

SPECIFICATION FOR APPROVAL

Customer Name :

Customer Item :

Part No. : PU-S335SCL-P05P20

Product Description :

Draw Date :

1.Accessory: **Samples** **Samples Data**

2.Customer's Proposal : **Agree** **Disagree**

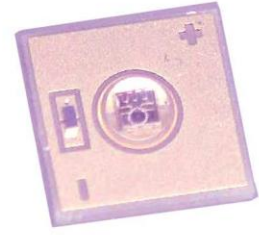
Reason :



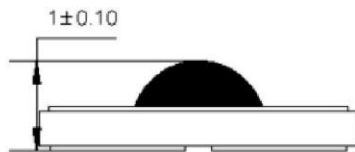
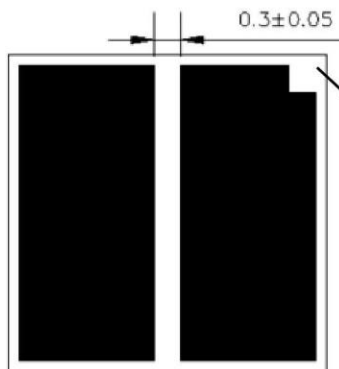
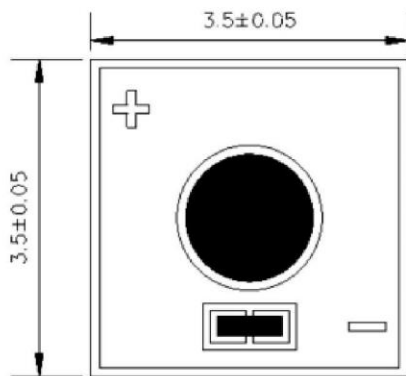
Rev.	Draw by :	Checked by :	Approved by :
1.2.1	Steven Chen	Gray Huang	Caren
Customer Approve			

1. Features & Applications

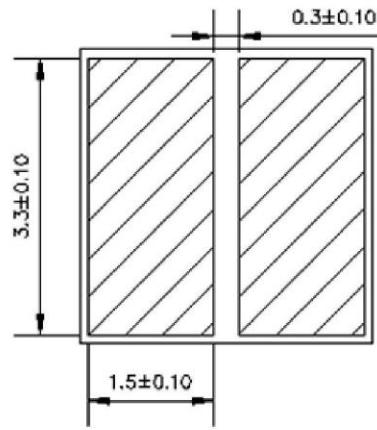
- Lighting Color(Peak Wavelength): 260~280nm
- Surface Mount Type LED Package: 3.5 × 3.5 × 1.0 (L × D × H) [Unit: mm]
- View angle (2θ1/2=160deg)
- Disinfection, Fluorescent Spectroscopy, Sensor Light, etc.



2. Outline Dimensions

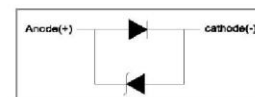


Recommend Solder Pattern



* Note

1. Units : mm
2. STD Tolerance : ± 0.1 Max
3. Pin array



4. ESD protection

3. Absolute Maximum Rating

[Ta = 25°C]

Parameter	Symbol	value			Unit
		min	type	max	
Forward Current	I _F	-	-	150	mA
Power Dissipation	P _D	-	-	1.2	W
Operating Temperature	T _{OPR}	-30	-	+60	°C
Storage Temperature	T _{STG}	-40	-	+100	°C
Surface Temperature	T _S	-	-	50	°C

Note

1. The surface temperature value is measured with MCPCB.

4. Electro Optical Characteristics

[Ta = 25°C, 100mA]

Parameter	Symbol	Min.	Typ.	Max	Unit
Peak Wavelength	λ _p	260	-	280	nm
Radiant Flux	φ _e	20	-	30	mW
Forward Voltage	V _F	5.5	-	7.5	V
Spectrum Half Width	Δλ	-	10	-	nm
View Angle	2θ _{1/2}	-	160	-	°

Note

1. Peak Wavelength Tolerance ± 3.5nm
2. Radiant Flux Measurement tolerance ±10%
3. Forward Voltage Tolerance ± 10%

5. Bin Structure

[Ta = 25 °C, 100mA]

