Spec. No.	PS-SC-UPCYG54XX-YSX
Rev.	T01

Product Specification

Model No：CSSC-UPCYG54XX-YSX

Descriptions:		
■ Product Type	:	Chip LED
■ Package Size	:	1.6x 0.8x 0.95 mm
■ Emitting Color	:	Yellow-Green

■ CUSTOMER APPROVED SIGNATURES	APPROVED BY	CHECKED BY	PREPARED BY
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■ Features

1. 0603 package
2. Top view LED
3. Compatible with infrared and vapor phase reflow solder process
4. Wide viewing angle 35°
5. Pb-free
6. RoHS compliant

■ Device Selection Guide

Part No.	Chip Material	Color	
		Emitted	Resin
CSSC-UPCYG54XX-YSX	AlGaInp	Yellow-Green	Water clear

■ Applications

1. General lighting
2. Decorative and Entertainment Lighting
3. Indicators
4. Automotive Telecommunication
5. Switch lights

■ Absolute Maximum Ratings–

(Ta=25℃)

Parameter	Symbol	Value	Unit
Forward current	I_F	25	mA
Pulse Forward Current *1	I_{FP}	60	mA
Reverse voltage[*2]	V_R	5	V
Power Dissipation	**PD**	55	mW
Operating temperature range	T_{op}	-40~ +85	℃
Storage temperature range	T_{stg}	-40 ~ +85	℃
Soldering Temperature	T_{sld}	Reflow Soldering: 260° C	for 10sec.
		Hand Soldering:350 ° C	for 3sec.

Note:

The products are sensitive to staitic electricity and must be carefully taken when handing products

■ Electrical / Optical Characteristics –

(Ta=25℃)

Parameter	Symbol	Value			Unit	Test Condition
		Min	Typ	Max		
Forward Voltage	Vf	1.8	–	2.2	V	I_F=20mA
Luminous Intensity	Iv	70	–	250	mcd	
Dominant Wavelength	λ d	566	–	572	nm	
Viewing Angle	2θ1/2	–	35	–	Deg	
Reverse Current	Ir	–	–	10	μA	V_R=5V
ESD Sensitivity	HBM	–	–	1500	V	MIL-STD-833G

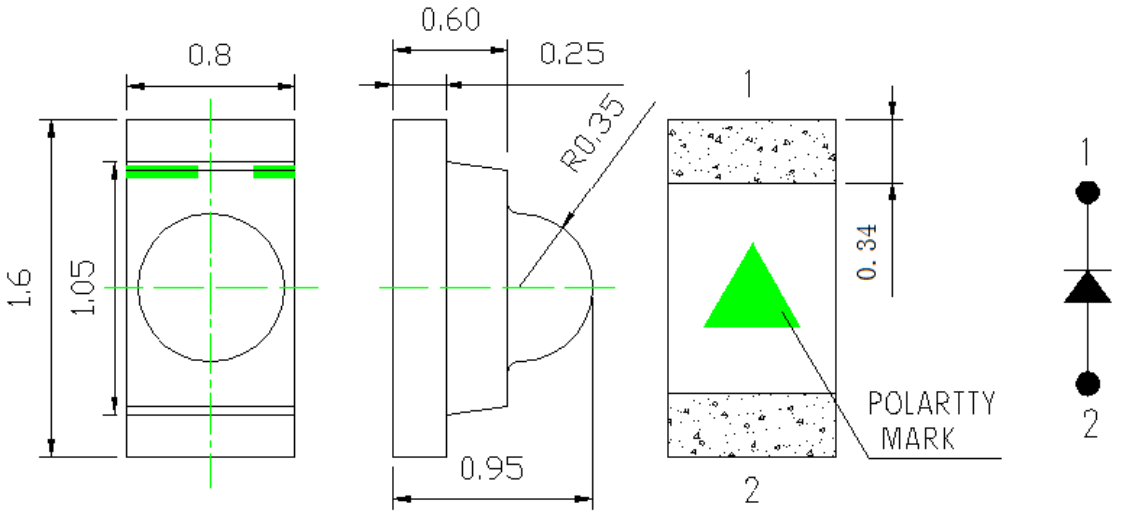
Notes:

1:Tolerance of luminous Intensity ±10%

2: Tolerance of Dominant Wavelength: ±1nm.

