

**Harvatek Surface Mount CHIP LED Data Sheet
HT-T169UY-YYY2**

Official Product	HT Part No. HT-T169UY-YYY2	Customer Part No.		Data Sheet No.
Tentative Product	*****	*****		
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DISCLAIMER

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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.

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Product Specifications

	Specification	Material	Quantity
Iv	S:180-285 mcd T: 285-360 mcd @20mA/ Ta= 25 ^o ;Tolerance: $\pm 10\%$		
λ_D	582-594.5 nm @20mA/ Ta= 25 ^o C;Tolerance: $\pm 0.5\text{nm}$		
Vf	1.6-2.4 V @20mA/ Ta= 25 ^o C ;Tolerance: $\pm 0.05\text{V}$		
Ir	< 100 μA @ $V_R = 5\text{ V}$		
Resin	Clear	Silicon Resin	
Carrier tape	EIA 481-1A specs	Conductive black tape	2000pcs per reel
Reel	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.

ATTENTION: Electrostatic Discharge (ESD) protection

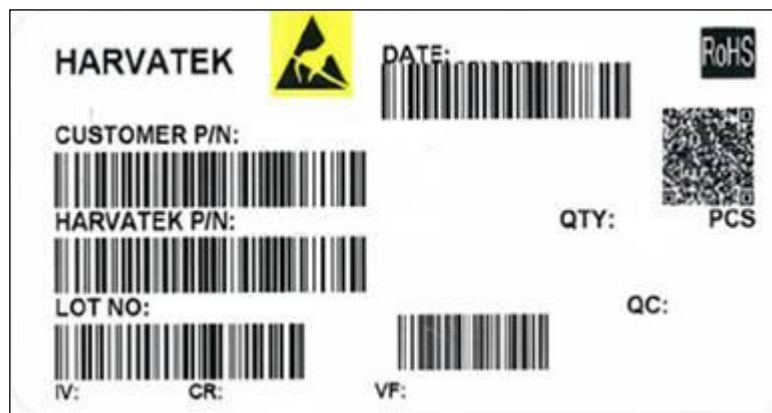


The symbol to the left denotes that ESD precaution is needed. ESD protection for GaP and AlGaAs based chips is necessary even though they are relatively safe in the presence of low static-electric discharge. Parts built with AlInGaP, GaN, or/and InGaN based chips are **STATIC SENSITIVE devices**. ESD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

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Label Specifications



Customer P/N: To Be Defined

HT-T169 - UY

Series Name	Emitting Color
HT-T169 3.2(L)x2.7(W)x1.8(H) mm	UY: Ultra Bright Yellow @20mA

Lot No.:

1	2	3	4	5	6	7	8	9	10
E	1	A	1	A	2	2	L	1	2
Code 1 2		Code 3	Code 4	Code 5	Code 6	Code 7	Code 8	Code 9	Code 10
		Mfg. Year	Mfg. Month	Mfg. Date	Consecutive number		Special code		
Internal Tracing Code		2010-A	1:Jan.	1:A	01~ZZ		000~ZZZ		
		2011-B	2:Feb.	2:B					
		2012-C	...	3:C					
		2013-D	...	26:Z					
		.	A:Oct.	27:7					
		.	B:Nov.	28:8					
		.	C:Dec.	29:9					
				30:3					
				31:4					

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Product specifications**■ Luminous Intensity (Iv) Bin:**

Color	Bin Code	Spec. Range
Ultra Bright Yellow	S	180-285 mcd
	T	285-360 mcd

■ Dominant Wavelength (λ_D) Bin:

Color	Bin Code	Spec. Range
Ultra Bright Yellow	A	582-584.5 nm
	B	584.5-587 nm
	C	587-589.5 nm
	D	589.5-592 nm
	E	592-594.5 nm

■ Forward Voltage (Vf) Bin:

Color	Bin Code	Spec. Range
Ultra Bright Yellow	--	1.6-2.4 V

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Product Features

Electro-Optical Characteristics

(I_F @ 20mA, T_a 25 °C)

Code for parts	Lighting Color		V_F (V)		λ (nm)			I_V (mcd)
			typ	max	λ_D	λ_P	$\Delta \lambda$	Typical
HT-T169UY	Ultra Bright Yellow	AlInGaP	1.9	2.4	589	591	20	285

Package Outline Dimension and Recommended Soldering Pattern for Reflow Soldering

Unit: mm Tolerance: +/-0.1

Outline Dim.	Soldering Pattern
Soldering terminals may shift in the x, y direction.	

