PRODUCT SPECIFICATION

Series Number

PLH00250

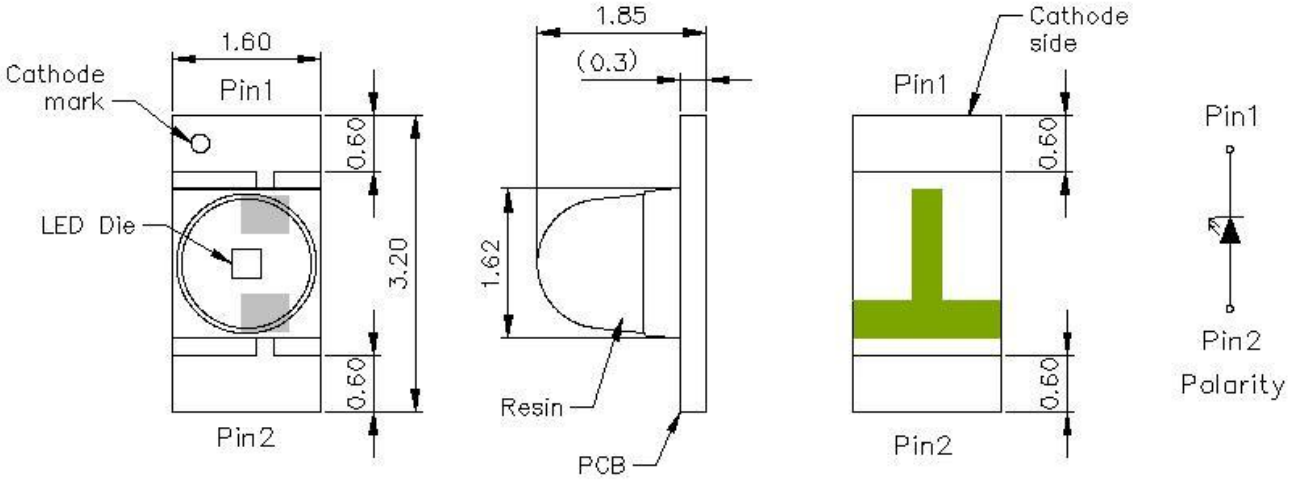
Details

- Dome Lens SMD LED
- 3.2 x 1.6 x 1.85 mm
- AlInGaP or InGaN chip material
- Packaged on 2,000 piece reel

Features

- Durable and Rugged
- RoHS Compliant
- Easy mounting on PCB

Mechanical Dimensions



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		Lens Type
Top Mount	**Reverse Mount**	**Material**	**Emitting Color**	
PLH00250-WCG17	PLH00250R-WCG17	AlInGaP	Ultra Bright Yellow-Green	Water Clear
PLH00250-WCY04	PLH00250R-WCY04		Ultra Bright Yellow	
PLH00250-WCA05	PLH00250R-WCA05		Ultra Bright Amber	
PLH00250-WCR08	PLH00250R-WCR08		Ultra Bright Red	
PLH00250-WCR26	PLH00250R-WCR26		Ultra Bright Deep Red	
PLH00250-WCB08	PLH00250R-WCB08	InGaN	Blue	
PLH00250-WCG25	PLH00250R-WCG25		Pure Green	
PLH00250-WCW01	PLH00250R-WCW01		White	

Absolute Maximum Ratings at Ta=25°C

Chip	Power Dissipation (mW)	Continuous Forward Current (mA)	Pulse Forward Current (mA)	Reverse Voltage (V)	Operating Temperature (°C)	Storage Temperature (°C)
G17	72	30	100	5	-30°C ~+85°C	-40°C ~+85°C
Y04						
A05						
R08						
R26						
B08	117					
G25						
W01						

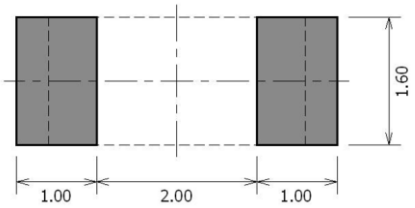
Note: 1. Condition for IFP is pulse of 1/10 duty and 0.1msec width
2. This product should be operated in forward bias. If a reverse voltage is continuously applied to the product, such operation can cause migration resulting in LED damage.

