Harvatek Surface Mount LED Data Sheet
HT-150UYG-5307

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LIFE SUPPORT POLICY

HARVATEK's products are not authorized for use as critical components in life support devices or systems without the express written approval of the President of HARVATEK or HARVATEK INTERNATIONAL. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.

2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

Product Specifications

Product	Emission Color	Technology	Test Current I_F (mA)	Luminous Intensity I_V (mcd)	Forward Voltage V_F (V)	Orderable Part Number
HT-150UYG-3318	Ultra Bright Yellow Green	AlInGaP	20	80 typ	2.0 typ	HT-150UYG-5307

	Specification	Material	Quantity
Resin	Water clear	Epoxy resin	
Carrier tape	Per EIA 481-1A specs	Conductive black tape	3000pcs per reel
Reel	Per EIA 481-1A specs	Conductive black	
Label	HT standard	Paper	
Packing bag	220x240mm	Aluminum laminated bag/ no-zipper	One reel per bag
Carton	HT standard	Paper	

Others:

Each immediate box consists of 5 reels. The 5 reels may not necessarily have the same lot number or the same bin combinations of Iv, λ_D and Vf. Each reel has a label identifying its specification; the immediate box consists of a product label as well.

ATTENTION: Electrostatic Discharge (ESD) protection

The symbol to the left denotes that ESD precaution is needed. ESD protection for GaP and AlGaAs based chips is necessary even though they are relatively safe in the presence of low static-electric discharge. Parts built with AlInGaP, GaN, or/and InGaN based chips are **STATIC SENSITIVE devices**. ESD precaution must be taken during design and assembly.

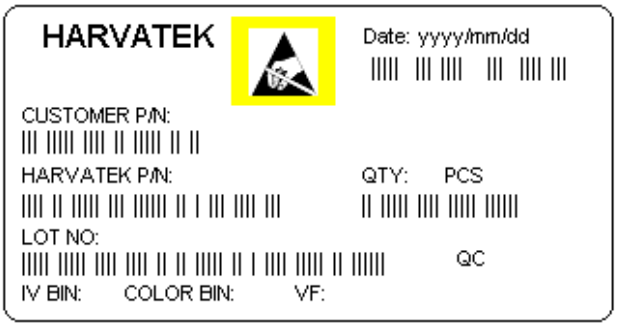
If manual work or processing is needed, please ensure the device is adequately protected from ESD during the process.

Compliant and Certification

ISO9002, QS9000 and ISO14001 Certified

RoHS Compliant

Label Specifications



■ Harvatek P/N:

H T - 1 5 0 UYG - 5307

Series Name	Emitting Color	Customer Code
HT-150 **HT: Harvatek** **150: 1206 series** **3.2 (L) x 1.6 (W) x 1.1 (H) mm**	**UYG: Ultra Bright Yellow Green**	**5307** **Customer Product Code**

Lot No.:

1	2	3	4	5	6	7	8	9	10
P	**1**	**2**	**2**	**3**	**0**	**A**	**-**	**D**	**T**

Code 1	Code 2	Code 3	Code 4, 5	Code 6, 7	Code 9	Code 10
	Mfg. Year	Mfg. Month	Mfg. Date	Lots	Resin Color	Packaging
Internal Tracing Code	Z: 2000 1: 2001 2: 2002 3: 2003 …..	1: Jan. 2: Feb. …. 9: Sep. A: Oct. B: Nov. C: Dec.	1~31/ (30)	01~99, A,B,C…	D: Diffused	T: Tape & Reel

■ Luminous Intensity (Iv) Bin:

Bin	Luminous Intensity Range (mcd)		Bin	Luminous Intensity Range (mcd)	
	Minimum	Maximum		Minimum	Maximum
N1	28.5	36.0	N2	36.0	45.0
P1	45.0	56.0	P2	56.0	71.5
Q1	71.5	90.0	Q2	90.0	112.5
R1	112.5	140.0	R2	140.0	180.0