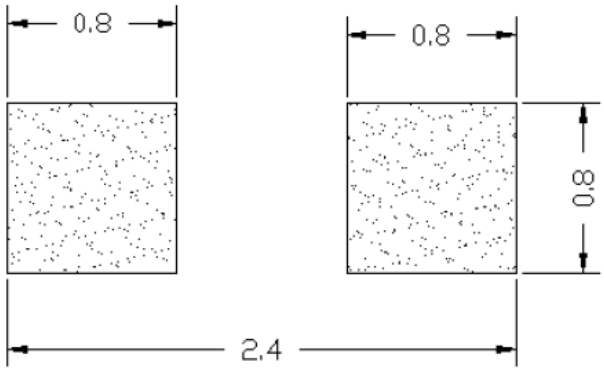
3: Tolerance of Forward Voltage: ±0.05V.

- **Product size (Unit: mm) –**



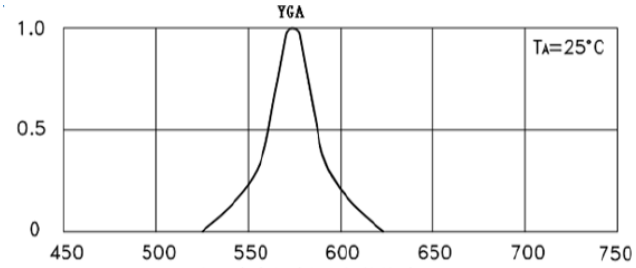
Note: Tolerance unless mentioned is ±0.1mm,Unit = mm.

- **Recommended Soldering Pad Pattern**

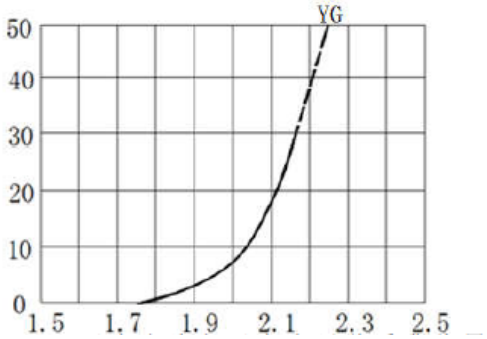


■ Electrical / Optical Characteristics Curves (Ta = 25℃ Unless Otherwise Noted)