Electrical and Optical Characteristics at Ta=25°C

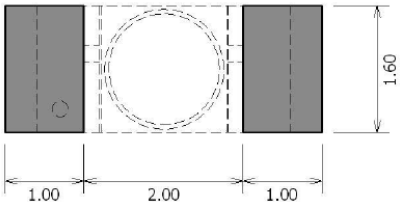
Chip	IF (mA)	VF (V)	λ(nm)		IV(mcd)	Viewing Angle 2θ1/2
		typ	λD	λP	typ	
G17	20	2.0	571	573	715	20°
Y04		2.0	589	591	715	
A05		2.0	605	609	700	
R08		2.0	624	632	900	
R26		1.9	632	645	780	
B08		3.3	470	468	715	
G25		3.3	527	520	1440	
W01		3.3	X: 0.290 Y: 0.285		715	

Soldering Pattern

Top Mount



Reverse Mount



Luminous Intensity (lv) Bin

Bin	Luminous Intensity Range (mcd)		Bin	Luminous Intensity Range (mcd)	
	Minimum	Maximum		Minimum	Maximum
U1	360.0	400.0	U2	400.0	450.0
V1	450.0	500.0	V2	500.0	560.0
W1	560.0	630.0	W2	630.0	715.0
X1	715.0	800.0	X2	800.0	900.0
Y1	900.0	1000.0	Y2	1000.0	1125.0
Z1	1125.0	1270.0	Z2	1270.0	1440.0
AA1	1440.0	1610.0	AA2	1610.0	1800.0
AB1	1800.0	2010.0	AB2	2010.0	2250.0
AC1	2250.0	2530.0	AC2	2530.0	2850.0

Note: @20mA / Ta=25O C, Tolerance: +/- 10%

Wavelength Bin

Bin	Wavelength Range (nm)									
	Red (R08)		Deep Red (R18)		Amber (A05)		Yellow (Y04)		Yellow Green (G17)	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
--	615.0	630.0	630.0	650.0						
A					597.0	600.0	582.0	584.5	561.5	564.5
B					600.0	603.0	584.6	587.0	564.05	567.5
C					603.0	606.0	587.0	589.5	567.6	570.6
D					606.0	609.0	589.5	592.0	570.5	573.5
E					609.0	612.0	592.0	594.5	573.5	576.5
F					619.0	615.0	594.5	597.0		
H										
J										

Note: @20mA / Ta=25O C, Tolerance: +/- 5nm

Bin	Wavelength Range (nm)			
	True Green (G25)		Blue (B08)	
	Min	Max	Min	Max
--				
A	515.0	520.0	460.0	464.0
B	520.0	525.0	464.0	468.0
C	525.0	530.0	468.0	472.0
D	530.0	535.0	472.0	476.0
E	535.0	540.0	476.0	480.0
F			480.0	485.0
H				
J				