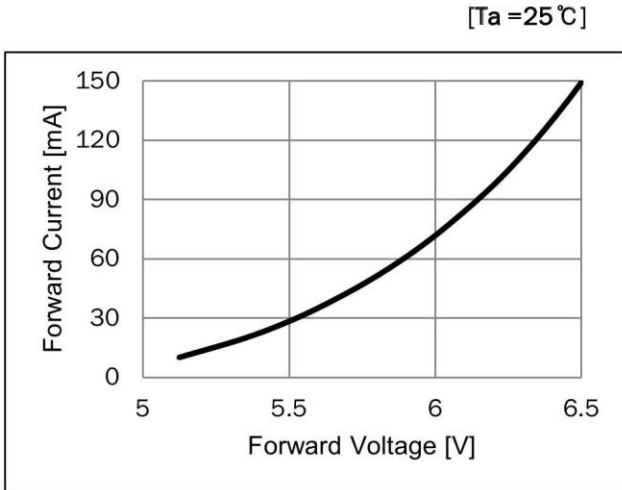
Designate	Information	Code	Min	Typ.	Max.
W	Peak Wavelength	260	260	-	270
		270	270	-	280
P	Radiant Flux (Φ_e)	20.0	20.0	-	25.0
		25.0	25.0	-	30.0
V	Forward Voltage (V)	5.5	5.5	-	6.0
		6.0	6.0	-	6.5
		6.5	6.5	-	7.0
		7.0	7.0	-	7.5

Note : Bin code (W270-P25.0-V6.0)

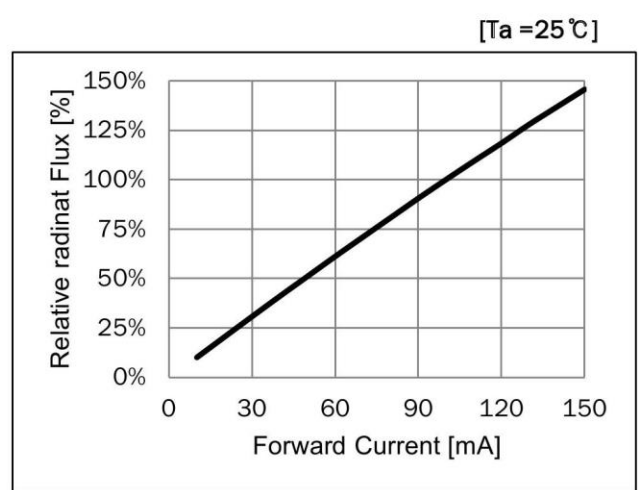
1. Peak Wavelength = W270
2. Radiant Flux = P10.0
3. Forward Voltage = V6.0

6. Characteristics Diagrams

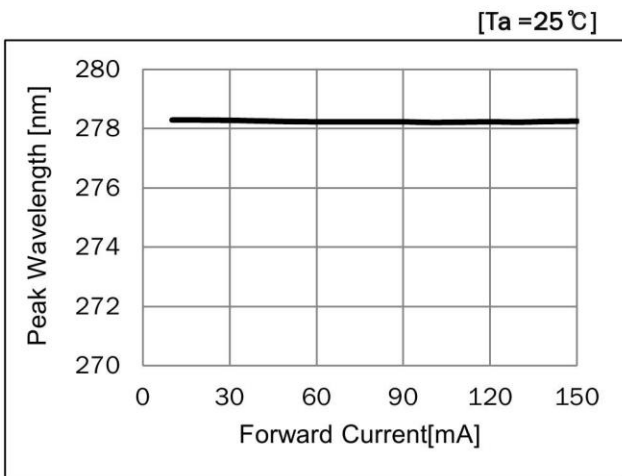
1) Forward Current vs Forward Voltage



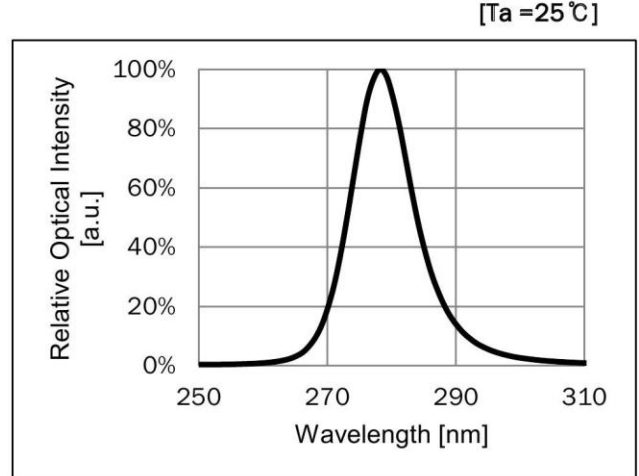
2) Relative Radiant Flux vs Forward Current