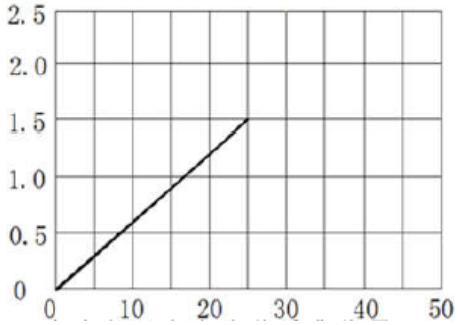
Relative Intensity vs.Wavelength



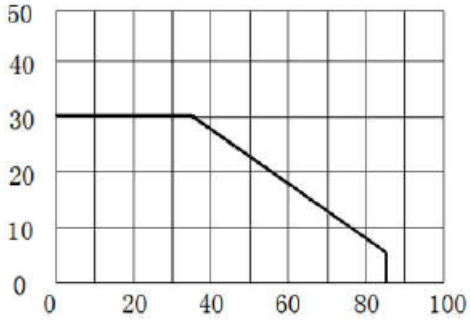
Forward Current vs.Forward Voltage



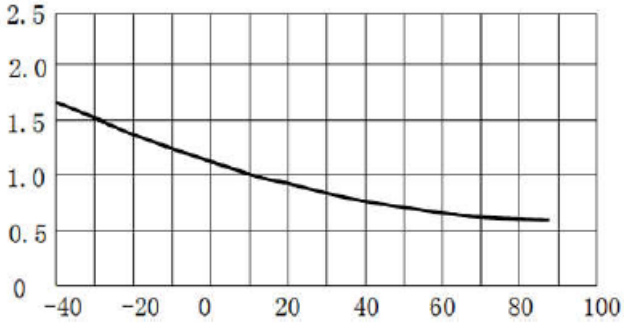
Relative Intensity vs.Forward Currenr



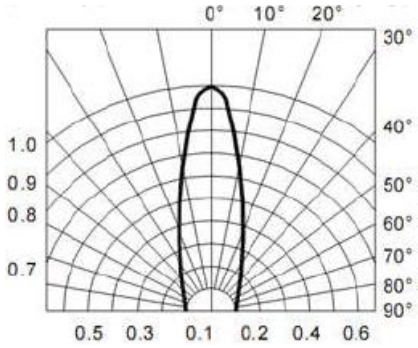
Forward Current vs.Ambient Temperature



Relative Intensity vs.Ambient Temperature