Note: @20mA / Ta=25O C, Tolerance: +/- 5nm

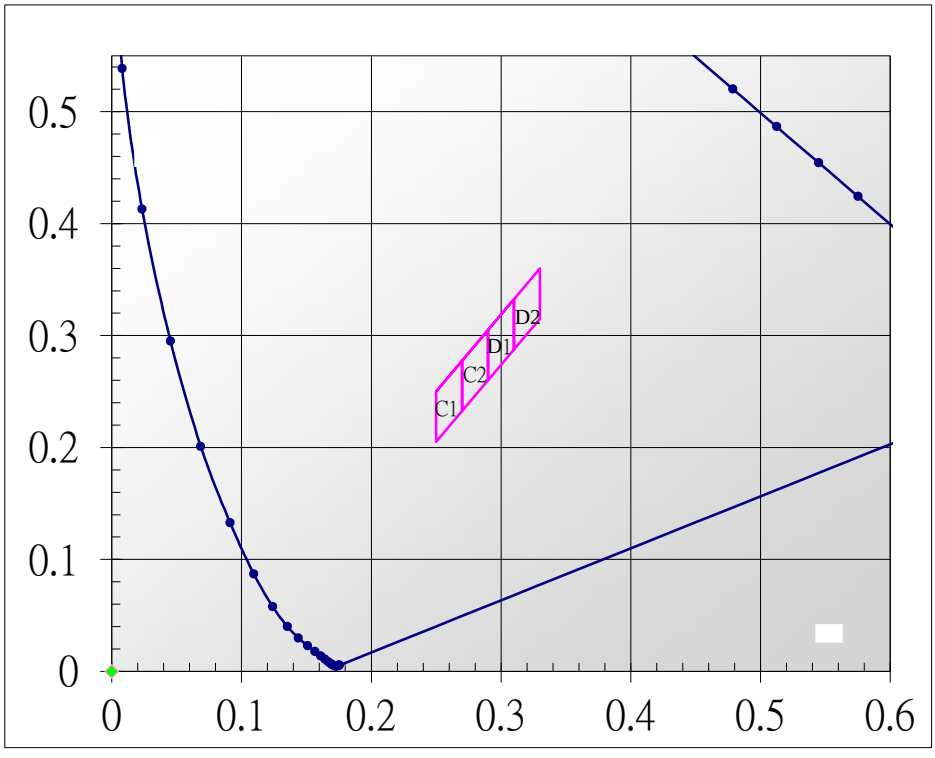
Forward Voltage (Vf) Bin

Color	Bin Code	Spec Range
Blue (B08) Green (G25) White (W01)	G8	2.7-2.9 V
	H7	2.9-3.1 V
	H8	3.1-3.3 V
	J7	3.3-3.5 V
	J8	3.5-3.7 V
	K7	3.7-3.9 V
Ultra Bright (G17, Y04, A05, R08, R26)	--	2.4V max

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

Chromaticity Bin (for White W01 only)

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



Precautions for Use

1. The chips should not be used directly in any type of fluid such as water, oil, organic solvent, etc.

2. When the LEDs are illuminating, the maximum ambient temperature should be first considered before operation.

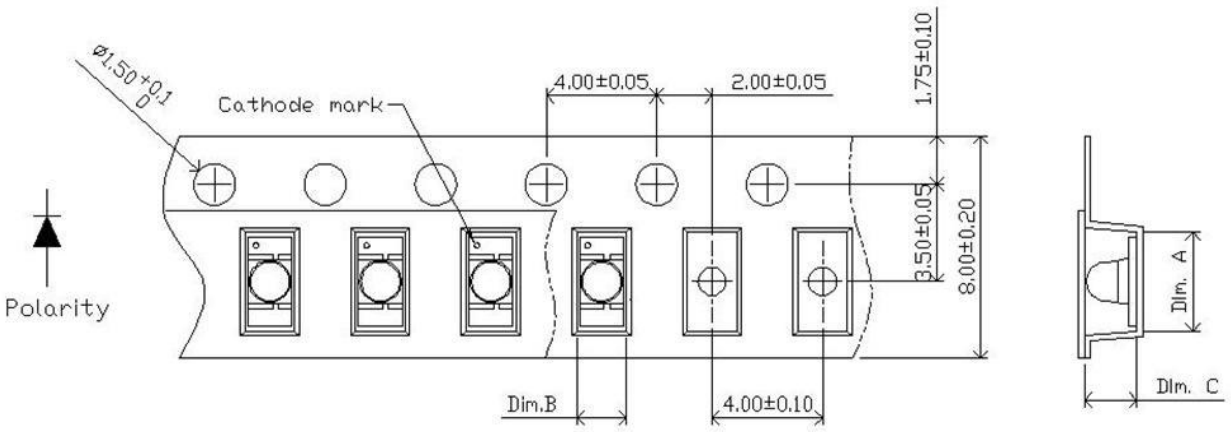
3. LEDs must be stored in a clean environment. A sealed container with a nitrogen atmosphere is necessary if the storage period is over 3 months after shipping.

4. The LEDs must be used within seven days after unpacked. Unused products must be repacked in an anti-electrostatic package, folded to close any opening and then stored in a dry and cool space.

5. The appearance and specifications of the products may be modified for improvement without further notice.

6. The LEDs are sensitive to the static electricity and surge. It is strongly recommended to use a grounded wrist band and anti-electrostatic glove when handling the LEDs. If a voltage over the absolute maximum rating is applied to LEDs, it will damage LEDs. Damaged LEDs will show some abnormal characteristics such as remarkable increase of leak current, lower turn-on voltage and getting unlit at low current.

