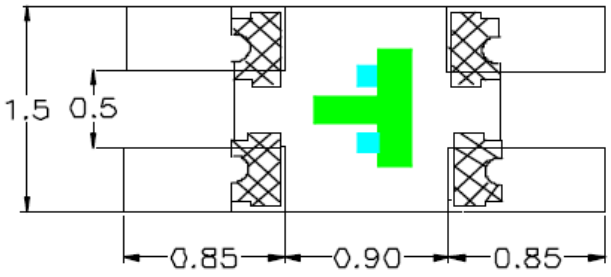
- RoHS Compliant
- Compatible with automatic placement equipment
- High Luminous Intensity
- Compatible with reflow solder process

Mechanical Dimensions



1. Soldering terminal may shift in x, y direction.

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-WCRG1817	AlInGaP	Ultra-Bright Red	Water Clear
	AlInGaP	Ultra-Bright Yellow-Green	

Absolute Maximum Ratings at Ta=25℃

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

Electrical and Optical Characteristics at Ta=25℃

Chip			Absolute Max. Ratings			Electro-optical Data (@ 20mA)				Viewing Angle 2θ1/2 (deg)
Emitting Color	λP (nm)	λD (nm)	Δλ (nm)	PD (mW)	IFmax (mA)	VF (V)		IV (mcd)		
						Typ.	Max.	Min.	Typ.	
Ultra-Bright Red	645	631	20	78	30	2.1	2.6	45	115	120°
Ultra-Bright Yellow-Green	575	574	15	78	30	2.2	2.6	18	45	

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 G17 (Yellow-Green)	**Min. IV (mcd)**	**Max. Iv (mcd)**
G	18	28.5
J	28.5	45
K	45	72

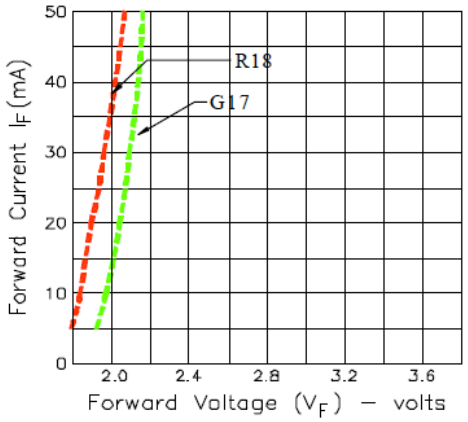
Dominant Wavelength Bins

Test Condition: @20mA		
Bin Code R18 (Red)	**λDmin (nm)**	**λDmax (nm)**
1	624	640

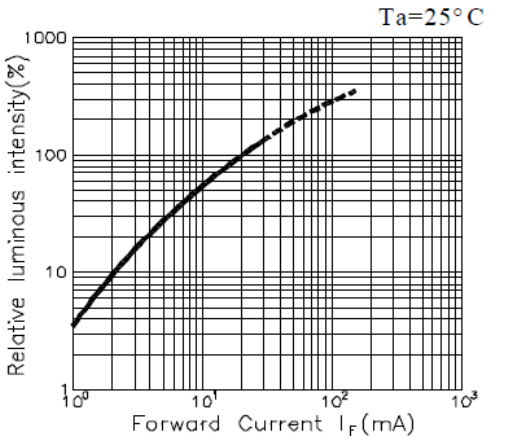
Test Condition: @20mA		
Bin Code G17 (Yellow-Green)	**λDmin (nm)**	**λDmax (nm)**
2	570	572
3	572	574
4	574	576

