PRODUCT SPECIFICATION

Part Number

PLH0402-YDW01

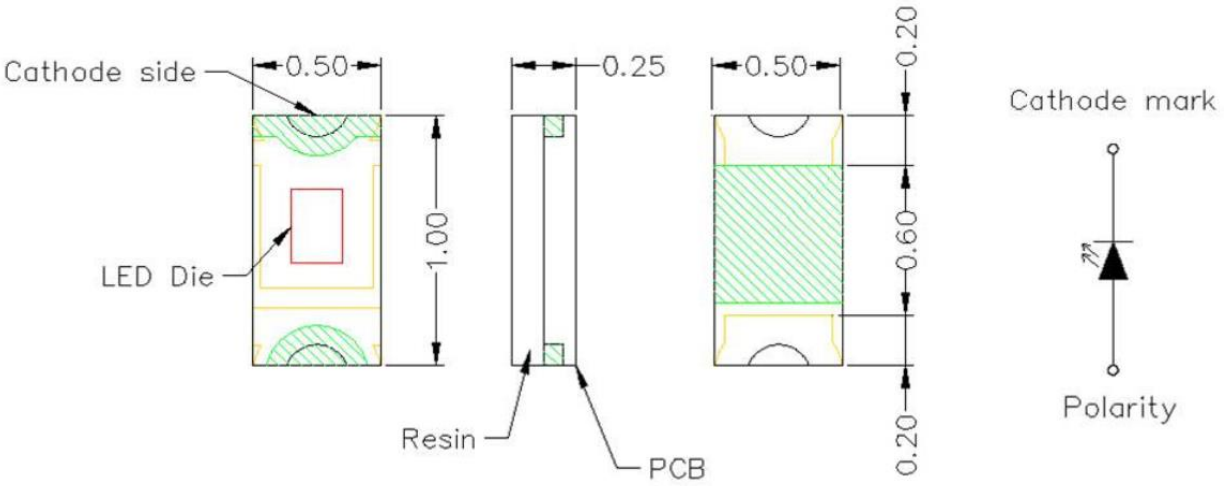
Details

- 0402 SMD LED
- 1.0 x 0.50 x 0.25 mm
- InGaN chip material, White
- Packaged on 3,000 piece reels

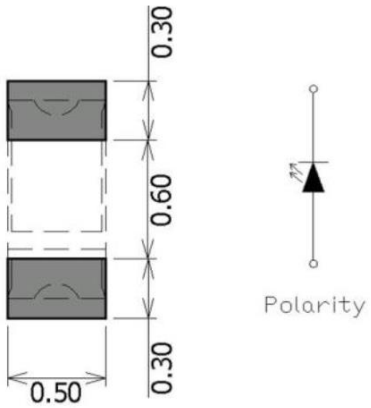
Features

- Durable and Rugged
- RoHS Compliant
- Thin design

Mechanical Dimensions



Soldering Pattern



Notes:
1. Dimensions in millimeters unless otherwise noted
2. Tolerance is ±0.1mm unless otherwise noted.
3. Specifications subject to change without notice

Device Selection Guide

Model Number	Chip		Resin
	Material	Emitting Color	Yellow Diffused
PLH0402-YDW01	InGaN	White	

Absolute Maximum Ratings at Ta=25°C

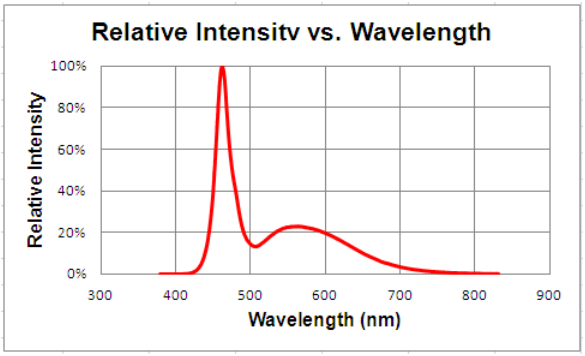
P_d (mW)	I_F (mA)	I_{FP}* (mA)	V_R (V)	T_{OP} (ºC)	T_{ST} (ºC)
32	5	20	5	-40ºC~+85ºC	-40ºC~+100ºC