@20mA / Ta=25^{O} C, Tolerance: ± 10%

■ Wavelength (λ_D) Bin

Bin	Wavelength Range (nm)	
	Yellow Green (UYG)	
	Min	Max
B	564.5	567.5
C	567.5	570.5
D	570.5	573.5
E	573.5	576.5

@20mA / Ta=25^{O} C, Tolerance: ± 0.5nm

■ Forward Voltage (V_F) Bin:

Color	Bin Code	Spec. Range
Ultra Bright (UYG)	-	2.4 V max

@20mA / Ta=25℃, Tolerance: ± 0.05 V

Product Characteristics

Absolute Maximum Ratings

Product	Emission Color	P_d (mW)	I_F (mA)	I_{FP}* (mA)	V_R (V)	T_{OP} (°C)	T_{ST} (°C)
HT-150UYG	Ultra Bright Yellow Green	72	30	100	5	-30°C~+80°C	-40°C~+85°C

* Condition for I_{FP} is pulse of 1/10 duty and 0.1msec width

Electro-Optical Characteristics

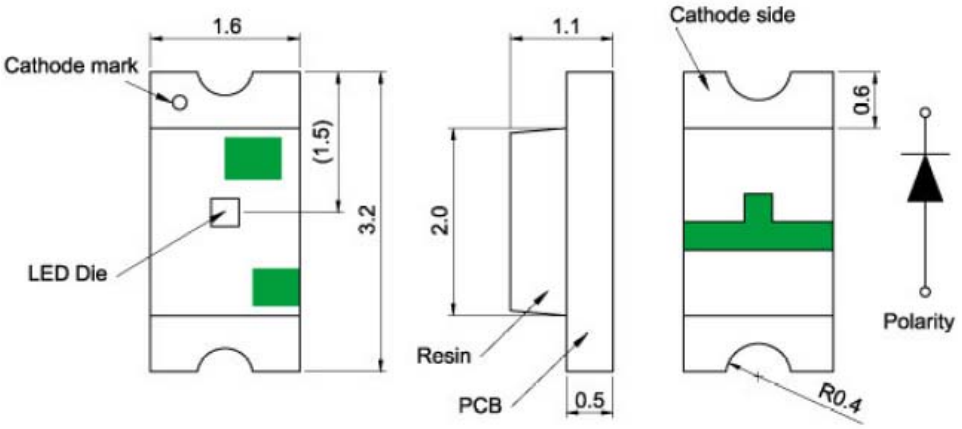
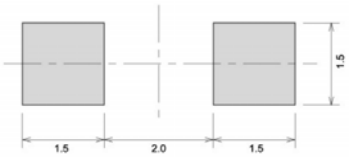
(T_a 25 °C)

Product	Emission Color	I_F(mA)	V_F(V)		λ(nm)			I^*_V(mcd)	
			typ	max	λ_D	λ_P	△λ	min	typ
HT-150UYG	Ultra Bright Yellow Green	20	2.0	2.4	573	574	20	28.5	80

* Per NIST standards

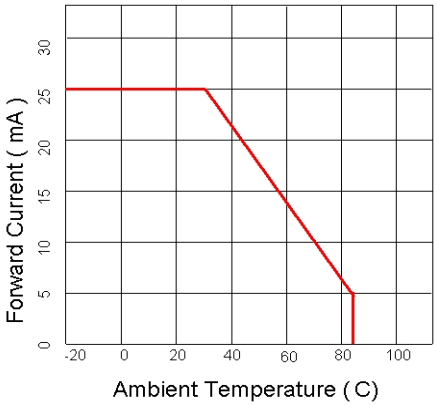
Package Outline Dimension
Recommended Soldering Pattern for Reflow Soldering

Unit: mm Tolerance: +/-0.1

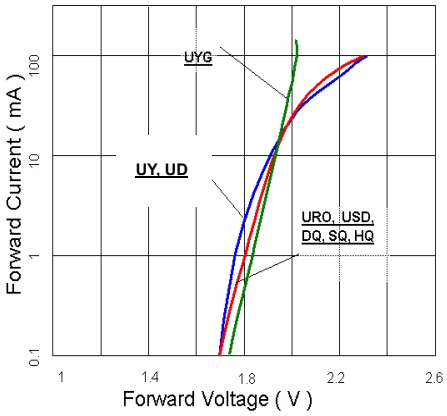
Outline Dimension	Solder Pattern
 1. Soldering terminal may shift in x, y direction. 2. Polarity referring onto the cathode line is reversed on the UR.	
Soldering terminals may shift in the x, y direction.	Unit: mm

