

PRODUCT SPECIFICATION

Model No.: FYLS-3528NPTB

Features:

- SMD Type
- Size (mm): 3.50*2.80*1.85
- Emitting Color: phototransistor.
- Lens Color: Black.
- SMT package
- Suitable for all SMT assembly and soldering method
- Pb-free Reflow soldering application
- RoHS Compliant
- MSL:6

Applications:

- Mouse
- Optoelectronic switch
- Copiers
- Scanners
- Amusement machines
- Surveillance system
- Wireless communication



CUSTOMER APPROVED SIGNATURES	APPROVED BY	SALES BY	PREPARED BY
		Foryard S020 2024.01.29	Foryard E001 2024.01.29

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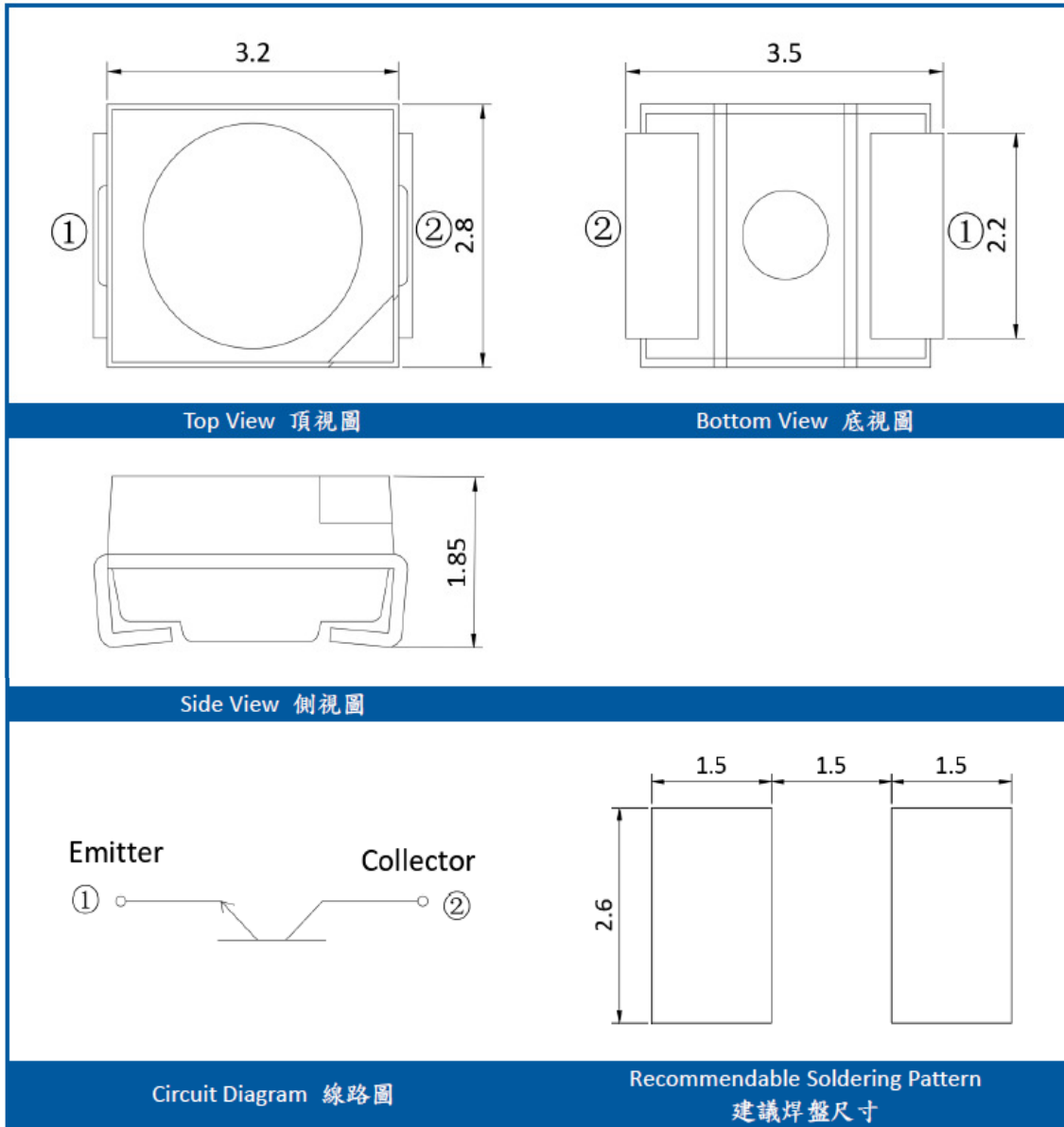
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Model No.: FYLS-3528NPTB