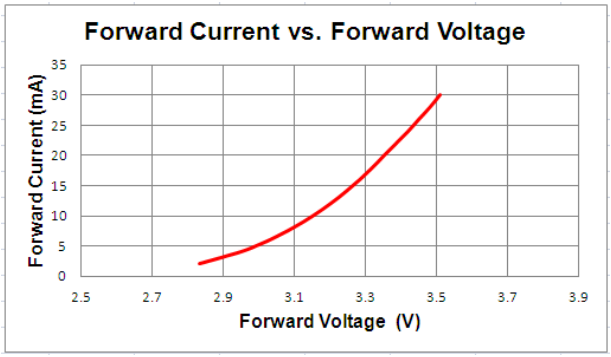
Note: 1. Condition for IFP is pulse of 1/10 duty and 0.1msec width
2. This product should be operated in forward bias. If a reverse voltage is continuously applied to the product, such operation can cause migration resulting in LED damage.

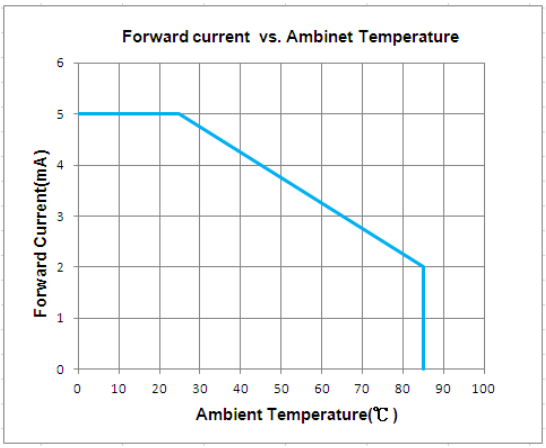
Electrical and Optical Characteristics at Ta=25°C

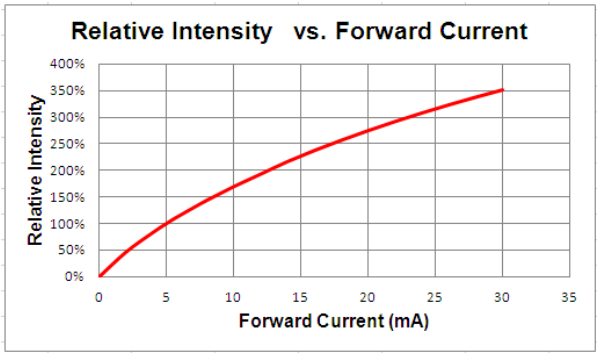
I_F(mA)	V_F(V)		Chromaticity Coordinate	I^*_V(mcd)	
	typ	max	(X, Y)	min	typ
5	2.8	3.2	X=0.285 Y=0.29	-	140

Electrical and Optical Curves

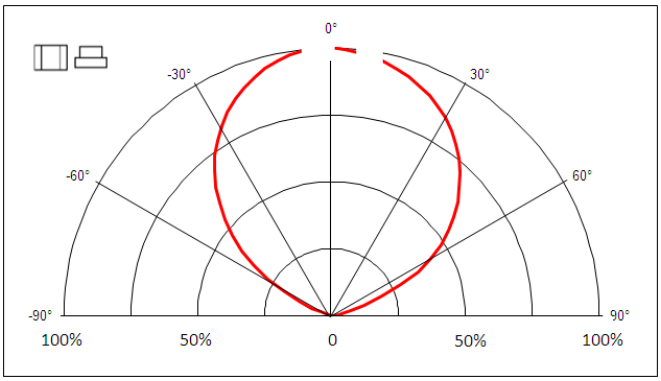


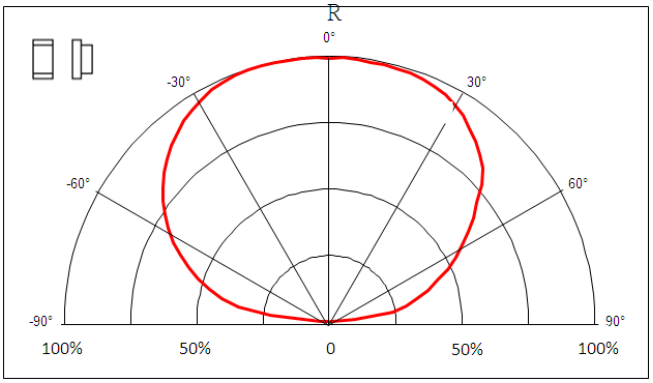






Characteristic Curves for All Colors (Radiation Pattern)