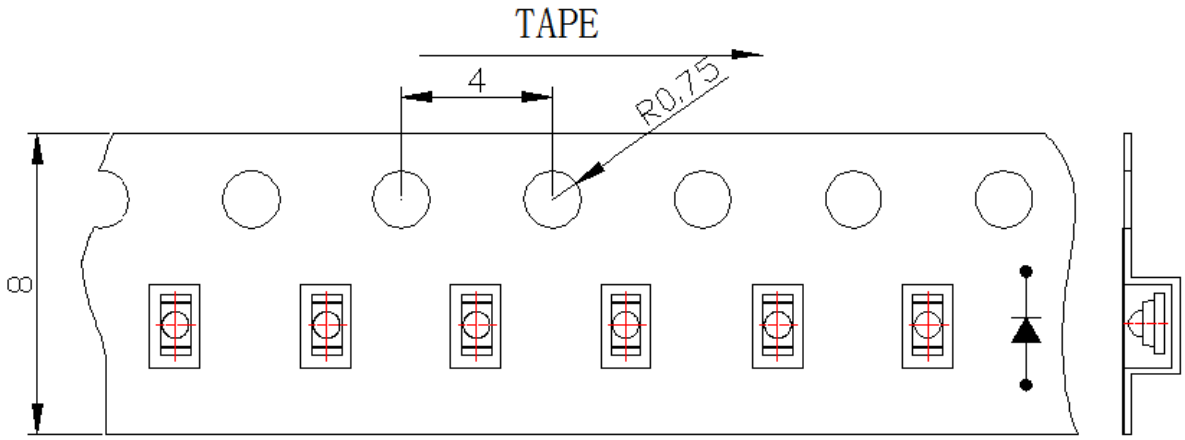


Relative Luminosity VS. Radiation Angle



■ **Packing & Label Specifications**

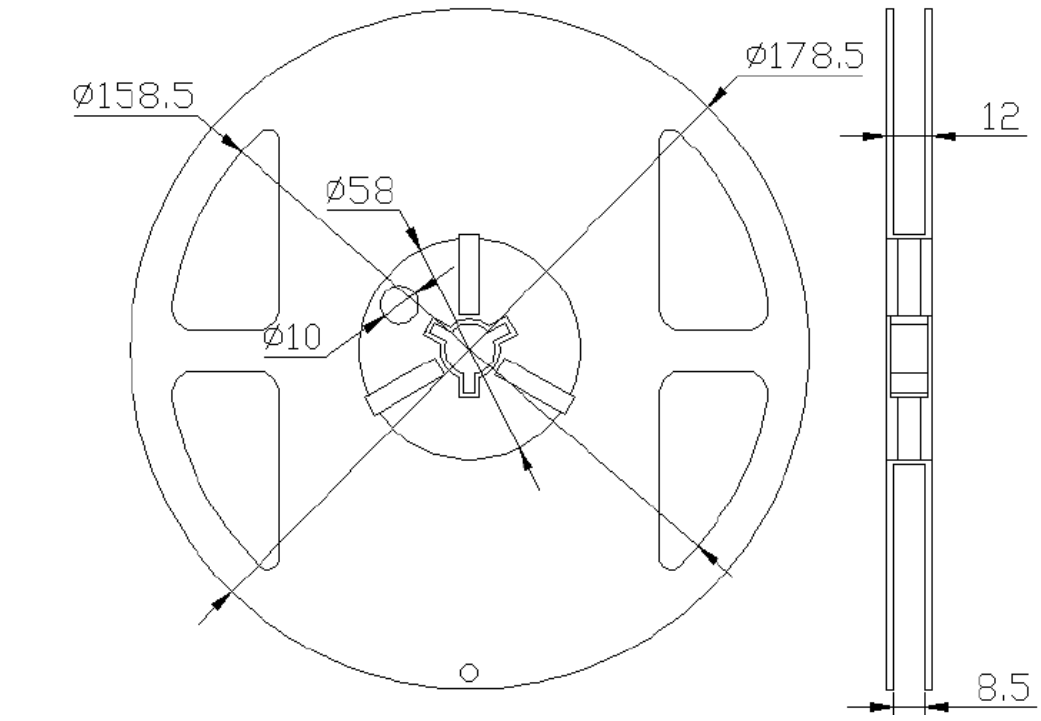
Tape Dimension



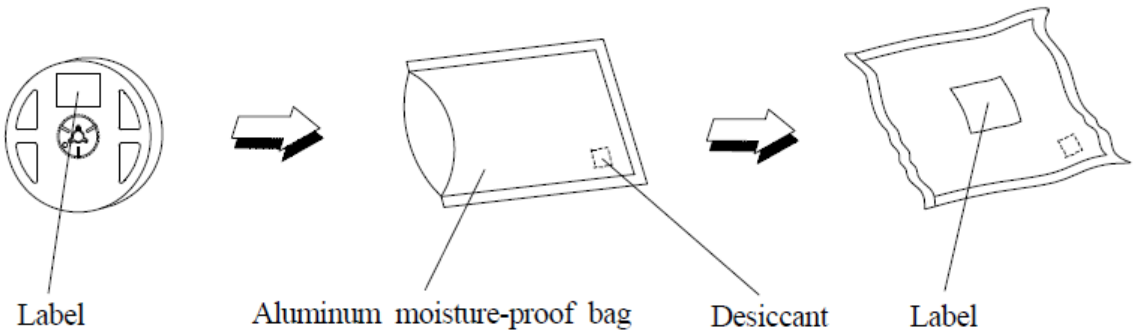
Note:

1.Tolerance unless mentioned is ±0.1mm; Unit = mm.

■ **Reel Dimension**



Note: Tolerances unless mentioned ±0.1mm, Unit = mm.



