



Data Sheet

Customer: _____
Part No: CL-SP0606RGB-02
Sample No: _____
Description: _____
Item No: _____

Customer			
Check	Inspection	Approval	Date

0606 Package Chip LED

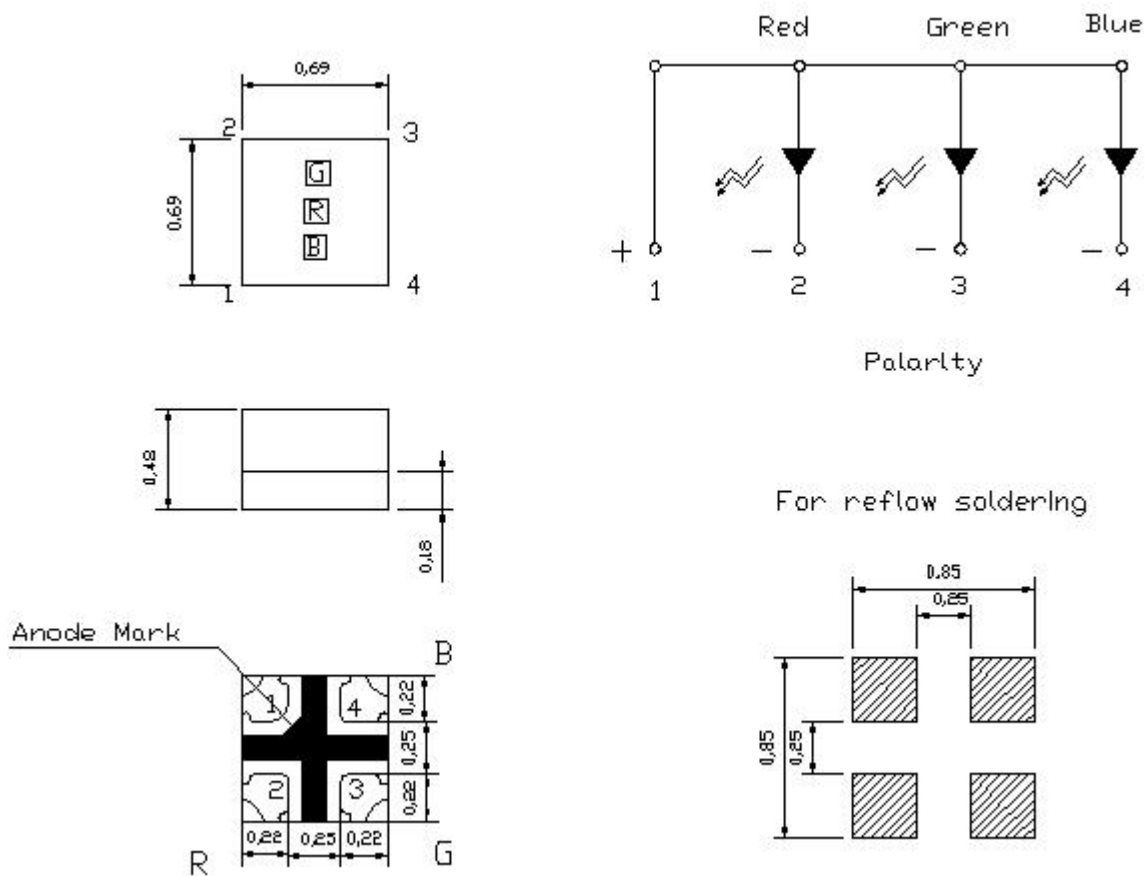
Features

- .0606 package.
- .Full-color type.
- .Compatible with infrared and vapor phase reflow solder process.
- .Package:20000pcs/reel)
- .Pb-free.
- .Component weight is 0.55mg.

Applications

- .Indoor signage display applications.
- .Indoor decorating and entertainment design.
- . switch and symbol.
- .General use.