Characteristic Curves for UYG

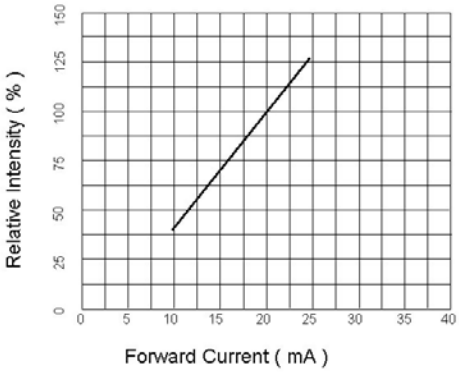
Forward Current vs. Ambient Temperature



Forward Voltage vs. Forward Current

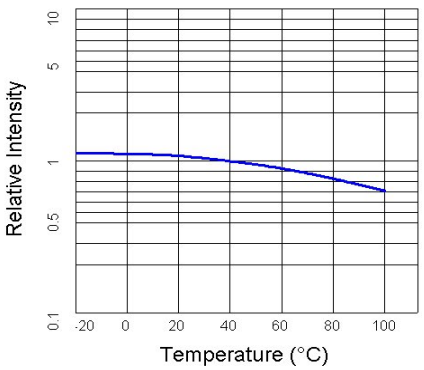


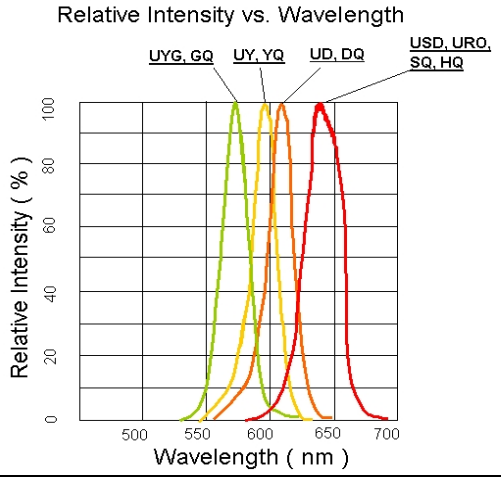
Relative Intensity vs. Forward Current



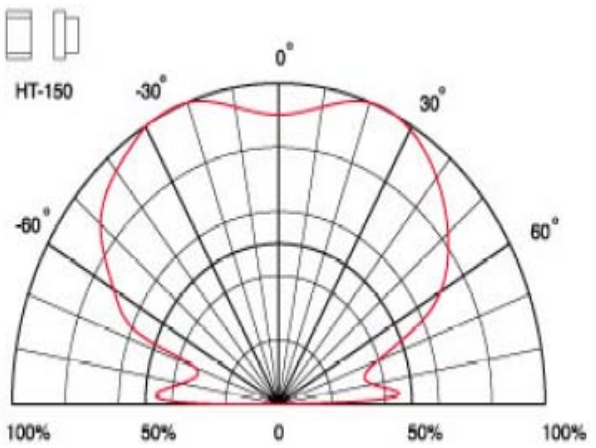
Relative Intensity vs. Ambient Temperature