Absolute Maximum Ratings

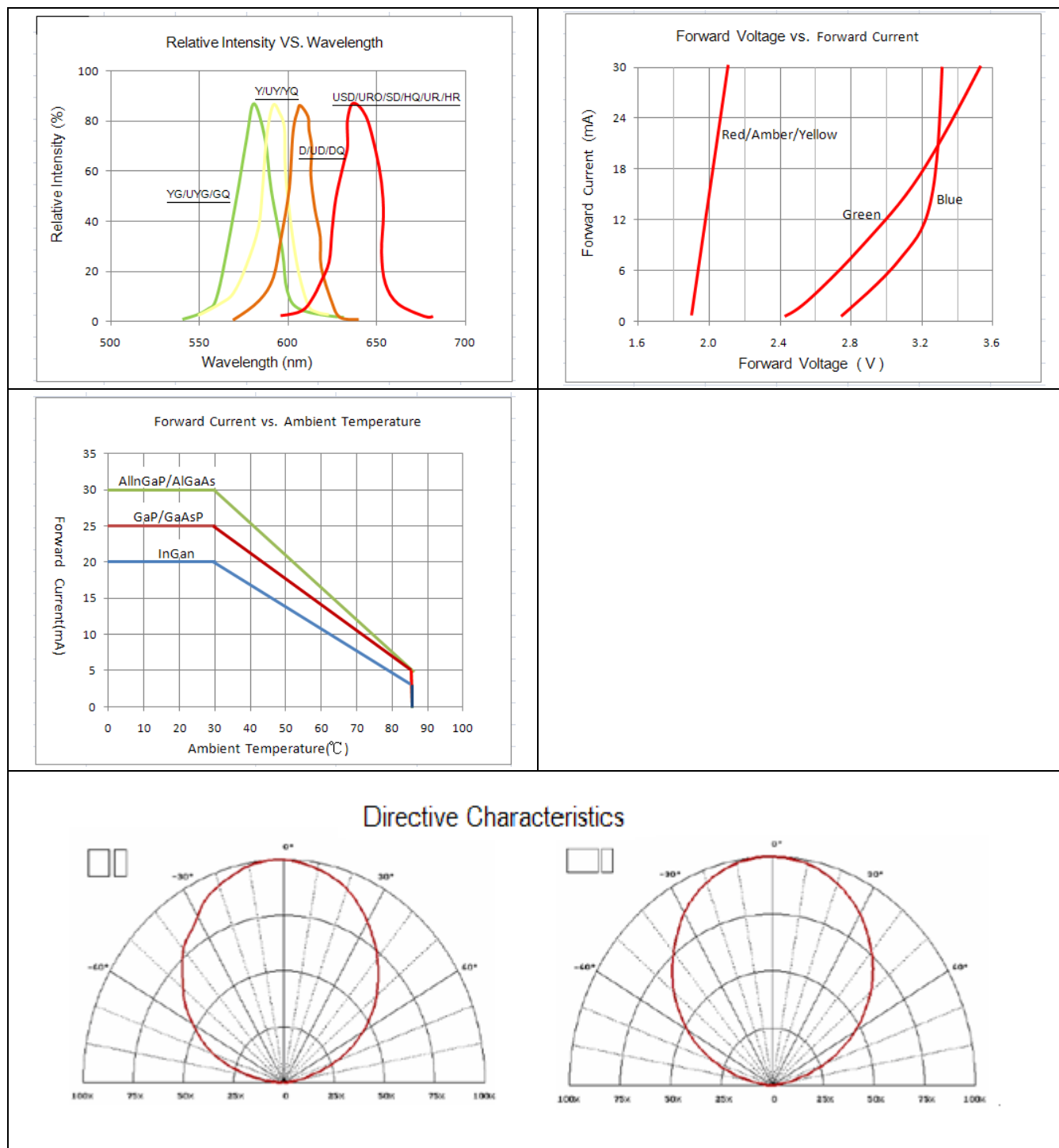
(T_a 25 °C)

Series	P_d (mW)	I_F (mA)	I_{FP} (mA)**	V_R (V)	I_R (uA)	T_{OP} (°C)	T_{ST} (°C)
HT-T169UY	168	70	150	5	<100@ $V_R = 5$	-40~+100	-40~+100