Package Dimensions



Note: All dimensions is $\pm 0.1\text{mm}$ unless otherwise noted, Unit = mm

Electro-Optical Characteristics (Ta=25°C)

Symbol		Parameter	Min.	Typ.	Max.	Unit	Condition
I _v	R	Luminous Intensity	15.5	-----	33.9	mcd	I _F =5mA
	G		35.4	-----	77.7		I _F =3mA
	B		6.5	-----	14.4		I _F =3mA
V _F	R	Forward Voltage	1.7	-----	2.3	V	I _F =5mA
	G		2.5	-----	3.5		I _F =3mA
	B		2.5	-----	3.5		I _F =3mA
Wd	R	Dominant Wavelength	-----	621	-----	nm	I _F =5mA
	G		-----	527	-----		I _F =3mA
	B		-----	467	-----		I _F =3mA
2θ _{1/2}	Viewing angle		-----	115	-----	deg	I _F =5mA
I _R	Reverse Current		-----	-----	0.5	uA	V _R =10V (DC)

Note:

1. Tolerance of Luminous Intensity: ±10%
2. Tolerance of Dominant Wavelength: ±1nm
3. Tolerance of Forward Voltage: ±0.1V

Absolute Maximum Ratings (Ta=25°C)

Symbol	Parameter	Value	Unit
P _d	Power Dissipation	R:50 G:60 B:60	mW
V _R	Reverse Voltage	10	V
I _F	Forward Current	R:20 G:20 B:20	mA
I _{FP}	Peak Forward Current (Duty 1/10 @1KHz)	R:50 G:50 B:50	mA
T _j	Junction Temperature	115	°C
ESD	Electrostatic Discharge(HBM)	R:2000 G:1000 B:1000	V
T _{opr}	Operating Temperature	-40~ +85	°C
T _{stg}	Storage Temperature	-40~ +110	°C
T _{sol}	Soldering Temperature	260	°C

R:
Bin Range Of Luminous Intensity

Bin	Min	Max	Unit	Condition
E0	15.5	20.1	mcd	$I_F=5mA$
F0	20.1	26.1		
H0	26.1	33.9		

 @5mA/ $T_a=25^{\circ}C$, Tolerance:±10%

Bin Range Of Dominant Wavelength

Bin	Min	Max	Unit	Condition
R1	619	624	nm	$I_F=5mA$
R2	624	629		

 @5mA/ $T_a=25^{\circ}C$, Tolerance:±1nm

Bin Range Of Luminous Voltage

Bin	Min	Max	Unit	Condition
R0	1.7	2.3	V	$I_F=5mA$

 @5mA/ $T_a=25^{\circ}C$, Tolerance:±0.1V

G:
Bin Range Of Luminous Intensity

Bin	Min	Max	Unit	Condition
K0	35.4	46.0	mcd	$I_F=3mA$
L0	46.0	59.8		
M0	59.8	77.7		