Typical Electrical / Optical Characteristic Curves

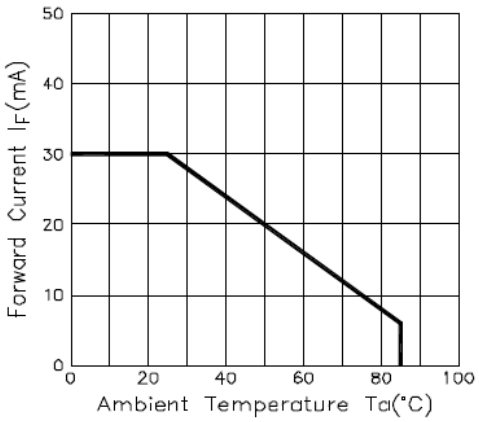
Forward Current Vs. Forward Voltage



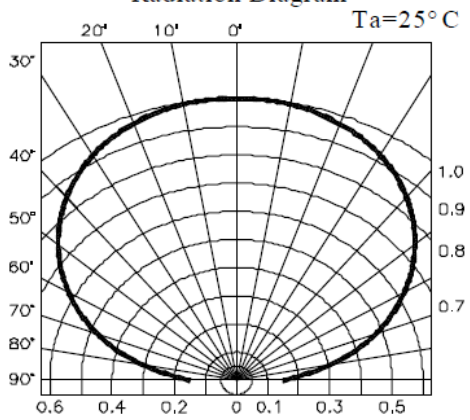
Luminous Intensity Vs. Forward Current



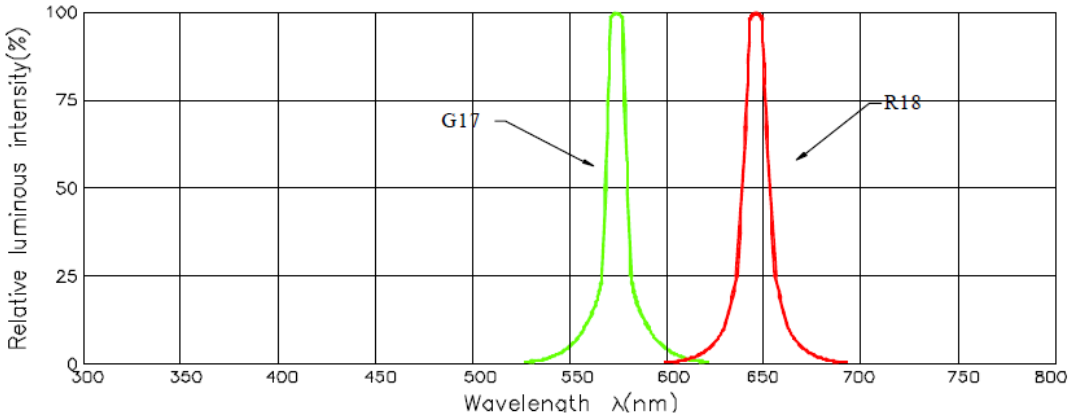
Forward Current Derating Curve



Radiation Diagram

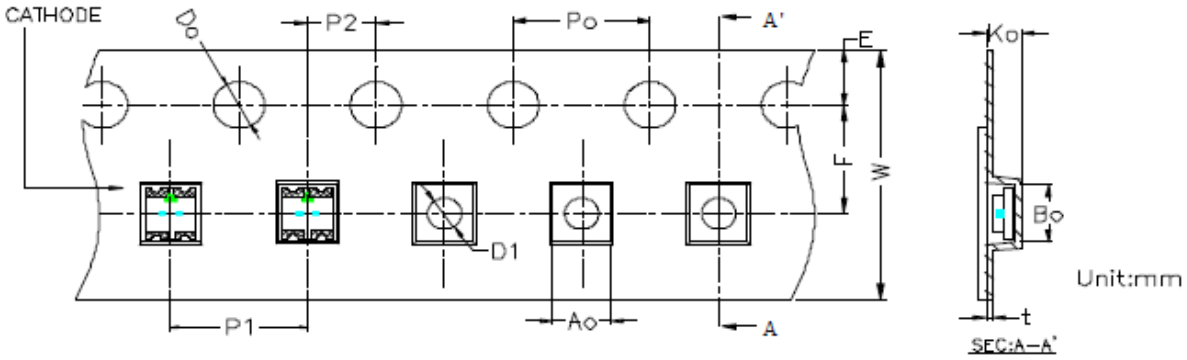