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

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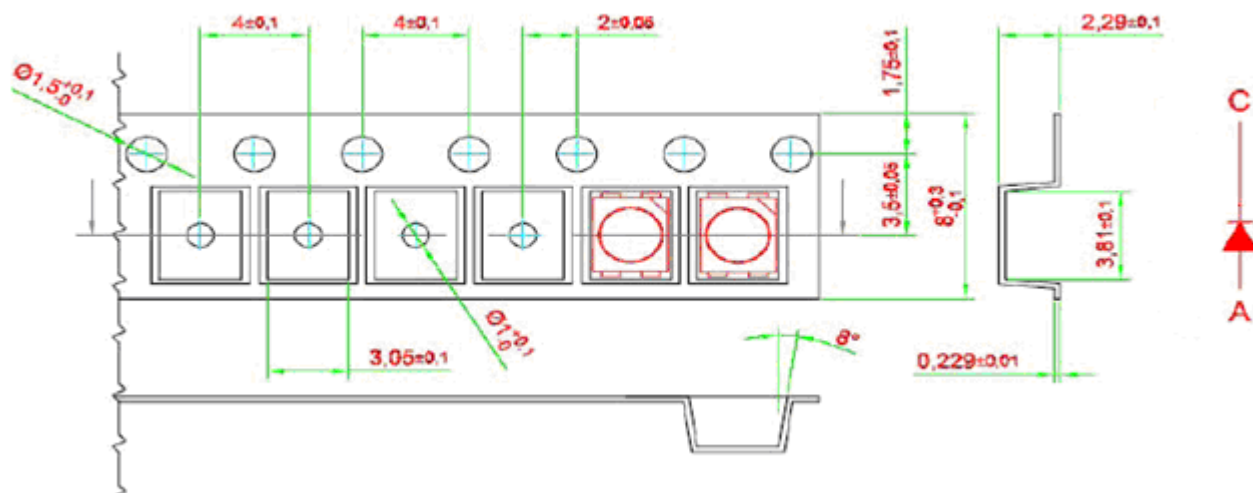
Characteristics of HT-T169 Series



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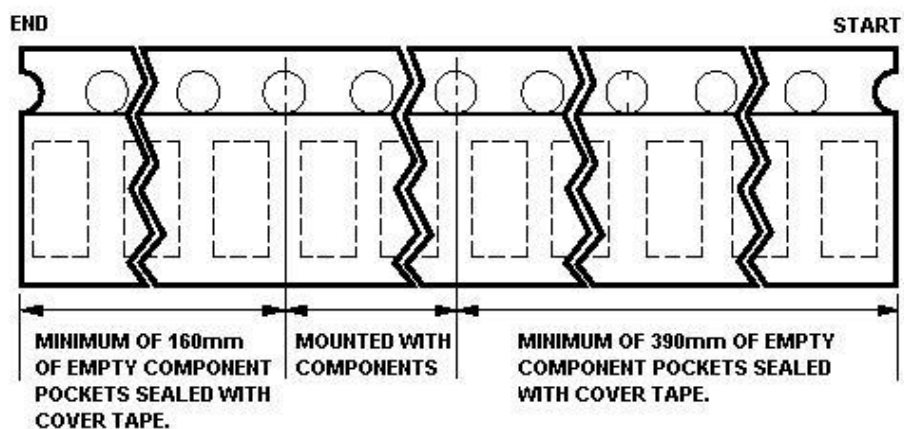
Packaging