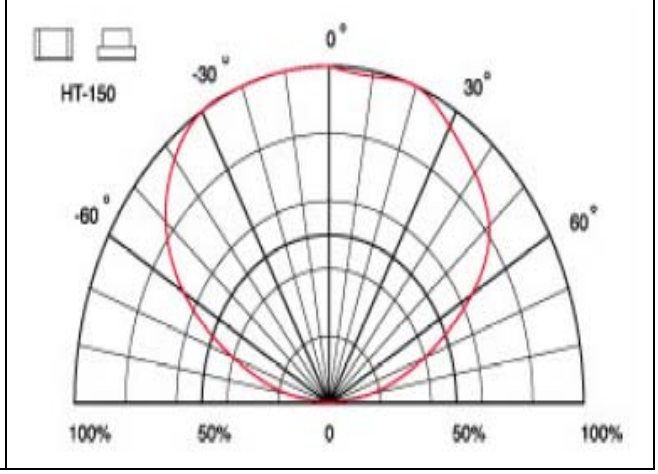
Plused 20mA; 300us pulse, 10ms peroid





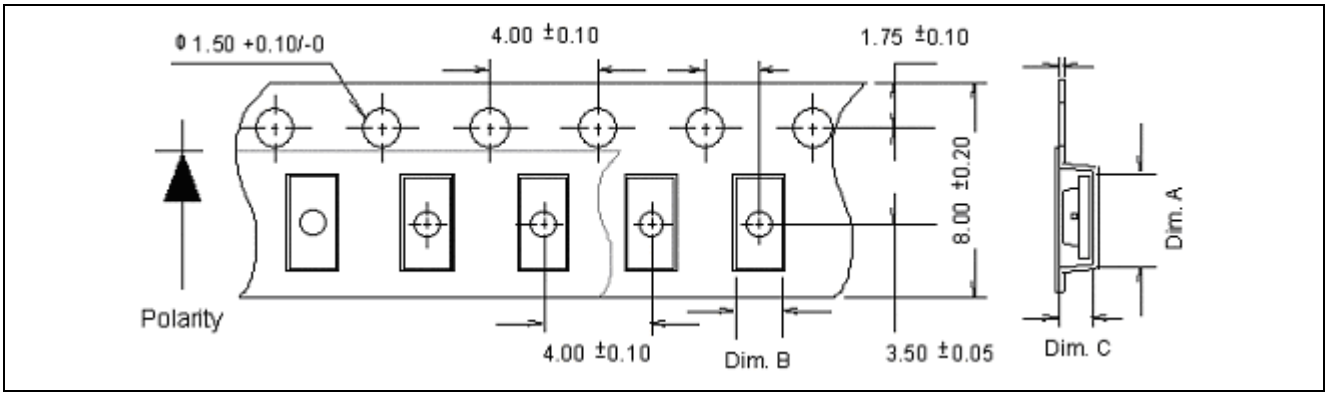
Characteristic Curves for All Colors (Radiation Pattern)