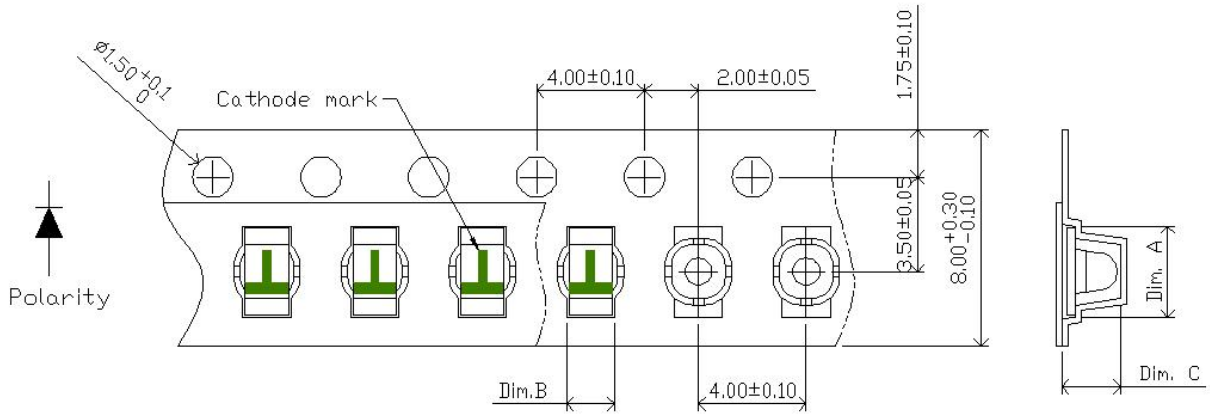
Tape Dimensions (Top Mount)



Part No.	Dim. A	Dim. B	Dim. C	Q'ty/Reel
PLH00250	3.37±0.10	1.78±0.10	2.17±0.10	2K

Unit: mm

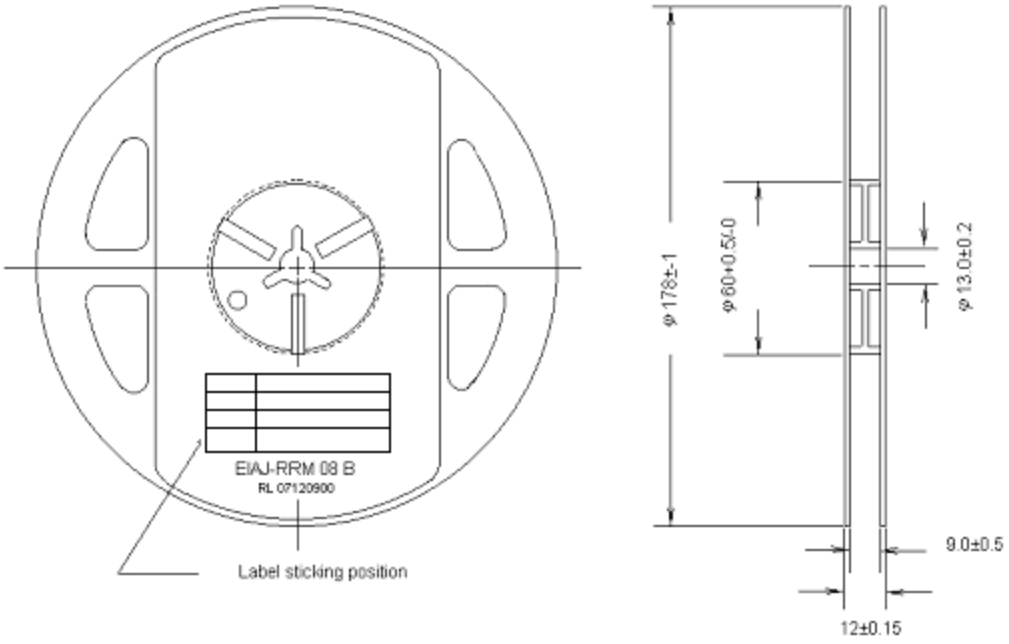
Tape Dimensions (Reverse Mount)