3) Peak Wavelength vs Forward Current

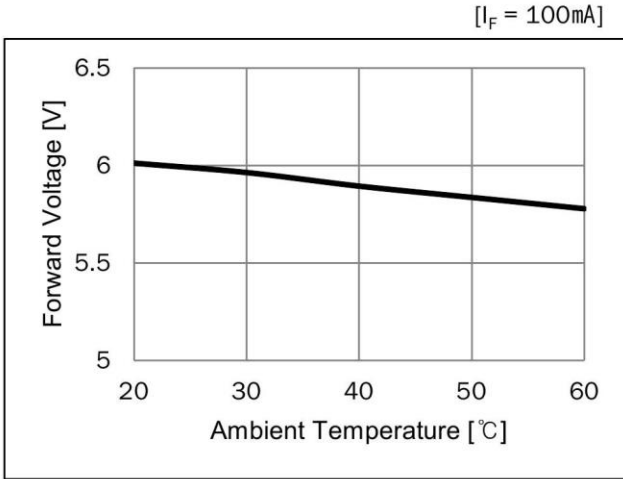


4) Spectrum

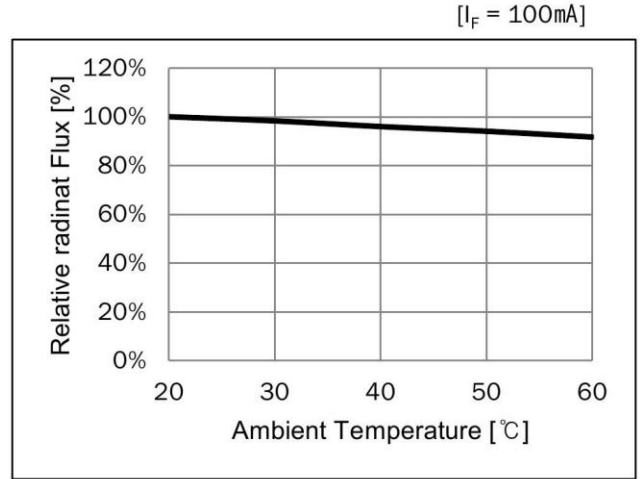


6. Characteristics Diagrams

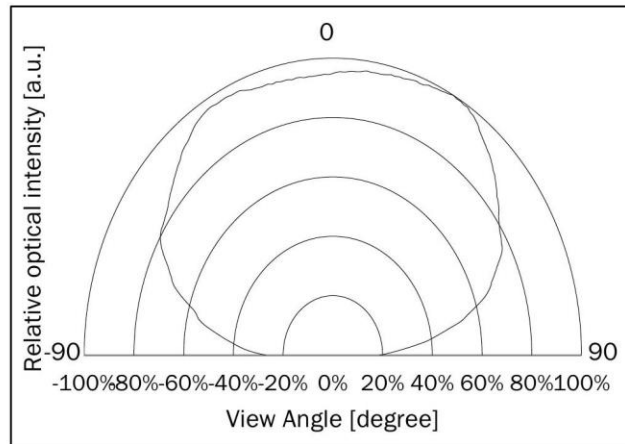
5) Forward Voltage vs Ambient Temperature



6) Relative Radiant Flux vs Ambient Temperature



7) Far-field Emission Pattern



7. Reliability Test Items and Conditions [T.B.D]

1) Criteria for Judging the Damage

Parameter	Symbol	Condition	Criteria for Judgement	
			Min.	Max.
Forward Voltage	VF	IF=100mA	-	U.S.L.(1) *1.1
Radiometric Power	IV	IF=100mA	L.S.L.(1) *0.5	-