Tape Dimension



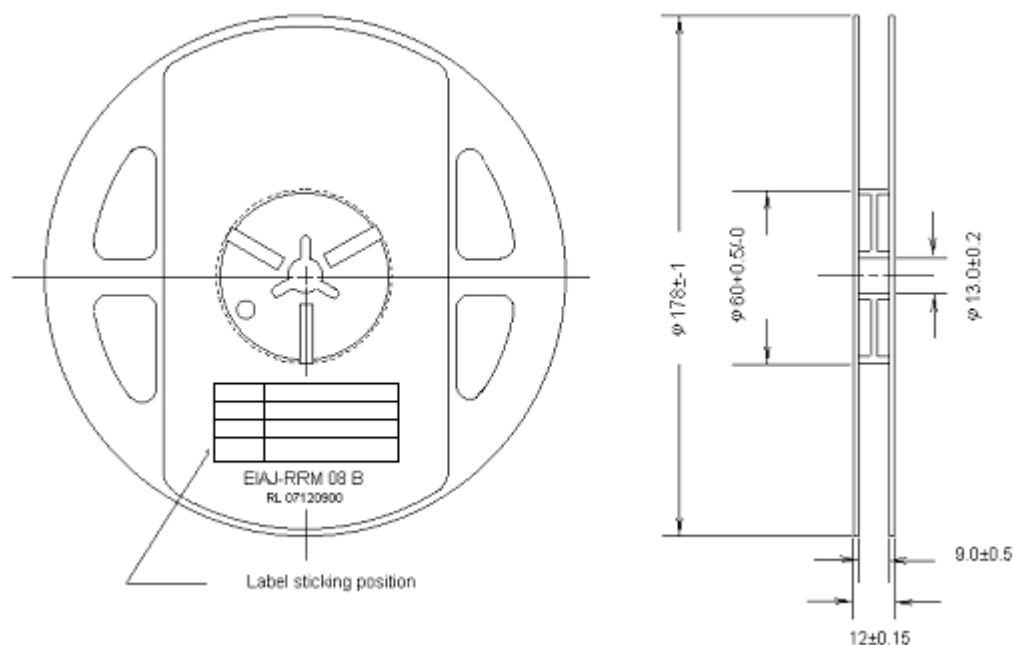
Part No.	Dim. A	Dim. B	Dim. C	Q'ty/Reel
HT-T169	3.73±0.10	2.95±0.10	2.12±0.10	2K

Unit: mm

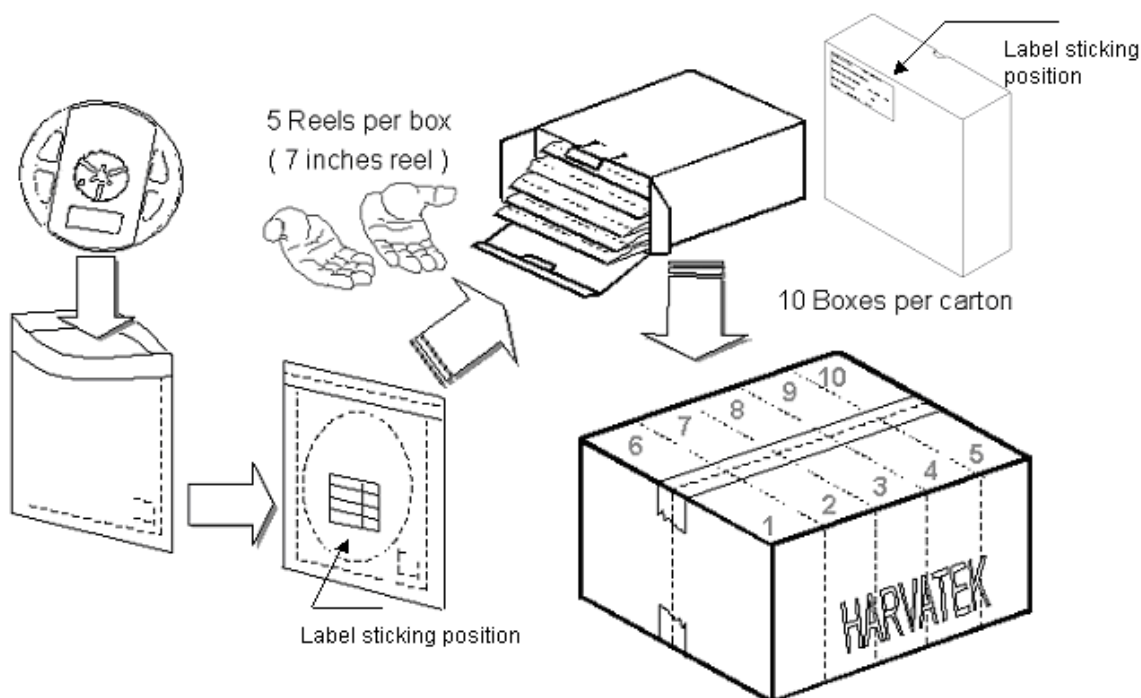


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Reel Dimension



Packing



5 boxes per carton is available depending on shipment quantity.