@3mA/Ta=25°C, Tolerance:±10%

Bin Range Of Dominant Wavelength

Bin	Min	Max	Unit	Condition
G1	525.5	529.5	nm	$I_F=3mA$
G2	529.5	533.5		

@3mA/Ta=25°C, Tolerance:±1nm

Bin Range Of Luminous Voltage

Bin	Min	Max	Unit	Condition
G0	2.5	3.5	V	$I_F=3mA$

@3mA/Ta=25°C, Tolerance:±0.1V

B:
Bin Range Of Luminous Intensity

Bin	Min	Max	Unit	Condition
A0	6.5	8.5	mcd	$I_F=3mA$
C0	8.5	11.1		
D0	11.1	14.4		

 @3mA/ $T_a=25^{\circ}C$, Tolerance:±10%

Bin Range Of Dominant Wavelength

Bin	Min	Max	Unit	Condition
B1	464.0	468.0	nm	$I_F=3mA$
B2	468.0	472.0		

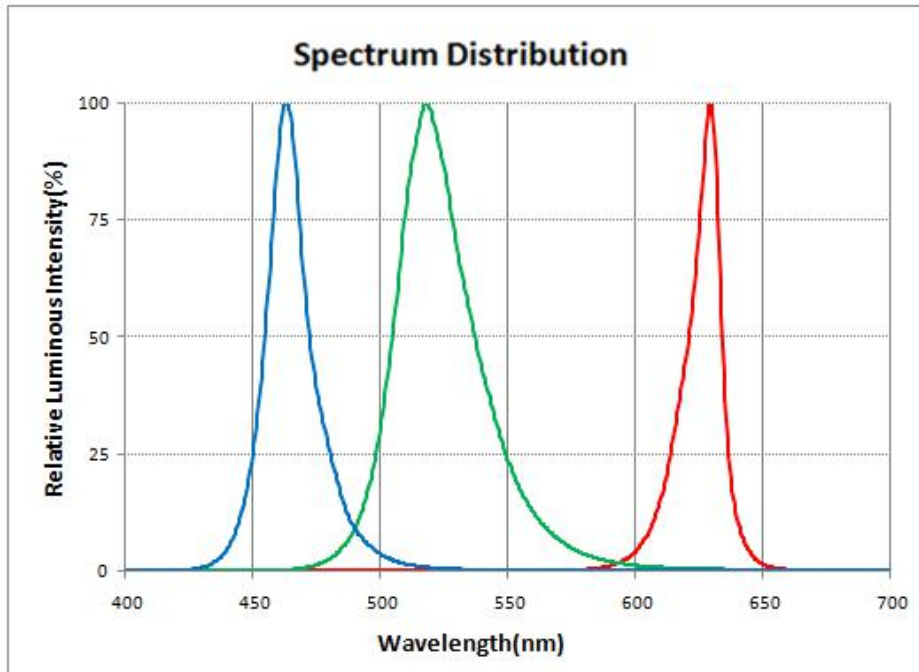
 @3mA/ $T_a=25^{\circ}C$, Tolerance:±1nm

Bin Range Of Luminous Voltage

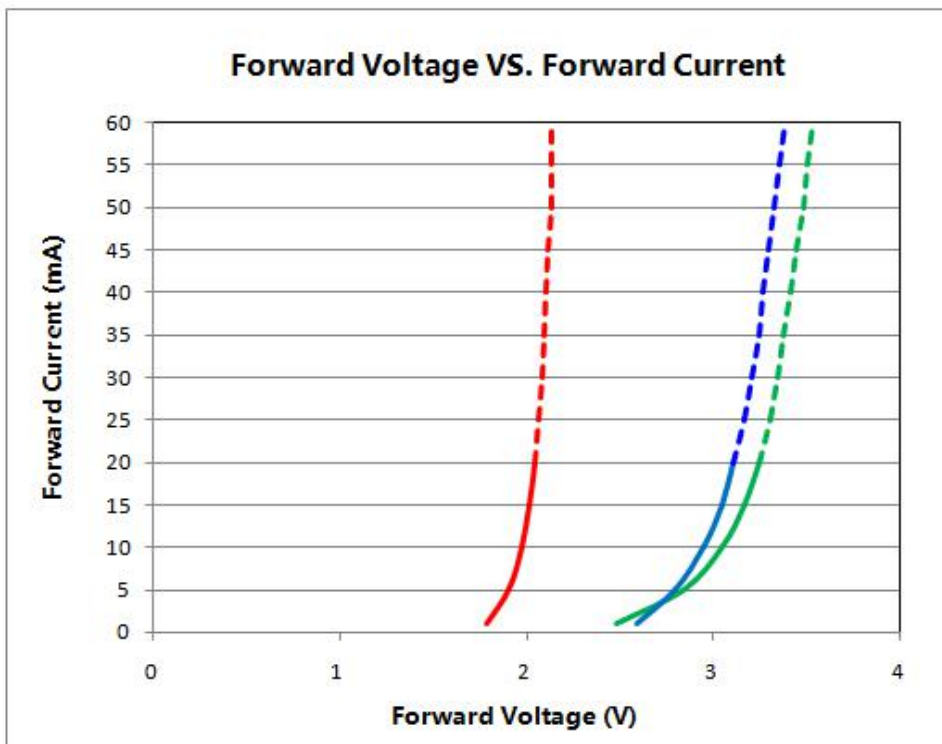
Bin	Min	Max	Unit	Condition
B0	2.5	3.5	V	$I_F=3mA$