■ Mechanical Dimensions



Notes:

1. Dimension in millimeter, tolerance is ± 0.10 .
2. Angle: $\pm 5^\circ$
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
4. The drawing is different from the actual one, please refer to the sample.

Model No.: FYLS-3528NPTB

■ Absolute Maximum Ratings(Ta=25°C)

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	75	mW
Collector-Emitter Voltage	BV_{CEO}	30	V
Emitter-Collector Voltage	BV_{ECO}	5	V
Collector Current	I_C	20	mA
Operating Temperature Range	T_{opr}	-25~ +85	°C
Storage Temperature Range	T_{stg}	-40~ +100	°C
Soldering Temperature	T_{sol}	Reflow soldering : 260°C , 3s	

*Pulse Width $\leq 100 \mu s$, Duty Cycle=1%

■ Typical Electrical & Optical Characteristics(Ta=25°C)

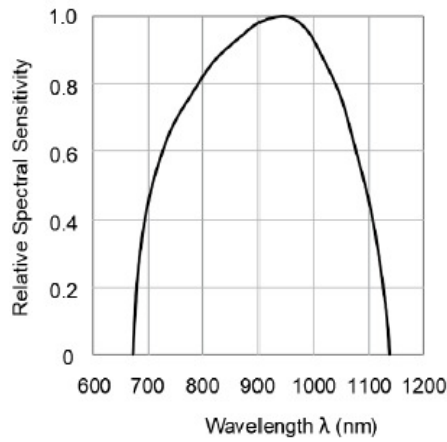
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Wavelength Of Peak Sensitivity	λ_p	---	---	940	---	nm
Range Of Spectral Bandwidth	$\lambda_{0.5}$	---	700	---	1100	nm
Collector-Emitter Voltage	BV_{CEO}	$I_C = 100 \mu A$ $E_e = 0mW/cm^2$	30	---	---	V
Emitter-Collector Voltage	BV_{ECO}	$I_E = 100 \mu A$ $E_e = 0mW/cm^2$	5	---	---	V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = 2mA$ $E_e = 1mW/cm^2$ $\lambda_P = 940nm$	---	---	0.4	V
Collector-Emitter Dark Current	I_{CEO}	$V_{CE} = 20V$ $E_e = 0mW/cm^2$	---	---	100	nA
On State Collector Current	$I_{C(ON)}$	$V_{CE} = 5V$ $E_e = 1mW /cm^2$ $\lambda_P = 940nm$	0.5	---	5	mA
Rise Time	T_R	$V_{CE} = 5V$ $I_C = 1mA$ $R_L = 100\Omega$	---	20	---	μS
Fall Time	T_F		---	20	---	μS

Note:

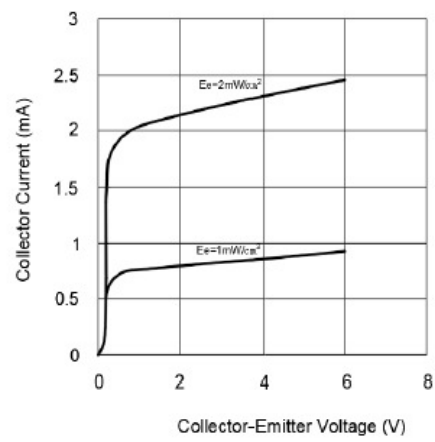
- 1.Luminous Intensity is based on the Foryard standards.
- 2.Pay attention about static for InGaN
- 3.On State Collector Current measurement tolerance: $\pm 10\%$