Packaging

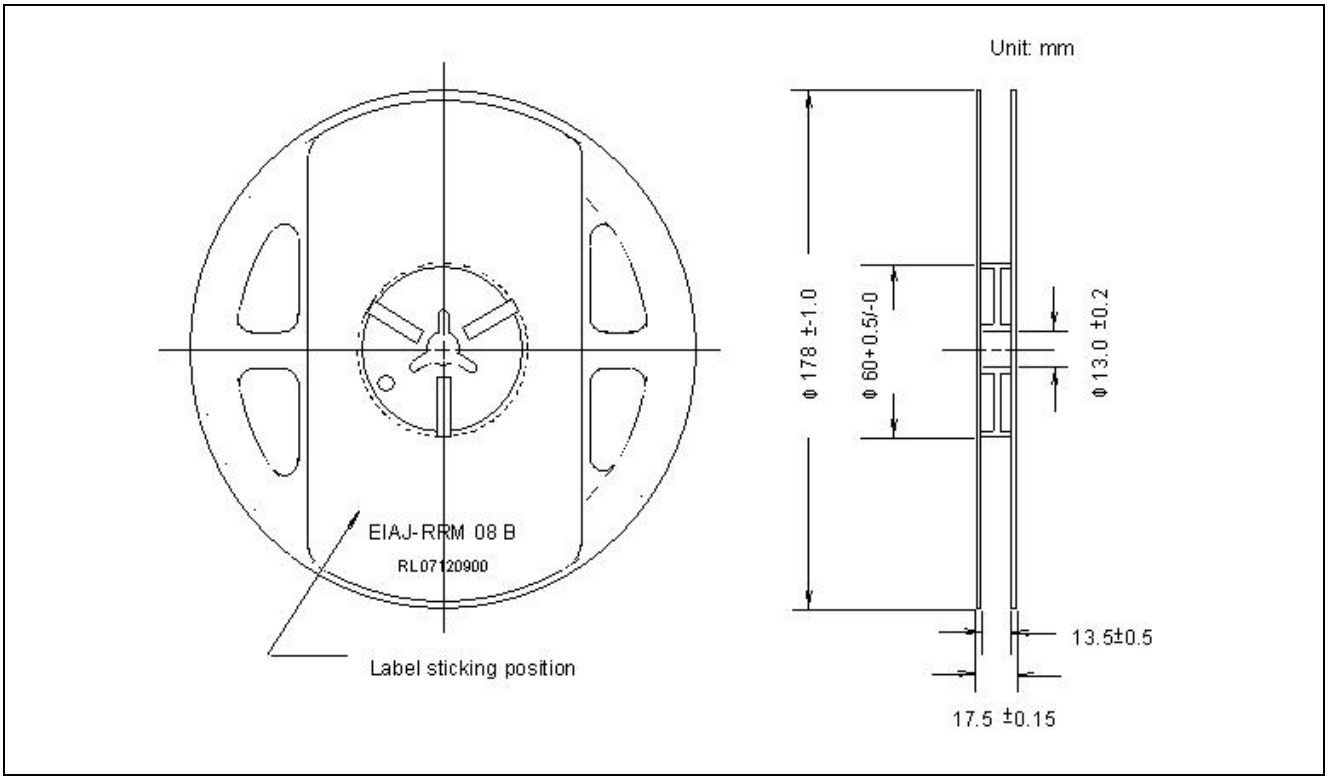
Tape Dimension



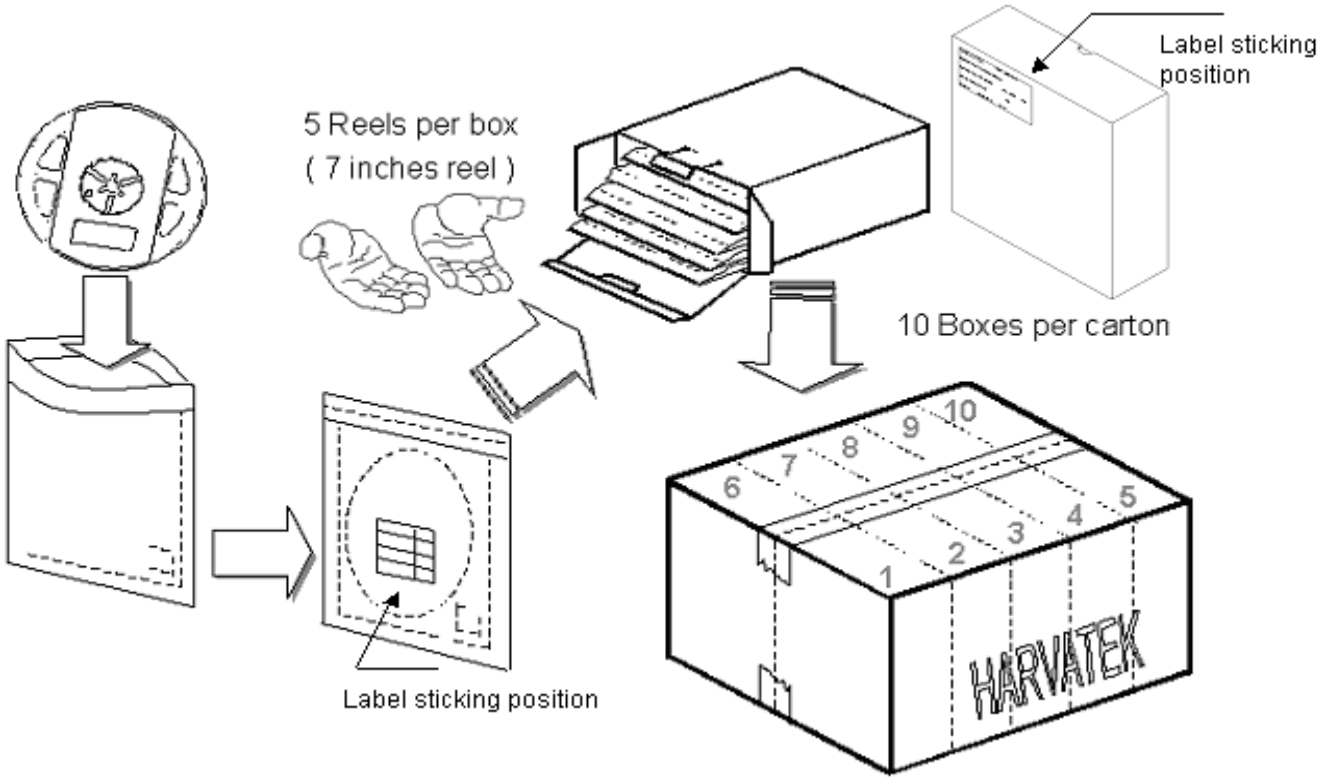
Part No.	Dim. A	Dim. B	Dim. C	Q'ty/Reel
HT-150	3.50±0.10	1.88±0.10	1.27±0.10	3K

