SEOUL OPTODEVICE

RoHS

Technical Data Sheet

Specification

CUN*6A1A

SOC		Customer
Drawn	Approval	Approval

Technical Data Sheet

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CUN*6A1A

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Description

High power UV LED series are designed for high current operation and high power output applications.
It incorporates state of the art SMD design and low thermal resistant material.
Z5 NUV LED is ideal UV light source for curing, printing, and detecting applications.

Features

- Super high power output
- Designed for high current operation
- Low thermal resistance
- SMT solderable
- Lead Free product
- RoHS compliant

Applications

- UV Curing
- Printing
- Coating
- Adhesive
- Counterfeit Detection/ Security
- UV Torch
- Fluorescence Photography
- Dental Curing
- Crime Inspection
- Oil leak Detection

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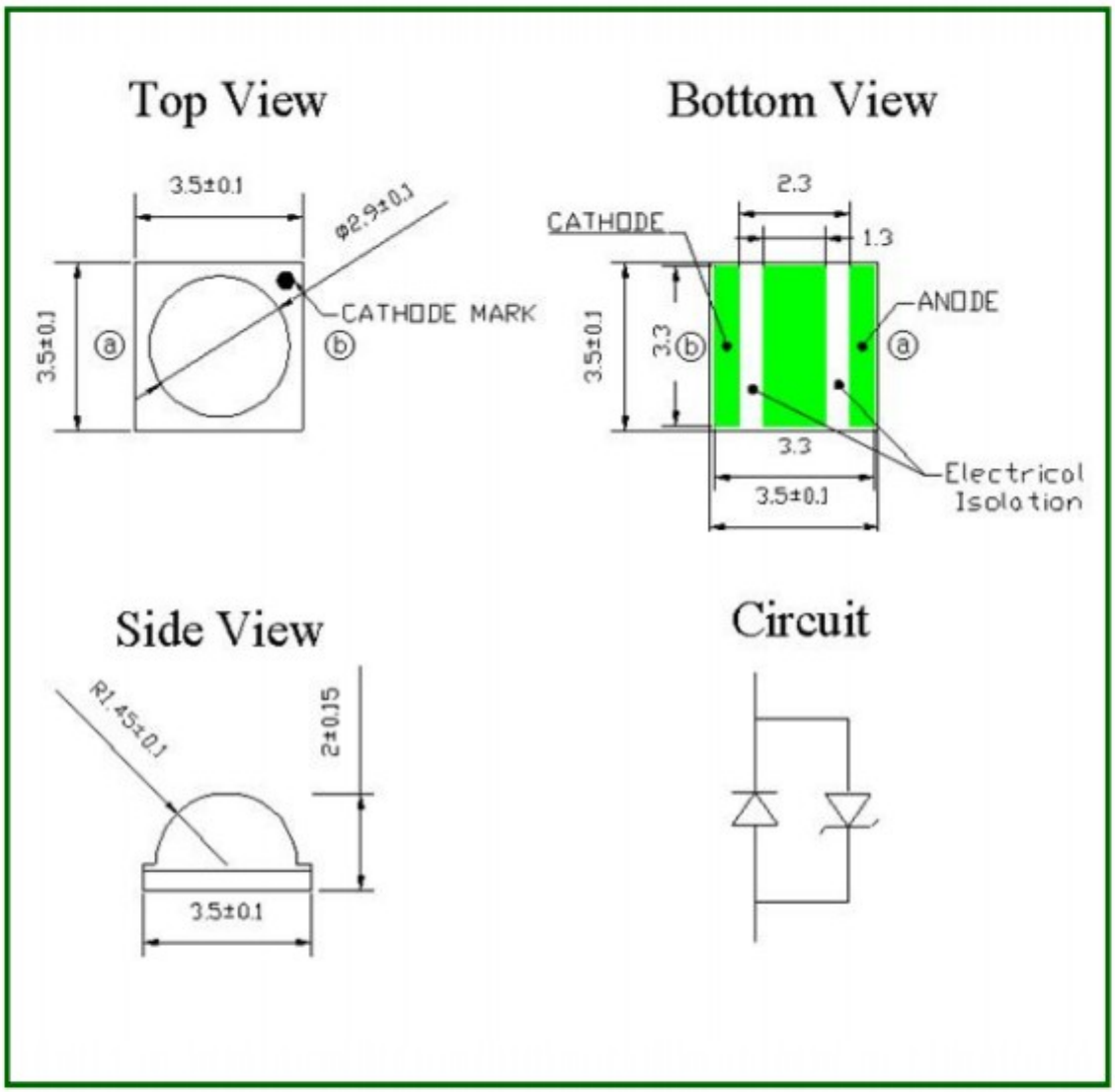
Outline dimensions



Notes :

[1] All dimensions are in millimeters.
[2] Scale : none
[3] Undefined tolerance is ±0.2mm

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Characteristics of CUN*6A1A

1. CUN66A1A (365nm)

1-1 Electro-Optical characteristics at 350mA

(T_a=25℃, RH=30%)