Note

(1) U.S.L : Upper Specification Level

(2) L.S.L : Lower Specification Level

2) Reliability Tests

Test Item	Test Conditions	Test Time	Sample Q'ty
Room Temperature Operating Life [RTOL]	Ta=25 °C, If=100mA	1000hrs	10 pcs
High Temperature Operating Life [HTOL]	Ta=60 °C, If=100mA	1000hrs	10 pcs
High Temperature Storage Life [HTSL]	Ta=100 °C	1000hrs	10 pcs
LOW Temperature Storage Life [HTSL]	Ta=-40 °C	1000hrs	10 pcs
Thermal Shock	Ta max=120 °C, Ta min=-40 °C 30min dwell/transfer time: 10sec. 1 cycle = 1 hour	100 cycle	10pcs

8. Soldering Conditions

1) Recommended Soldering

- Use SnBiCuCo (Tin/bismuth/Copper/Cobalt) of solder paste composition.
- The recommended stencil thickness is 60~80 μ m.
- The recommended stencil solder paste area is 60~80%.
- When soldering, do not use a hot plate,
recommended to use a convection type reflow machine. (see figure 1.)

Reflow Soldering	
	Low Temperature Lead-Free Solder
Pre-Heating	100 ~ 130 $^{\circ}$ C
Pre-Heat Time	120sec. Max.
Peak Temperature	175 $^{\circ}$ C Max.
Soldering Time	10sec. Max.

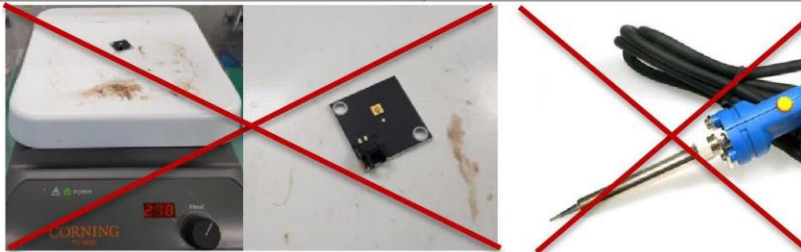
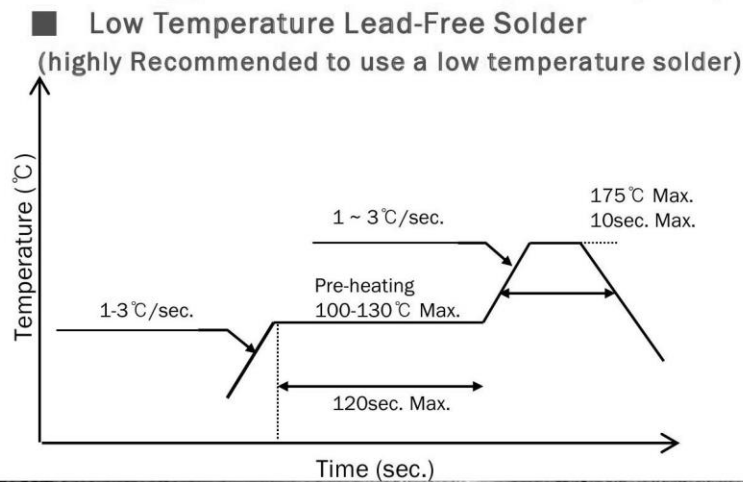


Figure1. Do not use a hot plate or Soldering Iron to mount led-package onto PCB, recommended to use a reflow machine.

2) Recommended Reflow Soldering profile

- Available Max temperature : 175 $^{\circ}$ C – 10 sec. (AuSn Solder Not Applicable)
- After Reflow Soldering, Rapid cooling should be avoid.
- Strongly prohibition of rapid increasing temperature.
- Do not repeat Reflow soldering (UVC PKG must be a reflow process only once)



Precaution

1. Cleaning.

- This Device is not allowed to be used in any type of fluid such as water, oil, organic Solvent, etc.
- If cleaning is required, IPA is recommended as cleaning solution.
- Pretests should be conducted with the actual cleaning process to validate that the process will not damage the UV LEDs

2. Mounting Precautions

- The time taken for a device to return to the room temperature after reflow soldering depends on the mounting board and environmental conditions.
- Pressure on the UV LEDs will influence to the reliability and easily scratched. Avoid friction against hard materials and strong pressure.
- It is recommend, do not put stress on the UV LEDs during heating .
- When installing an assembled board into equipment, ensure that the devices on the board do not contact with other components.
- Recommend once soldering. If re-soldering can not avoid, The UV LEDs characteristics should be carefully checked before and after such repair.