Model No.: FYLS-3528NPTB

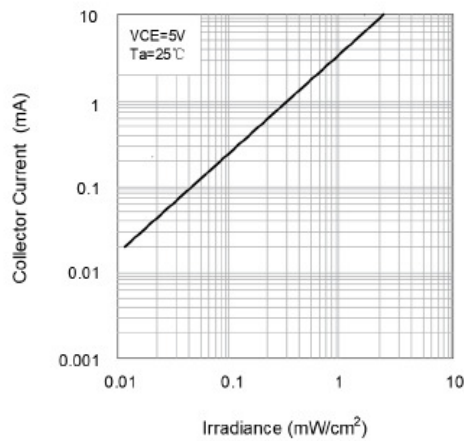
Typical Electrical Optical Characteristics Curves



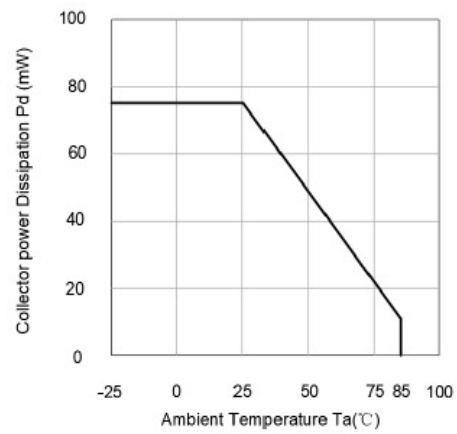
Relative Sensitivity V.S. Wavelength



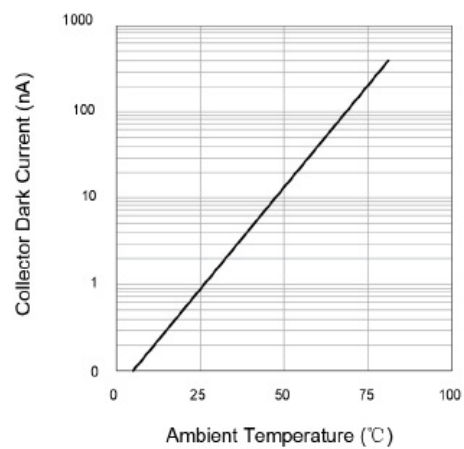
Collector Current V.S. Collector-Emitter Voltage



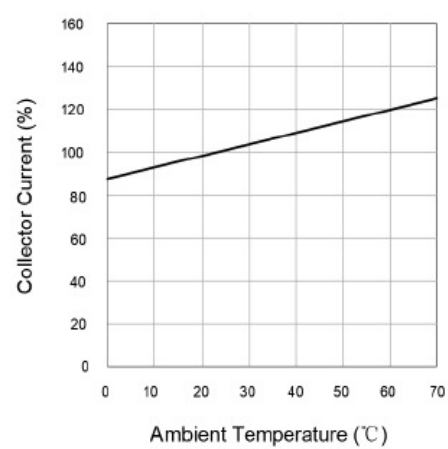
Collector Current V.S. Irradiance



Forward Current Derating Curve



Collector Dark Current V.S. Ambient Temperature



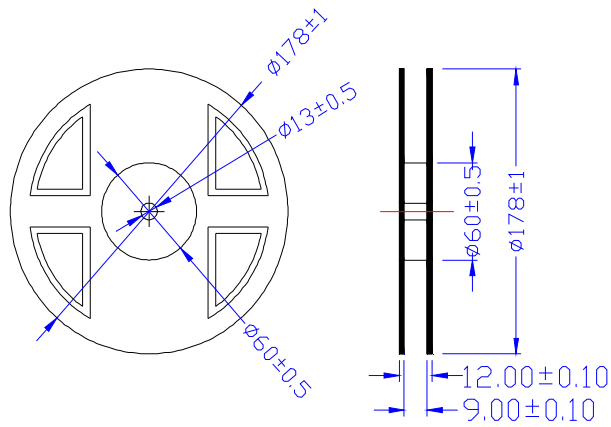
Collector Current V.S. Ambient Temperature