 @3mA/ $T_a=25^{\circ}C$, Tolerance:±0.1V

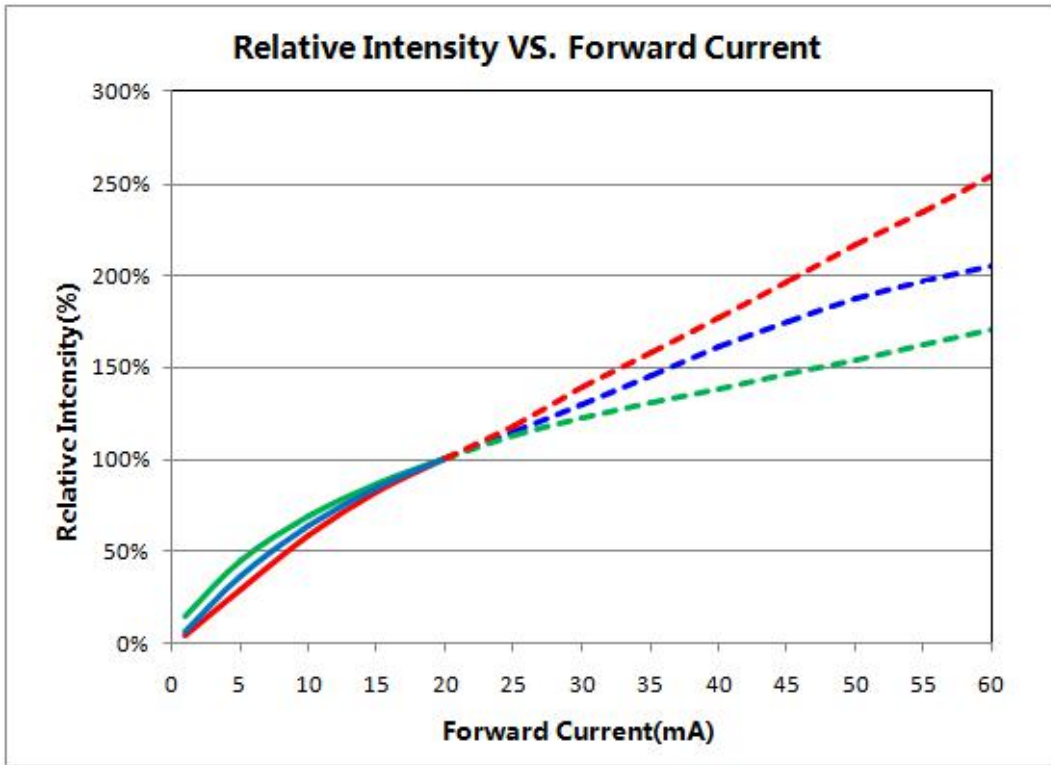
Electro-Optical Characteristics Curves
Spectrum Distribution