Luminous Intensity (Iv) Bin

Bin	Luminous Intensity Range (mcd)	
	Minimum	Maximum
Q	71.5	90.0
R	112.5	180.0
S	180.0	285.0
T	285.0	360.0

Note: @20mA / Ta=25^{O} C, Tolerance: ±10%

Forward Voltage (V_F) Bin:

Color	Bin Code	Spec. Range
White (W01)	**G2**	2.5-2.6V
	G3	2.6-2.7V
	G4	2.7-2.8V
	H1	2.8-2.9V
	H2	2.9-3.0V
	H3	3.0-3.1V
	H4	3.1-3.2V

Note: @20mA / Ta=25℃, Tolerance: ±0.05 V

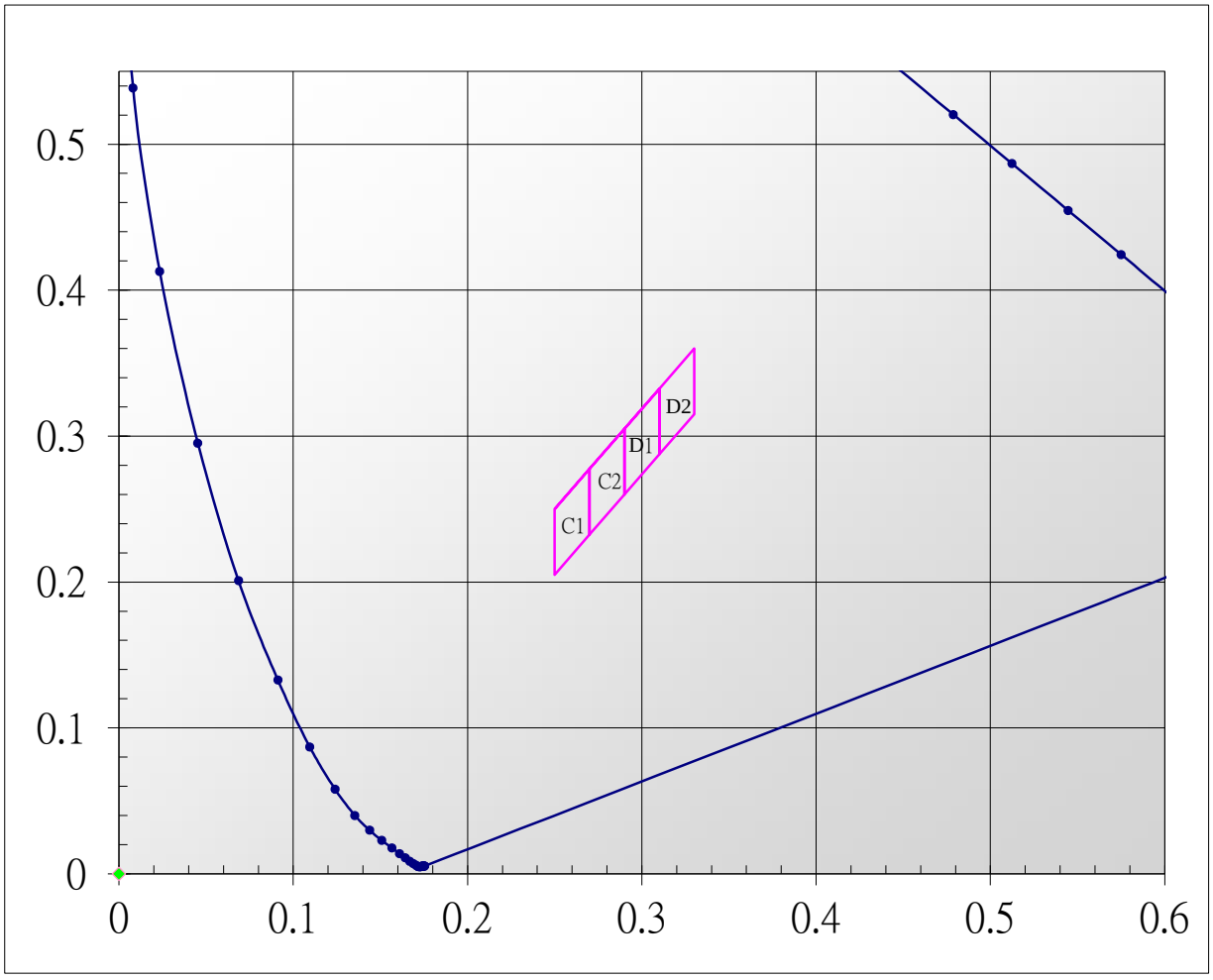
Chromaticity Bin (for W01 only)