NOTE: 25°C free air temperature unless otherwise specified

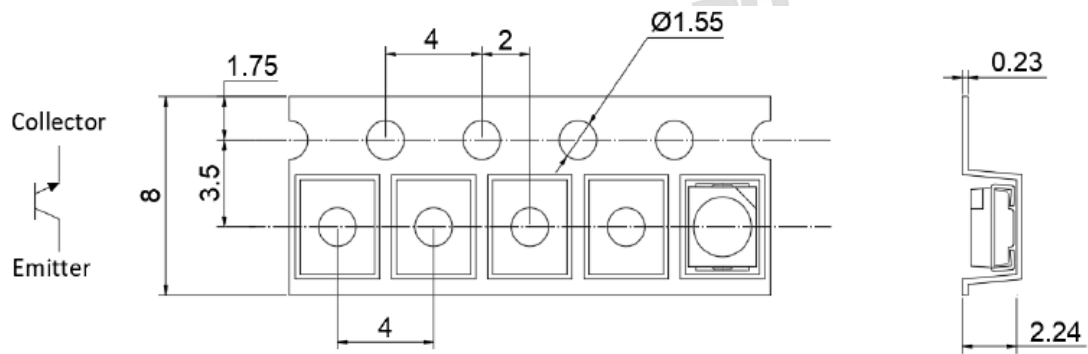
Model No.: FYLS-3528NPTB

■ Package-

1. Reel Dimension



2. Tape Dimension

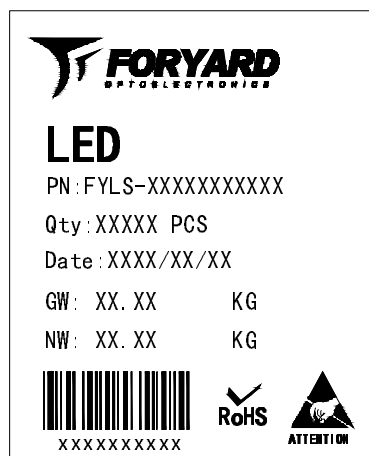
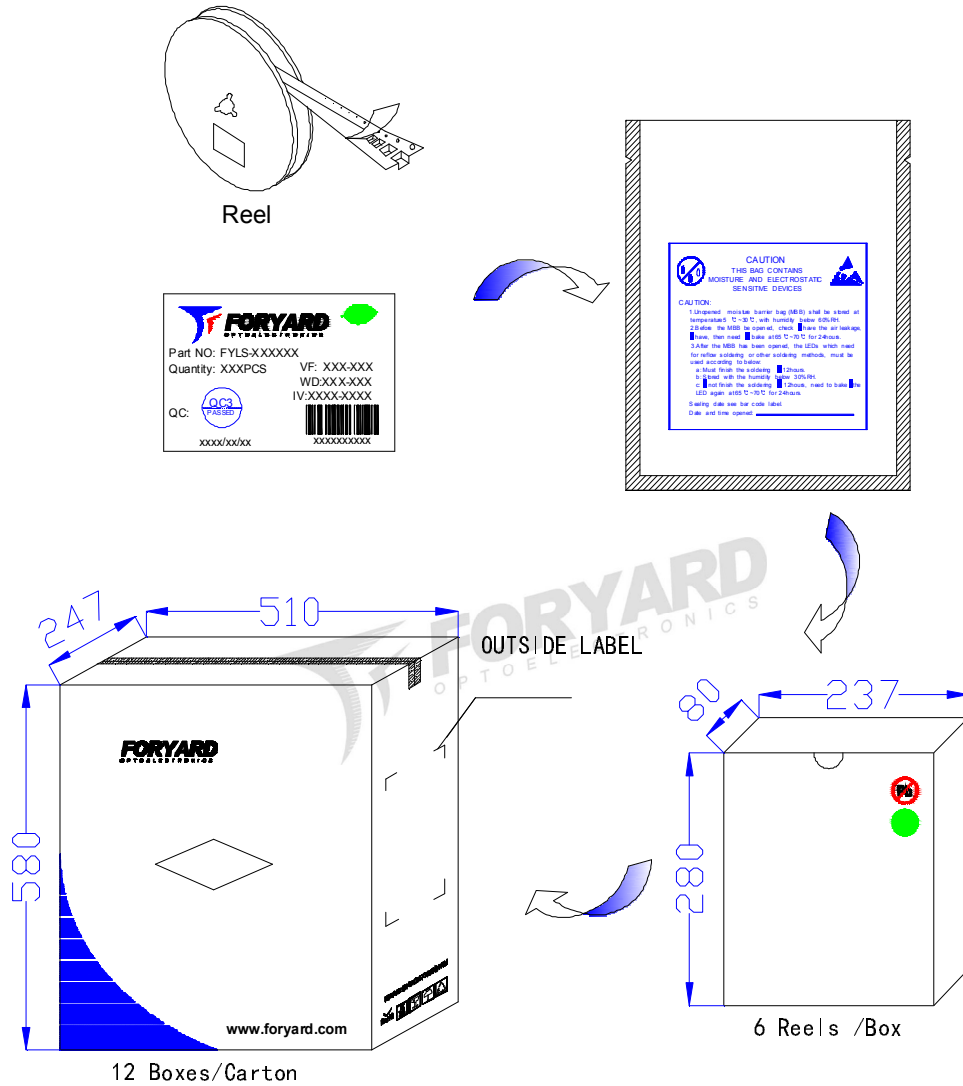