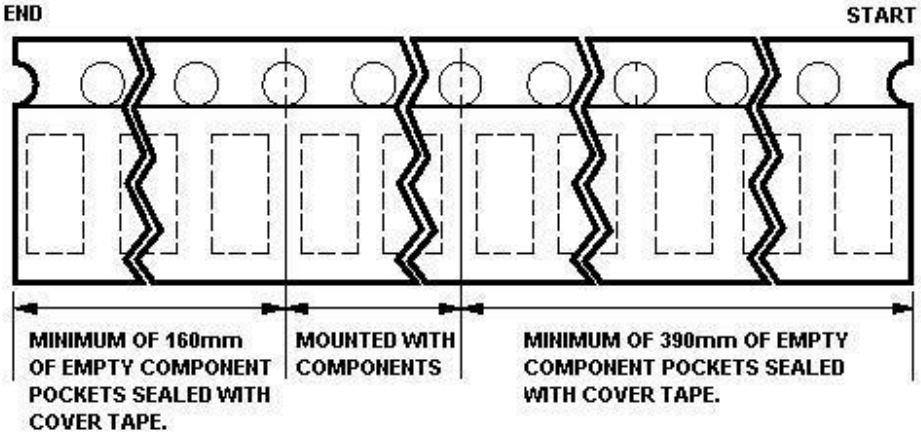


Part No.	Dim. A	Dim. B	Dim. C	Q'ty/Reel
PLH00250R	3.37±0.10	1.78±0.10	2.17±0.10	2K