3. Packing

- Moisture-Proof Packaging
- These UV LED devices are packed in an aluminum envelope with a silica gel and a moisture indicator to avoid moisture absorption. The optical characteristics of the device may be affected by exposure to moisture in the air before soldering and the device should therefore be stored under the following conditions:
- This moisture proof bag may be stored unopened within 12 months at the following conditions.
- Temperature: 5 °C to 30 °C Humidity: 50 % (MAX)
- After opening the moisture proof bag, the device should be assembled within 4 weeks in an environment of 5 °C to 30 °C/60 % RH or below.

Precaution

4. Handling Precautions

- The tape is antistatic-coated. However, if the tape is charged with excess static electricity, devices might cling to the tape or waggle in the tape when the cover tape peeled off. Be aware of the following to avoid this:
- Use an ionizer to neutralize the ions when utilizing an automatic mount Device..
- For transport and temporary storage of devices, use containers (boxes, jigs, bags) that are made with antistatic materials or materials that dissipate static electricity.
- Use preventive (ESD, EOS) measure; conductive floor mats, ground connection, wear conductive shoes, and wear a wrist strap
- Take suitable preventive measure s according to your working environment
- Note that the above measures are only examples
- When the device is in operation, the forward current should be carefully determined considering the maximum ambient temperature and corresponding junction temperature.

5. Manual Handling Precaution

- Do not pick up UV LEDs with fingers.
 - The emitting surface will get contaminated, affecting the optical characteristics.
- Use tweezers to pick up UV LEDs.
 - Teflon coated tweezers would be recommended that the UV LED is not to scratch
- During assembly processing, a mechanical stress on the surface should be minimized
- Recommend holding the sidewalls of UV LEDs (See figure 2.)
- Recommend using ESD protected or vacuum tweezers.

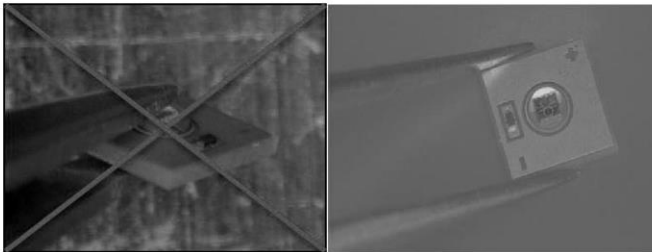


Figure 2. incorrect handling (left) and correct handling(right) of UV Package



Precaution

6. Assembly precautions

- UVC PKG consist of Lens and Zener (or Chip), which is placed outside of Lens. When using collet in the “Pick & Place process” as shown in fig.3(left), Chip or Zener can be damaged by Collet. (for example : LENS could be pressed, Chip could be broken or fell out) .
- It is recommended to use collet as shown in Fig.3(right). The Collet can carry out “Pick and Place Process” properly by avoiding damages of chips or Lens.
- Please verify the Collet before use.

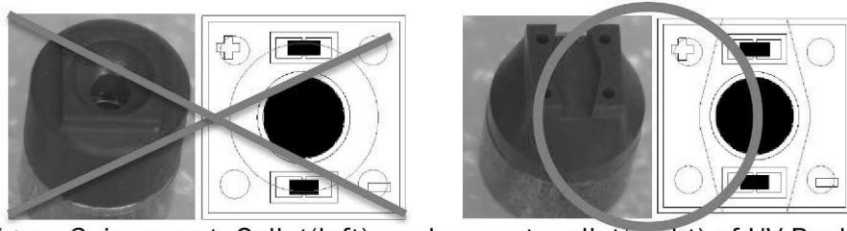


Figure 3. incorrect Collet(left) and correct collet(right) of UV Package

- Detailed information can be found in the “UVC technical Reports”

7. Safety for eyes and skin

- The Products emit high intensity ultraviolet light which can make your eyes and skin harmful, so do not look directly into the UV light and wear protective

8. Others

- If the forward or reverse voltage which exceeds the absolute maximum rating is applied to the UV LEDs, that will cause the damage to the UV LEDs. It is possible that the damaged UV LEDs .Be careful not to look the UV LEDs that the output power is strongly increased in the face. It is possible that eyesight has been getting weaker.

This specifications of the product may be revised without notice.