Unit: mm

Reel Dimension



Packing



5 boxes per carton is available depending on shipment quantity.

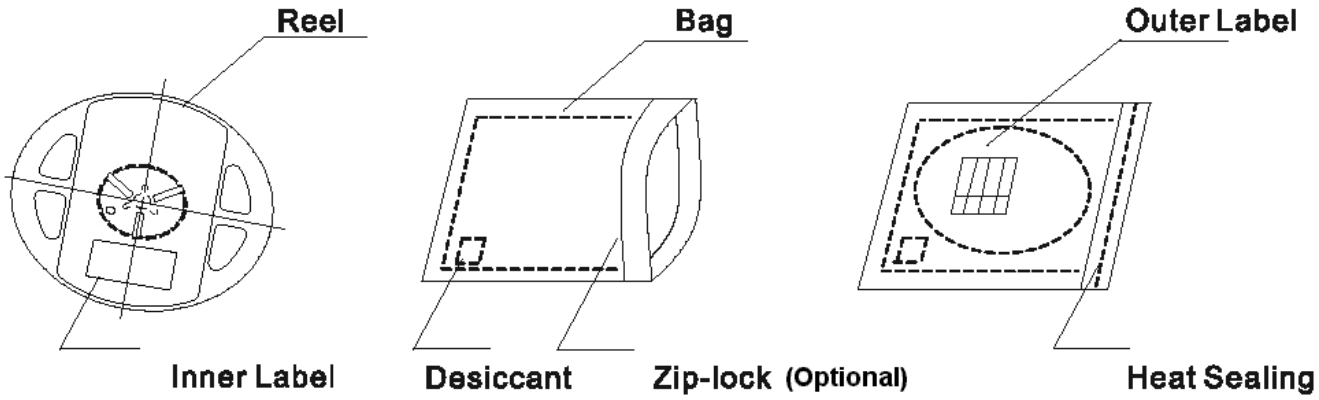
	Specification	Material	Quantity
Carrier tape	Per EIA 481-1A specs	Conductive black tape	3000pcs per reel
Reel	Per EIA 481-1A specs	Conductive black	
Label	HT standard	Paper	
Packing bag	220x240mm	Aluminum laminated bag/ no-zipper	One reel per bag
Carton	HT standard	Paper	Non-specified
Others: Each immediate box consists of 5 reels. The 5 reels may not necessarily have the same lot number or the same bin combinations of Iv, λ_D and Vf. Each reel has a label identifying its specification; the immediate box consists of a product label as well.			

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.