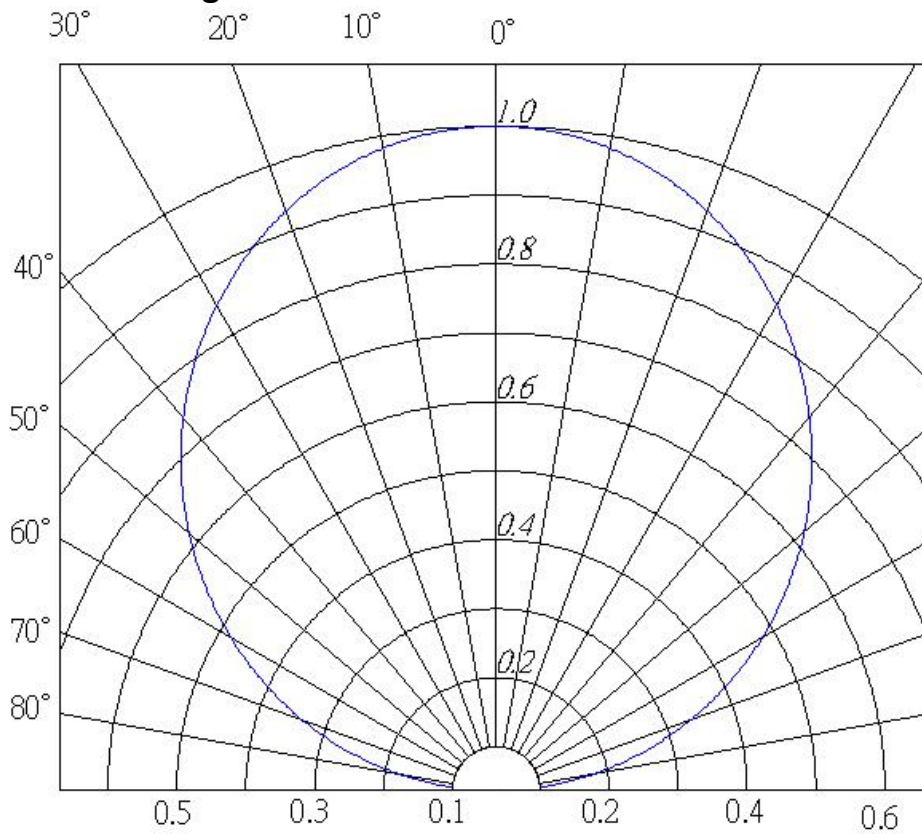
Forward Current vs. Forward Voltage



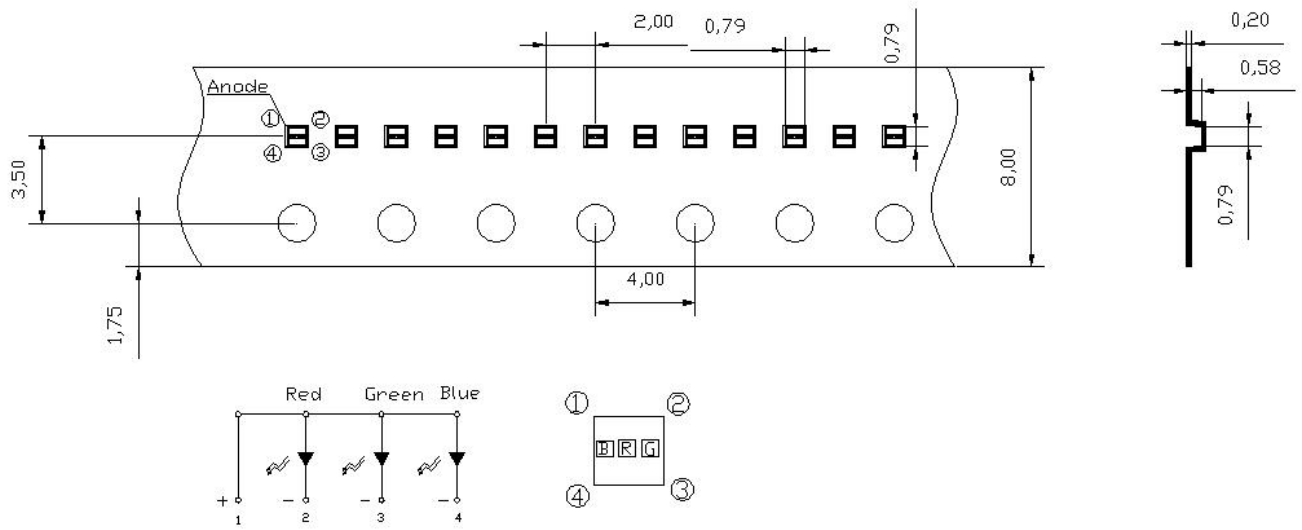
Relative Luminous Intensity vs. Forward Current