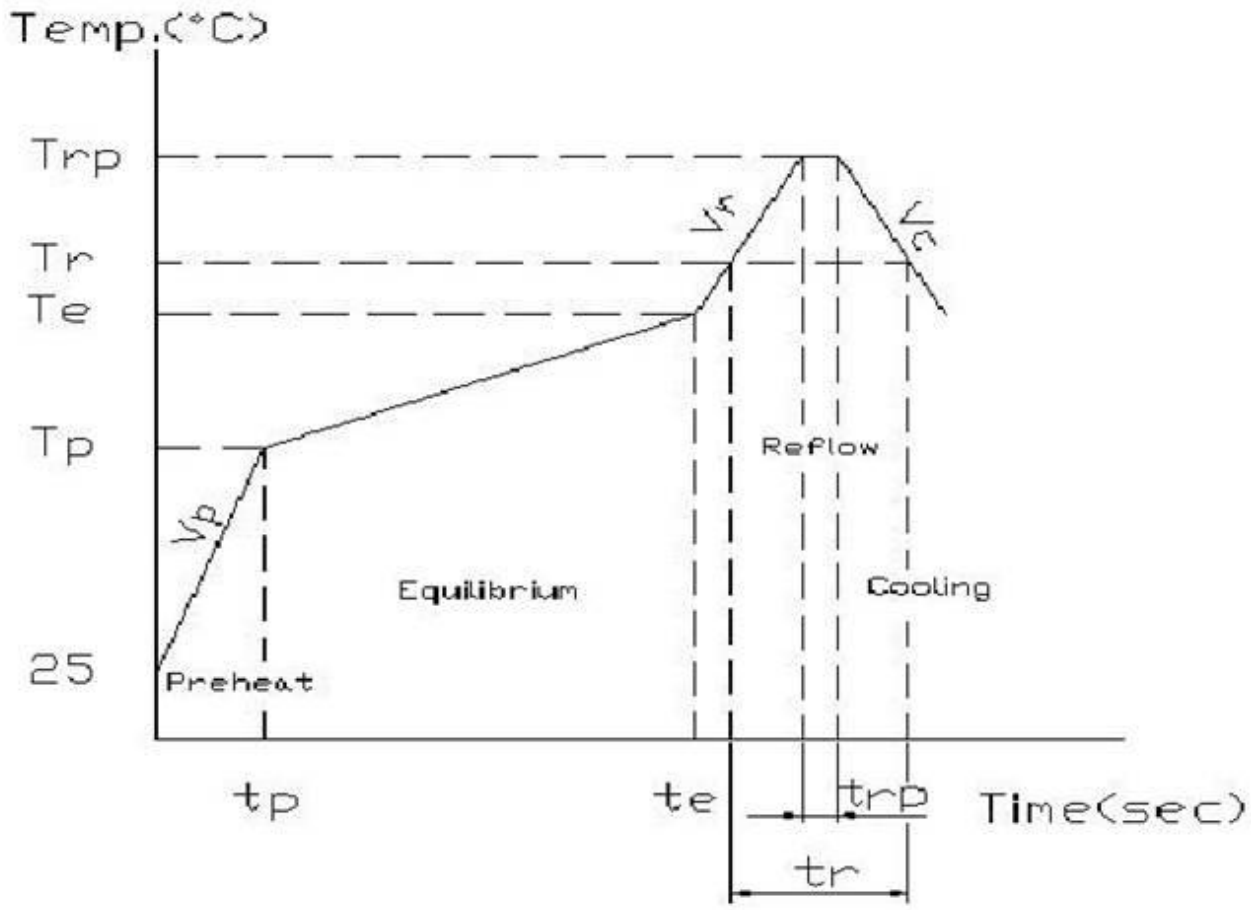
■ Packing Amount

Package Name	Distribution of the layer or box		Total Mount		Note
	Amount	Unit	Amount	Unit	
Reel	1	Reel	3000	Pcs	
Inner Box	5	Reel	15000	Pcs	
Outer Box	6	Inner Box	90000	Pcs	

■ Soldering Characteristics

IR-reflow Condition (Pb free)

Area	Title	Symbol	Min	Max	Unit
(1)Preheat	Ramp-up rate	Vp	1	5	℃/sec
	temperature	Tp	150	–	℃
	time	tp	–	–	sec
(2)Equilibrium	Ramp-up rate	Ve	–	–	℃/sec
	temperature	Te	150	200	℃
	Time	te	60	120	sec
(3)Reflow	Ramp-up rate	Vr	1	5	℃/sec
	temperature	Tr	220	–	℃
	Time	tr	–	60	sec
	Peak temperature	Trp	–	260	℃
	Peak time	trp	–	10	sec
(4)Cooling	Ramp-down rate	Vc	3	6	℃/sec



Hand Soldering (Iron Condition)

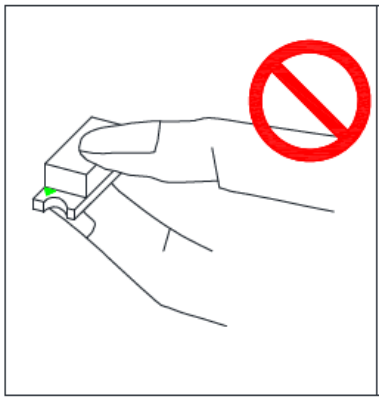
Soldering Iron:30W Max

Temperature 350°C Max（iron tip 260°C Max）

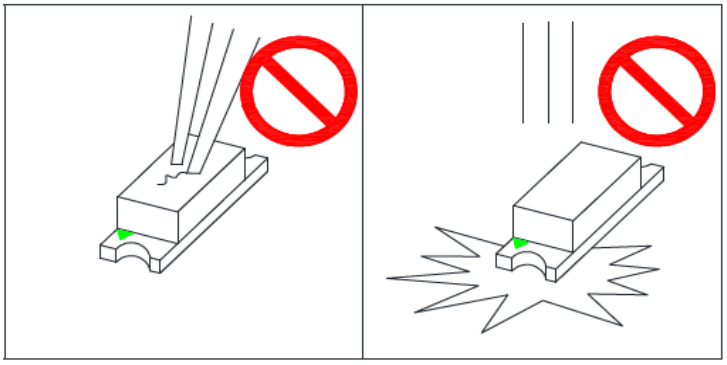
Soldering Time:3 Seconds Max(Once)