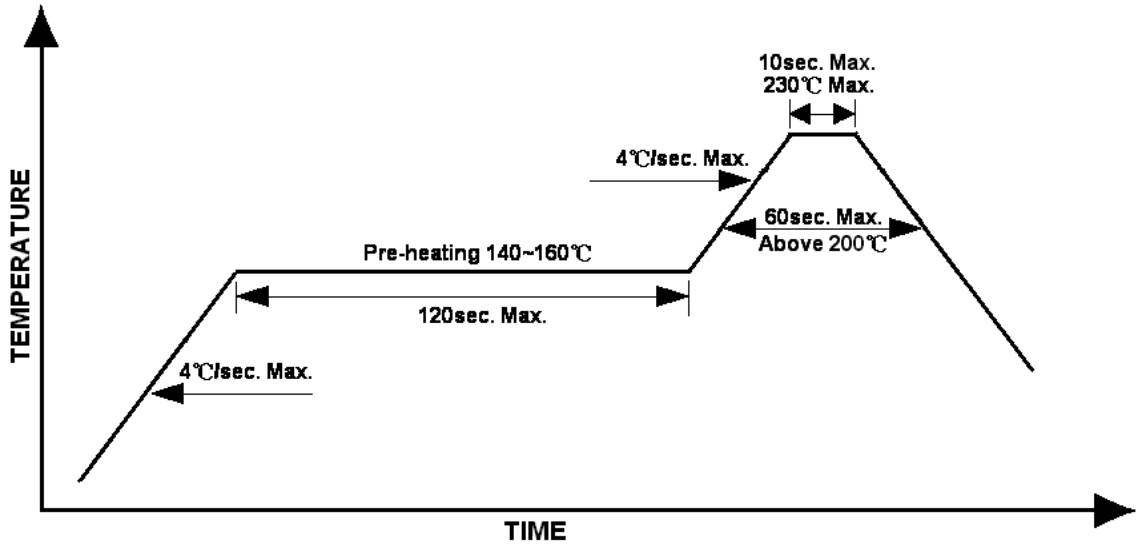
The packaging sequence is as follows:



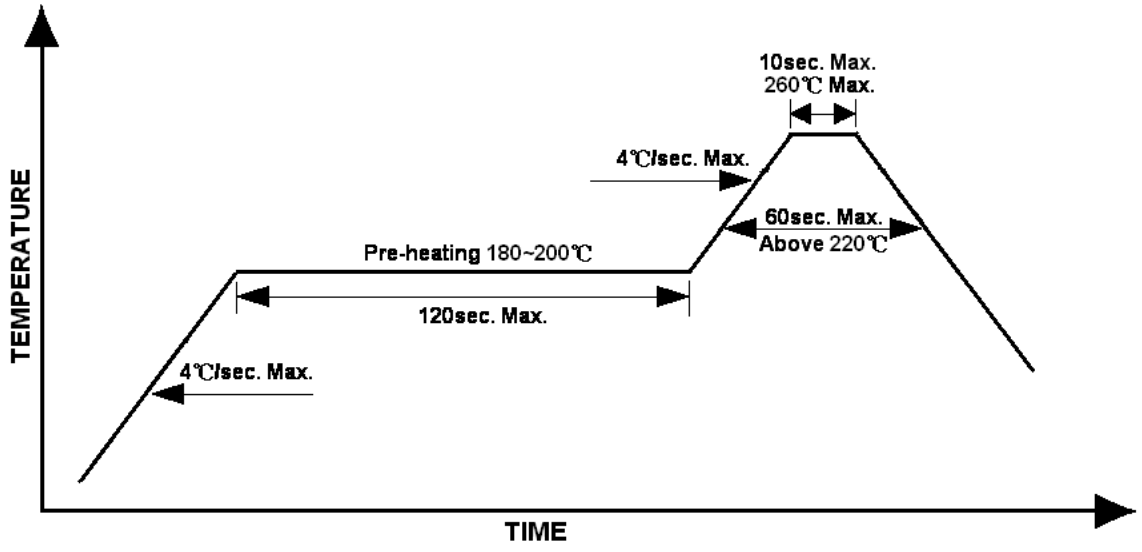
Reflow Soldering

- 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

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 beyond the specified limit.
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 ^{O}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^{o}C x 30sec. or <30^{o}C x 3min
- Ultra sonic cleaning: < 15W/ bath; bath volume ≤ 1liter
- Curing: 100 ^{O}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.

Revision History

Changes since last revision	Page	Version No.	Revision Date
Initial release of stamp off 5307		1.0	07-27-2009