Spectrum Distribution

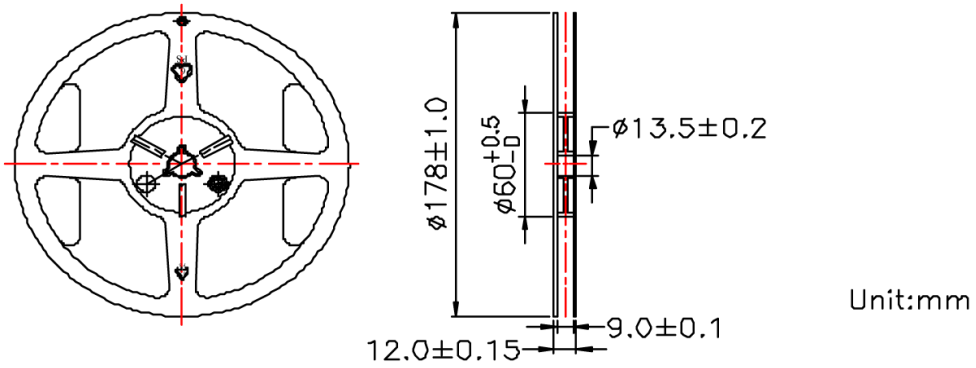


Tape Specifications

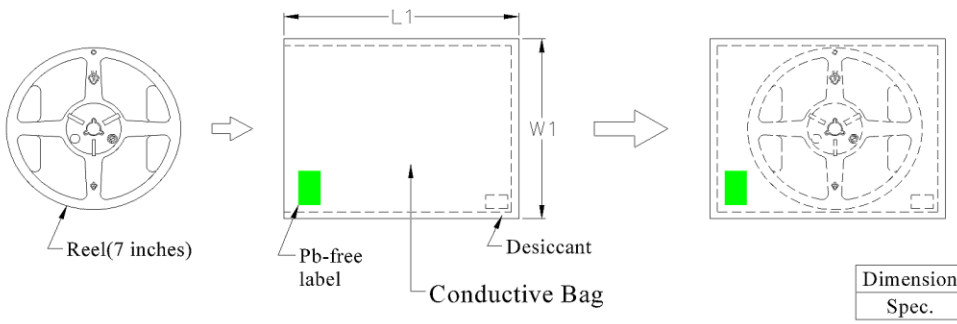
Packing Size													
Item	W	P1	E	F	Do	D1	Po	10PO	P2	Ao	Bo	Ko	t
Spec.	8.00	4.00	1.75	3.50	1.50	1.00	4.00	40.00	2.00	1.65	1.75	0.70	0.229
Tolerance	±0.3	±0.10	±0.10	±0.05	+0.10 −0.00	+0.25 −0.00	±0.05	±0.20	±0.05	±0.05	±0.05	±0.05	±0.02