Notice:

1. Tolerance unless mentioned is $\pm 0.2\text{mm}$

Model No.: FYLS-3528NPTB

3. Packing Diagram



OUTSIDE LABEL

Notice:

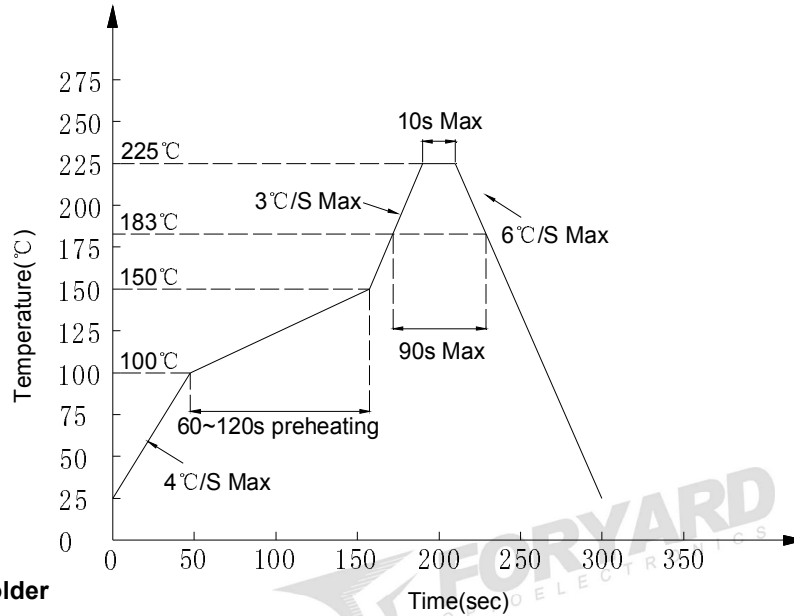
- 1.Quantity:2000 PCS/Reel
- 2.The specifications are subject to change without notice. Please contact us for updated information.