	Rank C1			
x	0.2500	0.2700	0.2700	0.2500
y	0.2500	0.2775	0.2325	0.2050

	Rank C2			
x	0.2700	0.2900	0.2900	0.2700
y	0.2775	0.3050	0.2600	0.2325

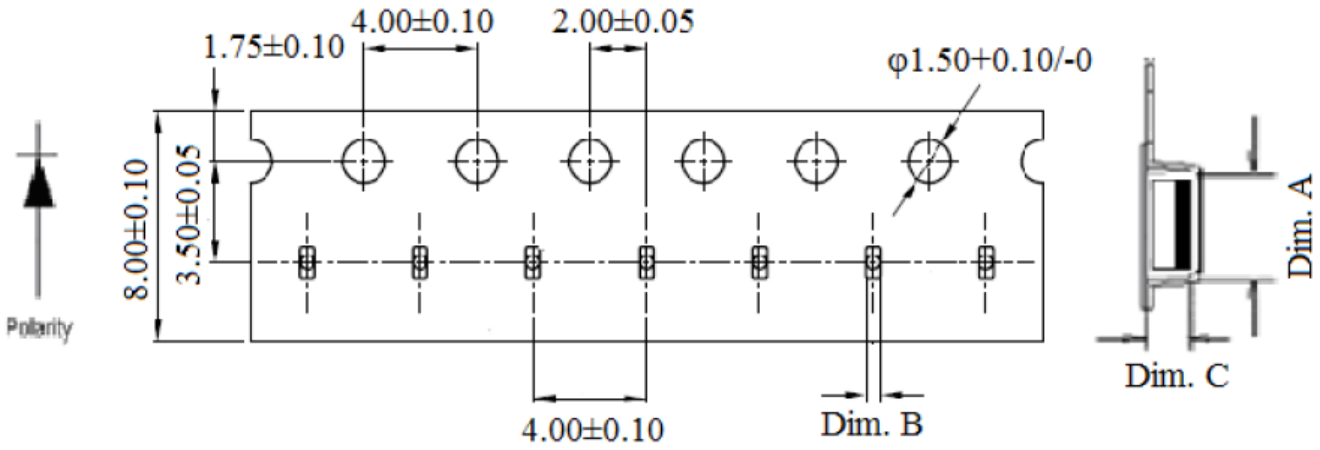
	Rank D1			
x	0.2900	0.3100	0.3100	0.2900
y	0.3050	0.3325	0.2875	0.2600