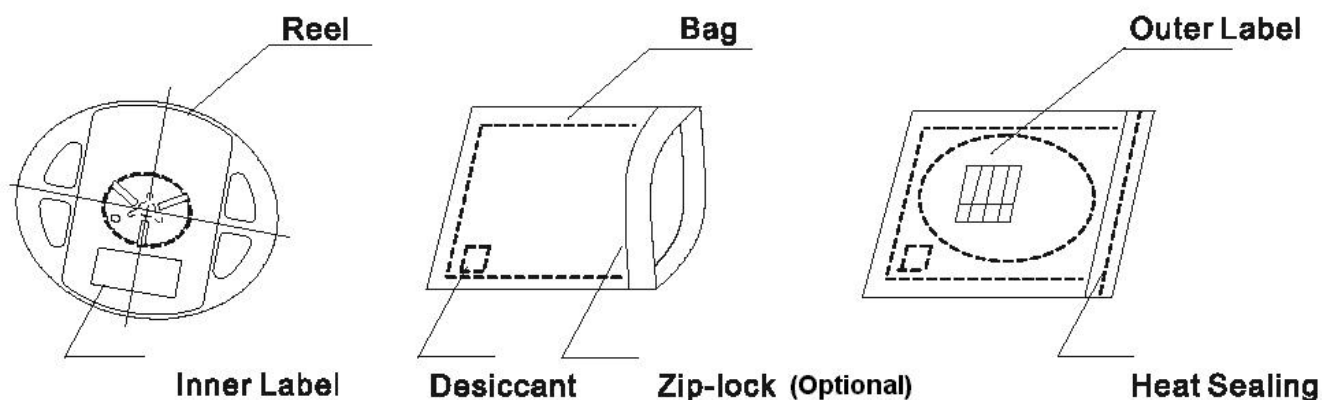
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Dry Pack

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:



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.

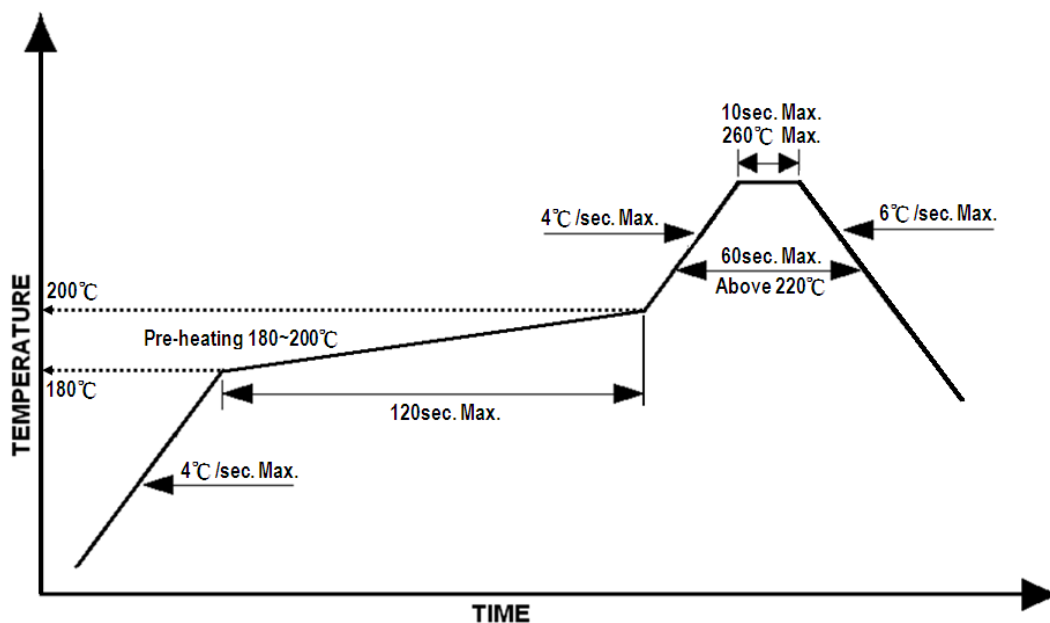
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Reflow Soldering

Recommend soldering paste specifications:

1. Operating temp.: Above 220 °C ,60 sec.
2. Peak temp.:260 °CMax.,10sec Max.
3. Never attempt next process until the component is cooled down to room temperature after reflow.
4. The recommended reflow soldering profile (measured on the surface of the LED terminal) is as following:

Lead-free Solder Profile



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
- Ultrasonic cleaning: < 15W/ bath; bath volume ≤ 1liter
- Curing: 100 °C max, <3min

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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.

Revise History

Rev.	Descriptions	Date	Page
1.0	-	09/28/2011	-

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