Radiation Diagram



Carrier Tape Dimensions: Loaded Quantity 20000pcs Per Reel

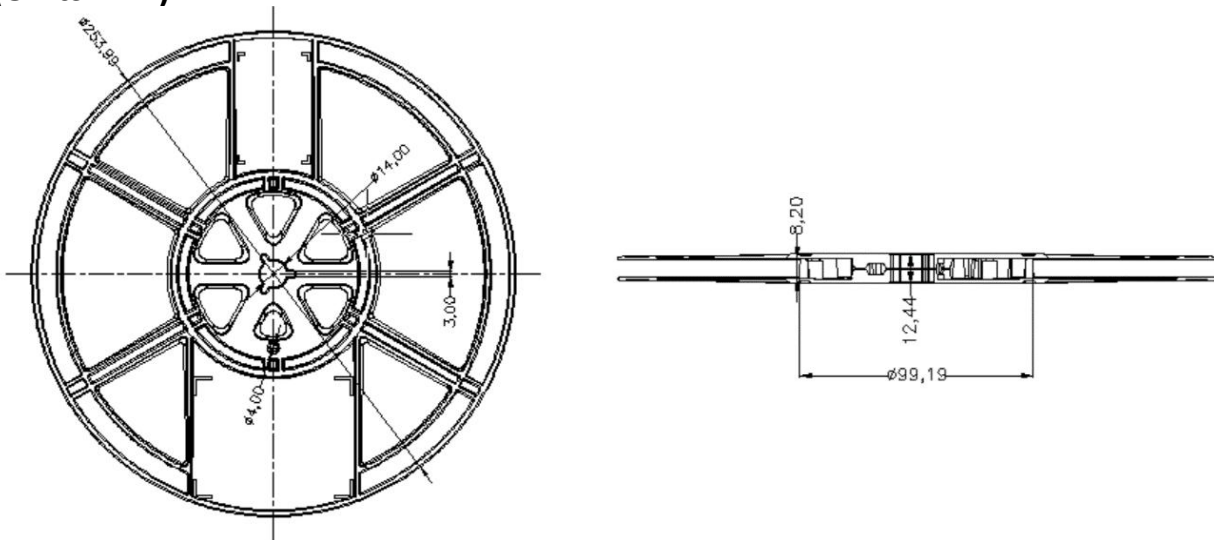


Note:

1. Dimensions are in millimeters.
2. Tolerances unless mentioned are $\pm 0.1\text{mm}$

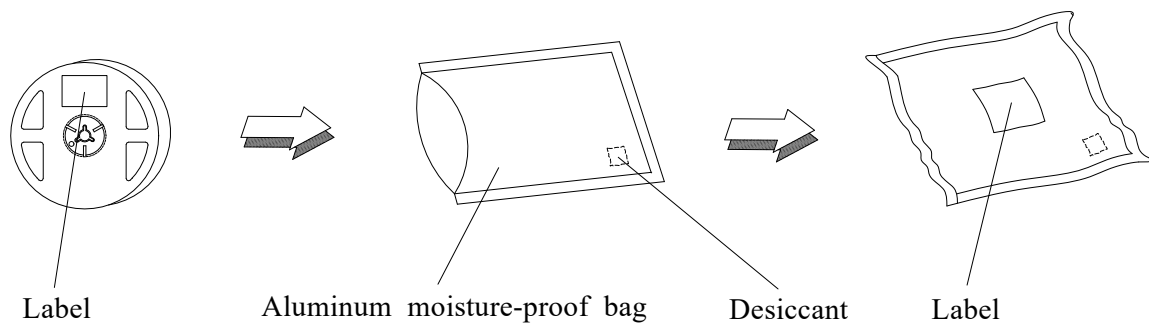
Reel Dimensions

(Units: mm)



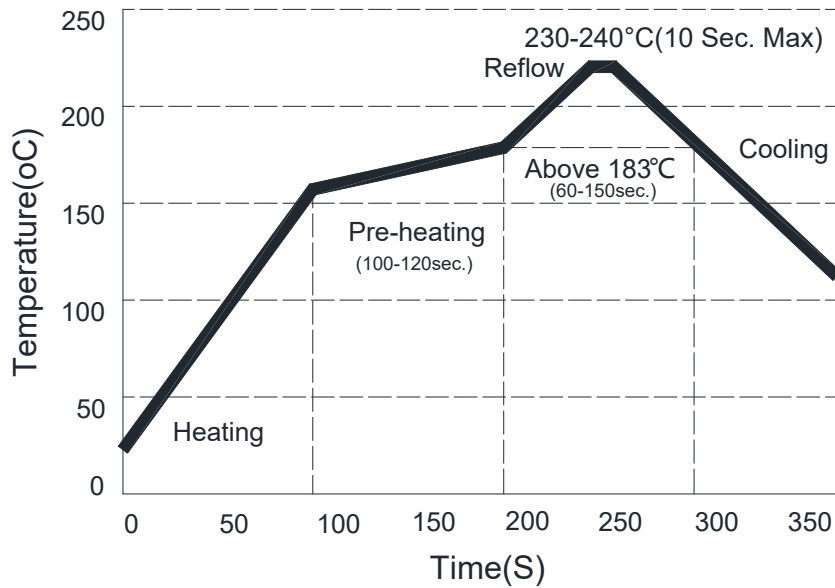
Note: The tolerances unless mentioned is $\pm 0.1\text{mm}$, Unit = mm

Moisture Resistant Packaging



Soldering Condition:

1. Pb-free solder temperature profile



2. Reflow soldering should not be done more than two times.
3. When soldering, do not put stress on the LEDs during heating.
4. After soldering, do not warp the circuit board, do not deal with the product before its temperature drop down room temperature.

Cleaning:

1. It is recommended to use clean cloth dipped in alcohol (anhydrous ethanol) for wiping , after soldering, and not excessive force, should be controlled at 50 degrees below.
2. Ultrasonic cleaning can be used, but the average power is not more than 300W.