	Rank D2			
x	0.3100	0.3300	0.3300	0.3100
y	0.3325	0.3600	0.3150	0.2875



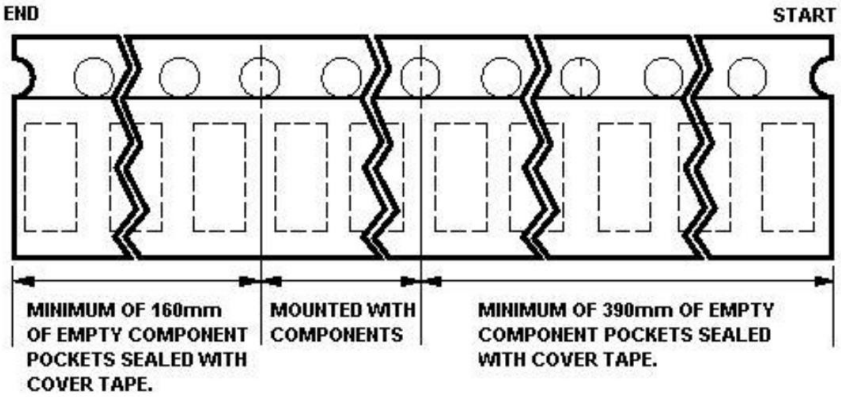
Note: @20mA / Ta=25℃, Tolerance: ± 0.01

Tape Dimensions

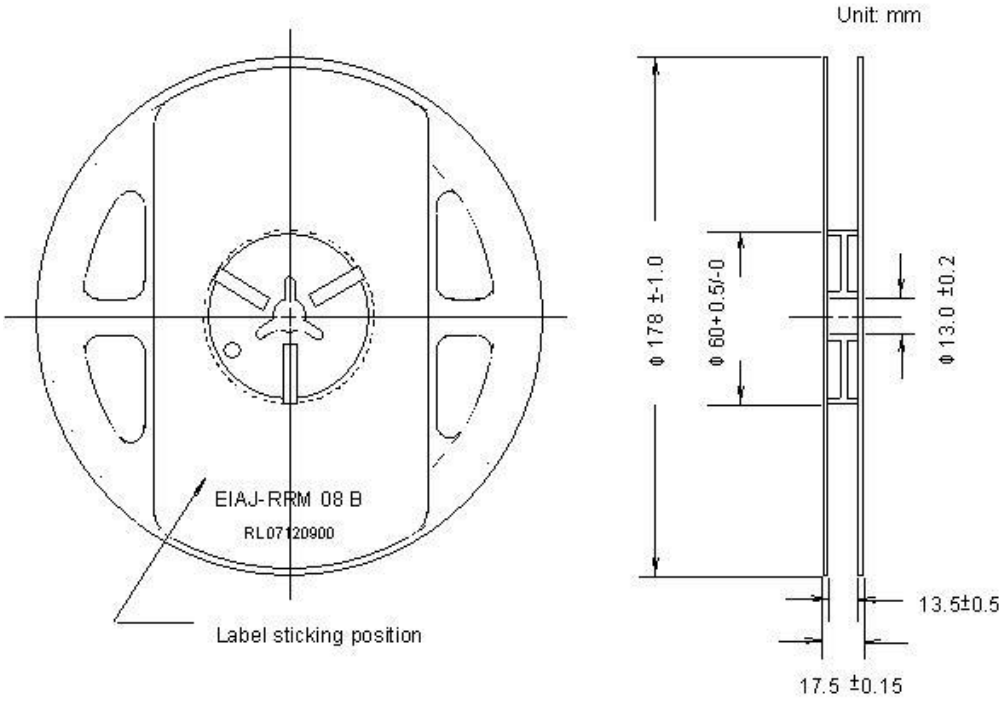


Dim. A	Dim. B	Dim. C	Q'ty/Reel
1.11±0.03	0.60±0.03	0.38±0.03	3K

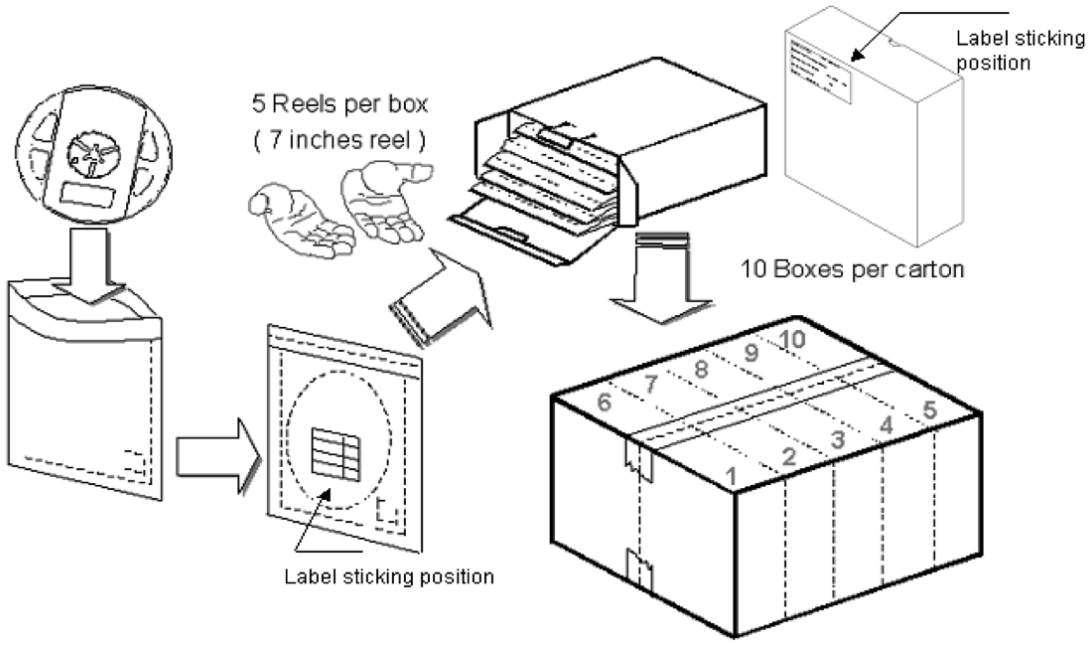
Unit: mm



Reel Specifications



Packing