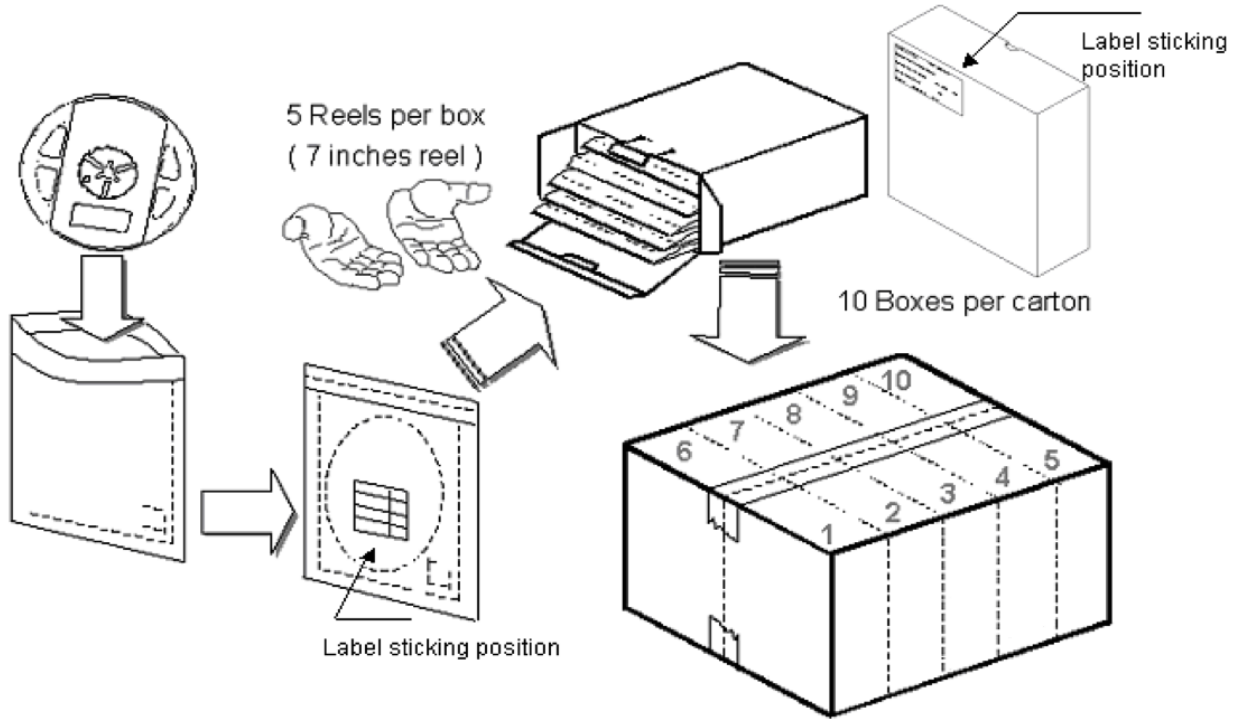
Unit: mm

Reel Dimensions





Packing and Label Specifications

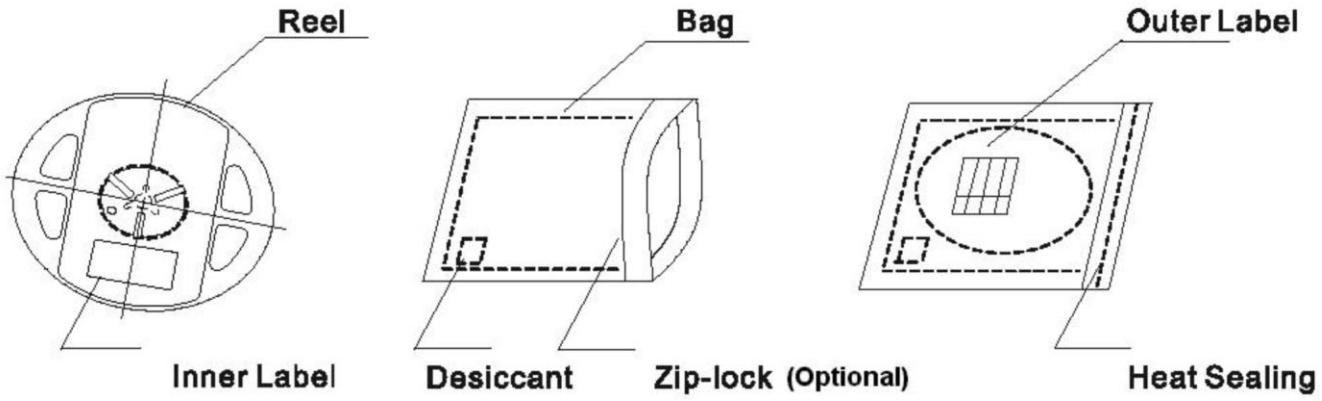


Dry Pack

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.

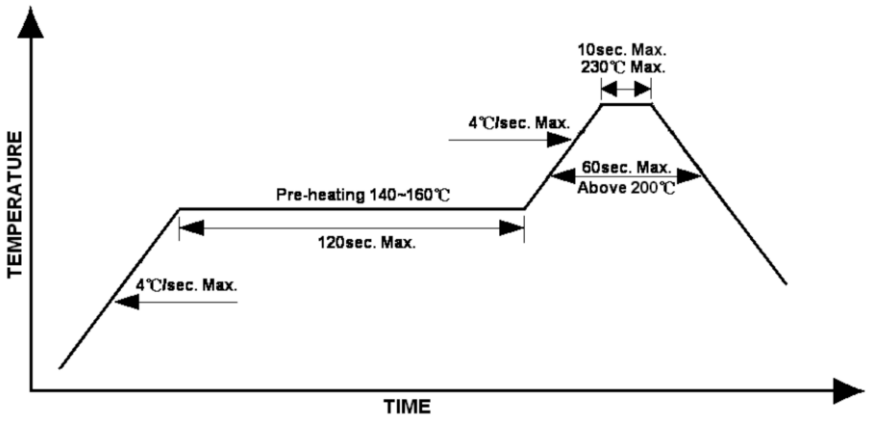
The packaging sequence is as follows:



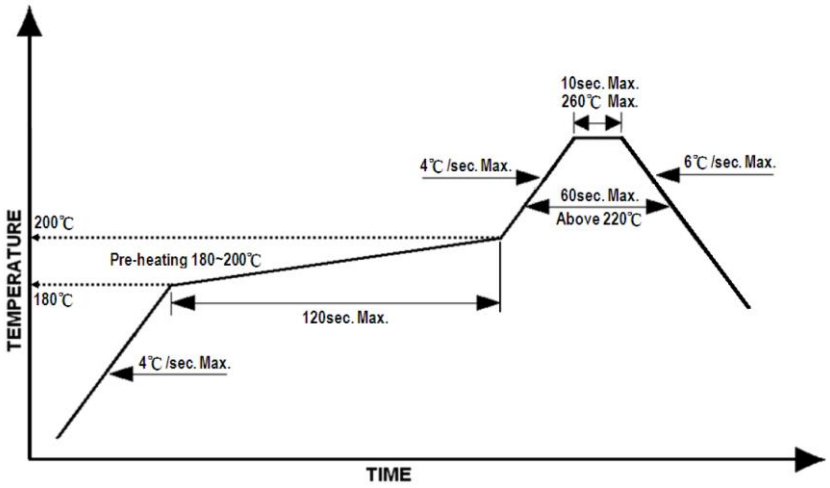
Reflow Soldering

- 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



Precautions

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

Reworking

- Rework should be completed within 5 seconds under 260C.
- 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 50oC x 30sec. or <30oC x 3min
- Ultrasonic cleaning: < 15W/ bath; bath volume ≤ 1liter
- Curing: 100C max, <3min

Cautions of Pick and Place

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

PLH00250 (R) Customer Approval Signatures	Approved By	Checked By	Prepared By

Record Of Revisions			
Rev.	**Description**	**Date**	**Page**
0	Released Spec	06/01/15	--
1	Revised IV(mcd)	07/08/15	2