Model No.: FYLS-3528NPTB

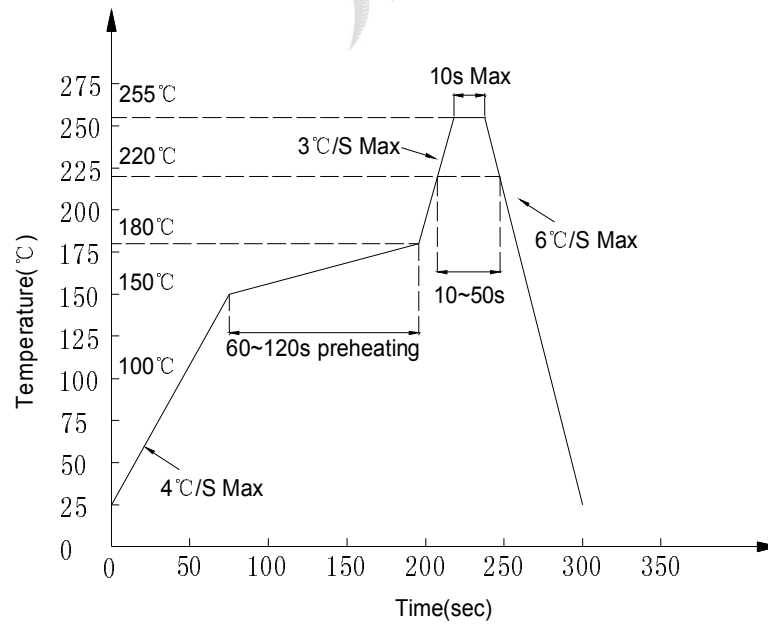
■ Soldering Characteristics-

● Reflow Soldering

● Lead Solder



● Lead-free Solder



Notes:

1. Although the recommended soldering conditions are specified in above table, reflow or hand soldering at the lowest possible temperature is desired for the LEDs.
2. A rapid-rate process is not recommended for cooling the LEDs down from the peak temperature.
3. All temperatures refer to solder Pad.

● Hand Soldering

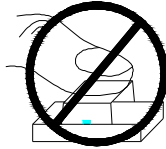
Soldering temperature	300°C Max. (25W Max.)	One time only
Soldering time	3 ±1sec	

Model No.: FYLS-3528NPTB

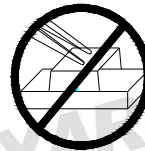
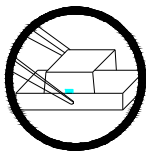
■ Handling of Silicone Resin LEDs-

● Handling Indications

When handling the product, do not touch it directly with bare hands as it may contaminate the surface and affect on optical characteristics. In the worst cases, excessive force to the product might result in catastrophic failure due to package damage and/or wire breakage.

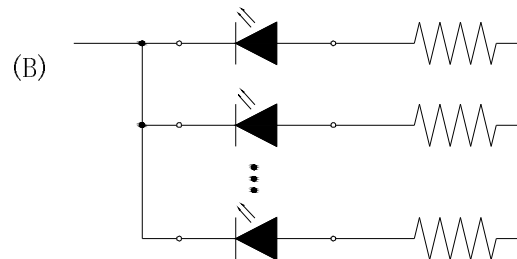
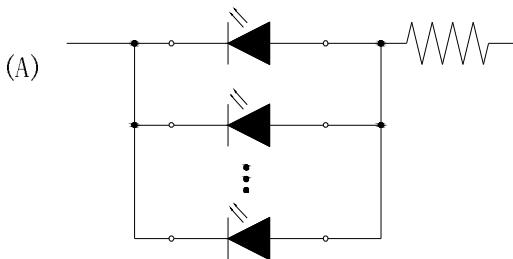


When handling the product with tweezers, LEDs should only be handled from the side and make sure that excessive force is not applied to the resin portion of the product. Failure to comply can cause the resin portion of the product to be cut, chipped, delaminated and/or deformed, and wire to be broken, and thus resulting in catastrophic failure.



■ Recommended circuit-

● In designing a circuit, the current through each LED must not exceed the absolute maximum rating specified for each LED. It is recommended to use Circuit B which regulates the current flowing through each LED. In the meanwhile, when driving LEDs with a constant voltage in Circuit A, the current through the LEDs may vary due to the variation in forward voltage (VF) of the LEDs. In the worst case, some LED may be subjected to stresses in excess of the absolute maximum rating.



● This product should be operated in forward bias. A driving circuit must be designed so that the product is not subjected to either forward or reverse voltage while it is off. In particular, if a reverse voltage is continuously applied to the product; such operation can cause migration resulting in LED damage.

■ Storage-

● Storage Conditions

1. Unopened moisture barrier bag (MBB) shall be stored at temperature below 5°C~30°C, with humidity below 60%RH.
2. Before the MBB be opened, check if have the air leakage, if have, then need to bake at 65°C~70°C for 24hours.
3. After the MBB has been opened, the LEDs which need for reflow soldering or other soldering methods, must be used according to below:
 - a: Must finish the soldering in 12hours
 - b: Stored with the humidity below 30%RH
 - c: If not finish the soldering in 12hours, need to bake the LED again at 65°C~70°C for 24hours