Reel Specifications

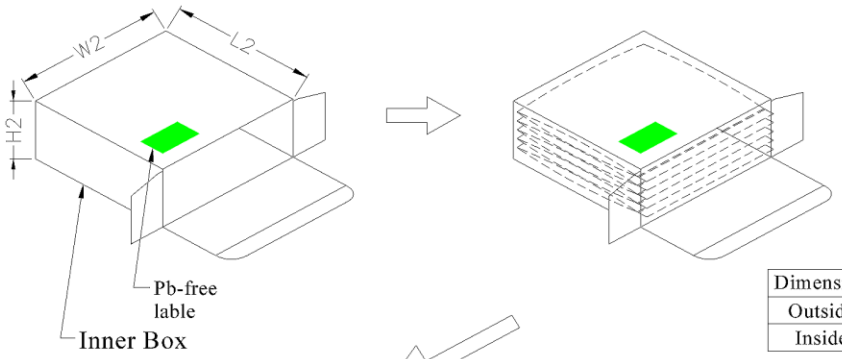


Packaging



Dimension	L1	W1
Spec.	210.0	225.0

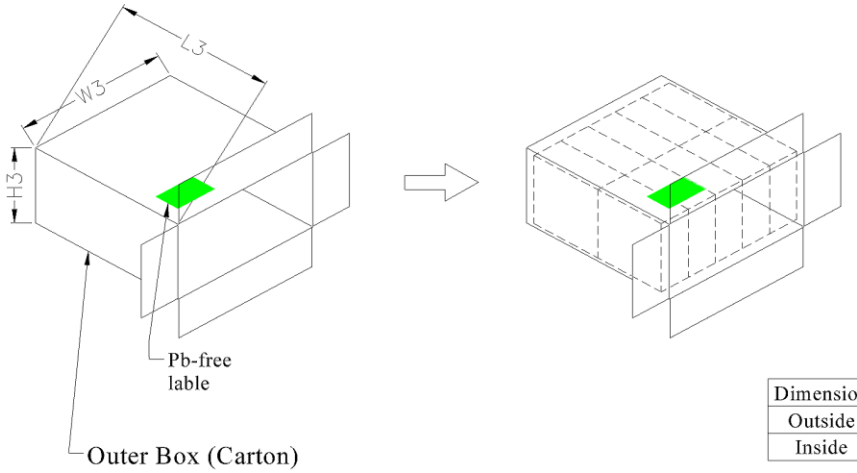
Unit : mm



5 Reels per Box

Dimension	L2	W2	H2
Outside	200.0	205.0	85.0
Inside	193.7	198.7	78.7

Unit : mm



10 Boxes per Carton

Dimension	L3	W3	H3
Outside	448.0	424.0	220.0
Inside	433.4	409.4	205.4

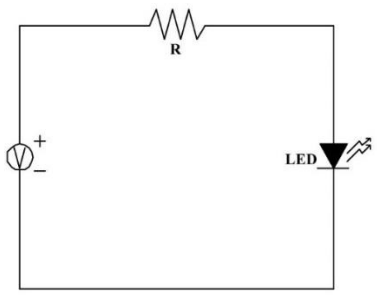
Unit : mm

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℃±5℃；10±1 sec	2 times	30 pcs	0 / 1
2	Solderbility Test ※	TEMP：235℃±5℃；3±1 sec	1 time	5 pcs	0 / 1
3	Temperature Cycle	H：+85℃ 30min. ∫ 5min. L：-40℃ 30min.	100 cycles	20 pcs	0 / 1
4	Thermal Shock	H：+85℃ 5min. ∫ L：-40℃ 5min.	50 cycles	20 pcs	0 / 1
5	High Temperature Storage	TEMP：85℃	1000 hrs	20 pcs	0 / 1
6	Low Temperature Storage	TEMP：-40℃	1000 hrs	20 pcs	0 / 1
7	DC Operating Life	$I_F = I_{Fmax}$	1000 hrs	20 pcs	0 / 1
8	High Temperature High Humidity	85℃ / 90～95%R.H.	1000 hrs	20 pcs	0 / 1
9	Shocking test	100～2000Hz ；98.1m/s^2 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_F		V_F Max-Increase < 1.1x			
Reverse Current I_R		I_R Max-Increase < I_{Rmax}			
Luminous Intensity I_V		I_V 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*

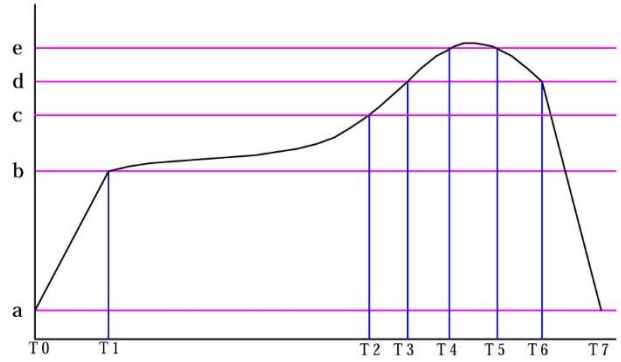
Customer must apply resistors for protection, otherwise slight voltage shift will cause current change with great deal. （Burn out will happen）

- *Storage*

1. The operation of temperature and R.H. are：5℃～30℃, 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℃±5℃ for 15hrs.

Reflow Temperature/Time

TEMP (℃)		TIME (sec)	
a	25	T0~T1	5℃/sec max
b	150	T1~T2	90～130
c	200	T2~T3	5℃/sec max
d	230	T3~T6	60～90
e	260	T4~T5	10±1
		T6~T7	-6℃/sec max
MSL level		**Level 1**	



Hand Soldering Iron

Temperature at tip of iron: 400℃ Max (35W Max)
Soldering time: 3 +/-1 sec.

PL00134-WCRG1817 Customer Approval Signatures	Approved By	Checked By	Prepared By

Record Of Revisions			
Rev.	**Comments**	**Page**	**Date**
0	Released Spec	--	03/14/16