- **Handling of Chip LEDs-**
  - **Handling Indications**

i. 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.



ii. 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.



- **Storage –**
  - Storage Conditions

    A. Before opening the package:

    The LEDs should be kept at ≦40°C and ≦90%RH. The LEDs should be used within a year. When storing the LEDs, moisture proof packaging with absorbent material (silica gel) is recommended.

    B. After opening the package:

    The LEDs should be kept at ≦30°C and ≦60%RH. The LEDs should be soldered within 168 hours after opening the package. If unused LEDs remain, they should be stored in moisture proof packages, such as sealed containers with packages of moisture absorbent material (silica gel). It is also recommended to return the LEDs to the original moisture proof bag and to reseal the moisture proof bag again.
  - If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.

    Baking treatment: more than 24 hours at 60 ± 5°C
  - This product has silver plated metal parts that are inside and/or outside the package body. The silver plating becomes tarnished when being exposed to an environment which contains corrosive gases. Any LED with tarnished leads may lead to poor solderability and deterioration of optical characteristics. Please do not expose the LEDs to corrosive atmosphere during storage.
  - After assembly and during use, silver plating can be affected by the corrosive gases emitted by components and materials in close proximity of the LEDs within an end product, and the gases entering into the product from the external atmosphere. The above should be taken into consideration when designing.
- **Moisture Proof Package –**
  - When moisture is absorbed into the SMT package it may vaporize and expand during soldering. There is a possibility that this can cause exfoliation of the contacts and damage to the optical characteristics of the LEDs. For this reason, the moisture proof package is used to keep moisture to a minimum in the package.
  - The moisture proof package is made of an aluminum moisture proof bag. A package of a moisture absorbent material (silica gel) is inserted into the aluminum moisture proof bag. The silica gel changes its color from blue to red as it absorbs moisture.
  - Please avoid rapid transitions in ambient temperature, especially in high humidity

environments where condensation can occur.

- Heat Generation –
  - Thermal design of the end product is of paramount importance. Please consider the heat generation of the LED when making the system design. The coefficient of temperature increase per input electric power is affected by the thermal resistance of the circuit board and density of LED placement on the board, as well as other components. It is necessary to avoid intense heat generation and operate within the maximum ratings given in this specification.
  - The operating current should be decided after considering the ambient maximum temperature of LEDs.

- **Static Electricity –**
  - Static electricity or surge voltage damages the LEDs. It is recommended that a wrist band or an anti-electrostatic glove be used when handling the LEDs.
  - All devices, equipment and machinery must be properly grounded. It is recommended that precautions be taken against surge voltage to the equipment that mounts the LEDs.
  - When inspecting the final products in which LEDs were assembled, it is recommended to check whether the assembled LEDs are damaged by static electricity or not.
  - Damaged LEDs will show some unusual characteristics such as the leak current remarkably increases, the forward voltage becomes lower, or the LEDs do not light at the low current.

- **Cleaning –**
  - It is recommended that isopropyl alcohol be used as a solvent for cleaning the LEDs. When using other solvents, it should be confirmed beforehand whether the solvents will dissolve the package and the resin or not. Freon solvents should not be used to clean the LEDs because of worldwide regulations.
  - Do not clean the LEDs by the ultrasonic. When it is absolutely necessary, the influence of ultrasonic cleaning on the LEDs depends on factors such as ultrasonic power and the assembled condition. Before cleaning, a pre-test should be done to confirm whether any damage to the LEDs will occur.

Notice: The specifications are subject to change without notice. Please contact us for updated information