Storage:

1. The product is packaged in anti-static aluminium foil bag with desiccant and humidity card.
2. Storage conditions: All products need to be stored at 10 DEG ~30 DEG, and humidity is less than 60% RH at 12 months. All products need to be baked before being used, and the condition of baking areas follows:

类别	烘烤温度	烘烤时间
≤2 个月(未受潮)	50±5	4H
2-6 个月(未受潮)	50±5	12H
超 6 个月(未受潮)	50±5	24H

3. After unpacking, please at 20 DEG ~30 DEG&30%~ 60% RH, and completed in the 10H patch, If it is not finished more than 10h, Please baked for 4 hours at 50°C ±5°C
4. Please baked for 4 hours at 60°C ±5°C If the humidity card fail or excess storage time

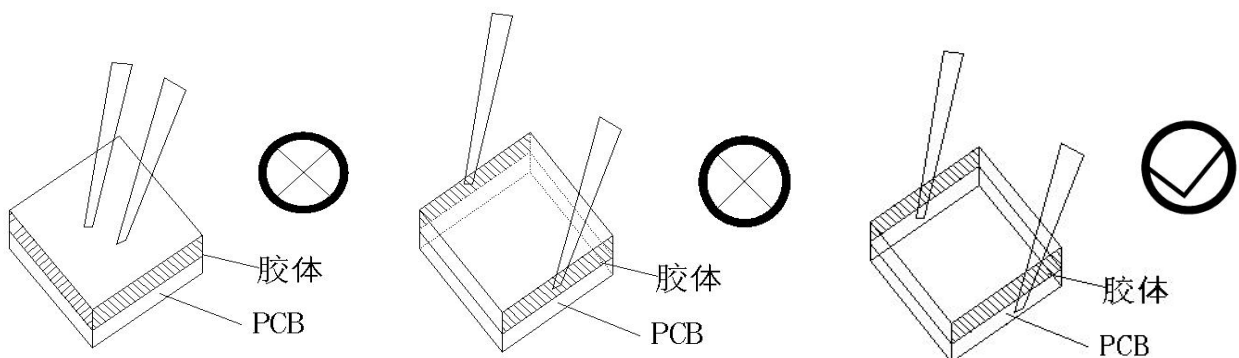
Circuit design

1. The LEDs should be operated with forward bias. The driving circuit must be designed so that the LEDs are not subjected to forward or reverse voltage while it is off. If reverse voltage is continuously applied to the LEDs, it may cause migration resulting in LED damage

2. The reverse voltage is recommended to be below 1.5v

Others:

1. Production environment: it is recommended to operate at 20 DEG ~30 DEG &30%~60%RH
2. The service temperature shall be controlled below 280 degrees, and the continuous heating time shall not exceed 30S.
3. When repairing, the sharp object should be directly punched into the colloid, and when picking the material, it is recommended to clamp both ends of the PCB.



Reliability Test

The particles meet the following reliability test

NO	Item	Condition	Reference standard	Quantity	Determine	
1	LED	Reflow	(260°C±5°C) 3次	22	死灯/衰减	
2		TS	100°C storage 5min; shift: 10s; -40°C storage 5min, 300 回合	JESD22-A113F	22	是否死灯 衰减
3		TC	100°C storage 15min; shift: 5min; -40°C storage 15min	JESD22-A104C	22	是否死灯 衰减
4		HT (静)	Temp.: 100°C, 168H/500H/1000H	JEITA ED-4701 200 201	22	1.Iv 衰减 Avg≤30% 单个≤50%; 2.Wd±2nm 3.VF 初始值±10%; 4.IR≤10uA.
5		LT (静)	Temp.: -40°C, 168H/500H/1000H	JEITA ED-4701 200 202	22	
6		HTHH (静)	Temp.: 85°C; Humidity 85%RH, 168H/500H/1000H	JEITA ED-4701 100 103	22	
7		Life	Temp.: 25°C, 168H/500H/1000H (1.常规电流, 2.超正常电流 15%)	Internal standard	22	
8		HT	Temp.: 70°C, 168H/500H/1000H IF: R@5mA/G@5mA/B@5mA	Internal standard	22	
9		HTHH	Temp.: 85°C; Humidity 85%RH, 168H/500H/1000H IF: R@5mA/G@5mA/B@5mA	Internal standard	50	