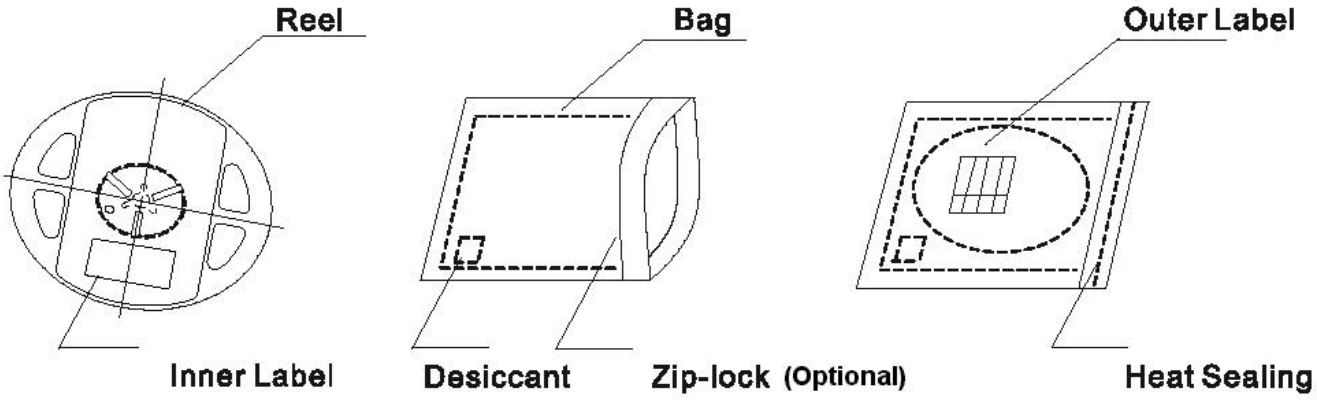


Dry Pack

All SMD optical devices are **MOISTURE SENSITIVE**. Avoid exposure to moisture at all times during transportation or storage. Every reel is packaged in a moisture protected anti-static bag. Each bag is properly sealed prior to shipment.

Upon request, a humidity indicator will be included in the moisture protected anti-static bag prior to shipment.

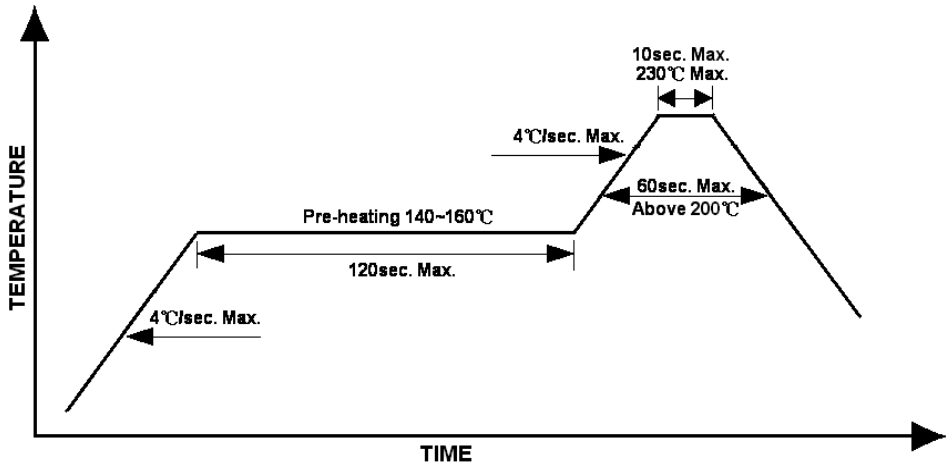
The packaging sequence is as follows:



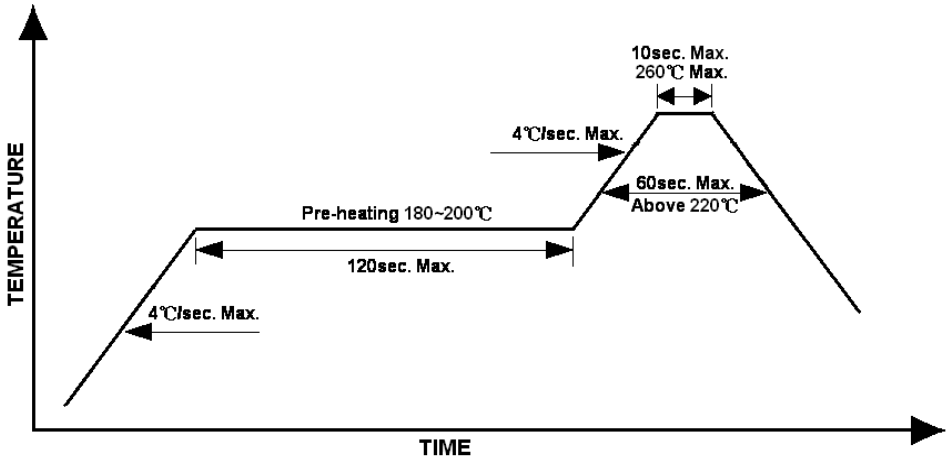
Reflow Soldering

- Recommended tin glue specifications: melting temperature in the range of 178~192 ^{O}C
- The recommended reflow soldering profile is as follows (temperatures indicated are as measured on the surface of the LED resin):

Lead Solder Profile



Lead-free Solder Profile



Wave Soldering

- Maximum soldering temperature is 260°C for 5 seconds.

Precautions

1. Avoid exposure to moisture at all times during transportation or storage
2. Anti-Static precaution must be taken when handling GaN, InGaN, and AlInGaP products.
3. It is suggested to connect the unit with a current limiting resistor of the proper size. Avoid applying a reverse voltage.
4. Avoid operation beyond the limits as specified by the absolute maximum ratings.
5. Avoid direct contact with the surface through which the LED emits light.
6. If possible, assemble the unit in a clean room or dust-free environment.

Reworking

- Rework should be completed within 5 seconds under 260 °C.
- The iron tip must not come in contact with the copper foil.
- Twin-head type is preferred.

Cleaning

Following are cleaning procedures after soldering:

- An alcohol-based solvent such as isopropyl alcohol (IPA) is recommended.
- Temperature x Time should be 50°C x 30sec. or <30°C x 3min
- Ultra sonic cleaning: < 15W/ bath; bath volume ≤ 1liter
- Curing: 100 °C max, <3min

Cautions of Pick and Place

- Avoid stress on the resin at elevated temperature.
- Avoid rubbing or scraping the resin by any object.
- Electro-static may cause damage to the component. Please ensure that the equipment is properly grounded. Use of an ionizer fan is recommended.

PLH0402-YDW01 Customer Approval Signatures	Approved By	Checked By	Prepared By

Record Of Revisions			
Rev.	**Description**	**Date**	**Page**
0	Released Spec	08/24/15	--