Parameter	Symbol	Value	Unit
Peak wavelength [1]	λ_p	365	nm
Radiant Flux [2] @ 350mA	Φ_e[3]	160	mW
Radiant Flux @ 500mA	Φ_e	220	mW
Forward Voltage [4]	V_F	3.8	V
Spectrum Half Width	$\Delta\lambda$	16	nm
View Angle	$2\Theta_{1/2}$	130	deg.
Thermal resistance	$R\theta_{J-s}$[5]	16	ºC /W

1-2 Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Forward Current	I_F	500	mA
Power Dissipation	P_D	2.25	W
Junction Temperature	T_j	125	ºC
Operating Temperature	T_{opr}	-10 ~ +85	ºC
Storage Temperature	T_{stg}	-40 ~ +100	ºC

Notes :
1. Peak Wavelength Measurement tolerance : ±3nm
2. Radiant Flux Measurement tolerance : ± 10%
3. Φ_e is the Total Radiant Flux as measured with an integrated sphere.
4. Forward Voltage Measurement tolerance : ±3%
5. $R\theta_{J-s}$ is the thermal resistance between chip junction to package bottom.

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2. CUN76A1A (375nm)

2-1 Electro-Optical characteristics at 350mA

(T_a=25℃, RH=30%)

Parameter	Symbol	Value	Unit
Peak wavelength [1]	λ_p	375	nm
Radiant Flux [2] @ 350mA	Φ_e[3]	230	mW
Radiant Flux @ 500mA	Φ_e	320	mW
Forward Voltage [4]	V_F	3.6	V
Spectrum Half Width	$\Delta\lambda$	10	nm
View Angle	$2\Theta_{1/2}$	130	deg.
Thermal resistance	$R\theta_{J-s}$[5]	11	ºC /W

2-2 Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Forward Current	I_F	500	mA
Power Dissipation	P_D	2.25	W
Junction Temperature	T_j	125	ºC
Operating Temperature	T_{opr}	-10 ~ +85	ºC
Storage Temperature	T_{stg}	-40 ~ +100	ºC

Notes :
1. Peak Wavelength Measurement tolerance : ±3nm
2. Radiant Flux Measurement tolerance : ± 10%
3. Φ_e is the Total Radiant Flux as measured with an integrated sphere.
4. Forward Voltage Measurement tolerance : ±3%
5. $R\theta_{J-s}$ is the thermal resistance between chip junction to package bottom.

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3. CUN86A1A (385nm)

3-1 Electro-Optical characteristics at 350mA

(T_a=25℃, RH=30%)

Parameter	Symbol	Value	Unit
Peak wavelength [1]	λ_p	385	nm
Radiant Flux [2] @ 350mA	Φ_e[3]	380	mW
Radiant Flux @ 500mA	Φ_e	530	mW
Forward Voltage [4]	V_F	3.5	V
Spectrum Half Width	$\Delta\lambda$	11	nm
View Angle	$2\Theta_{1/2}$	130	deg.
Thermal resistance	$R\theta_{J-s}$[5]	10	ºC /W

3-2 Absolute Maximum Ratings

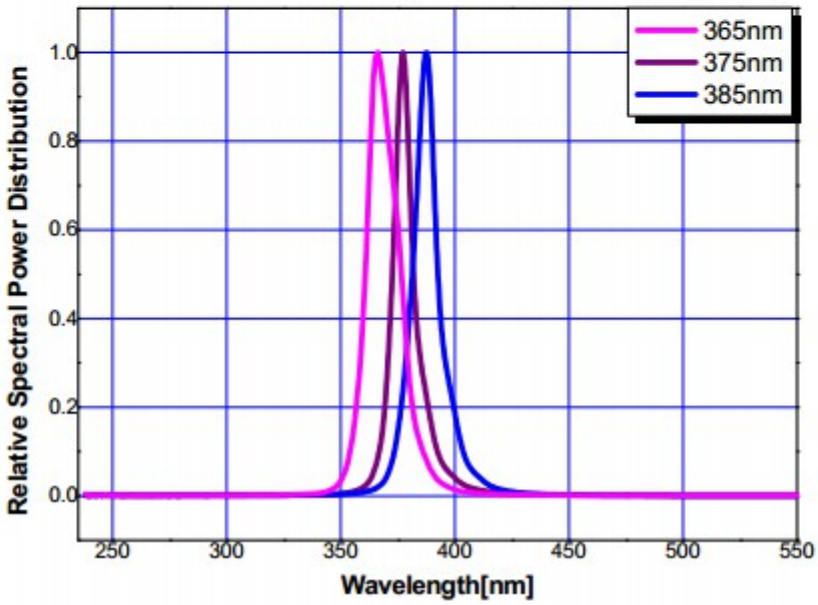
Parameter	Symbol	Value	Unit
Forward Current	I_F	500	mA
Power Dissipation	P_D	2.25	W
Junction Temperature	T_j	125	ºC
Operating Temperature	T_{opr}	-10 ~ +85	ºC
Storage Temperature	T_{stg}	-40 ~ +100	ºC

Notes :
1. Peak Wavelength Measurement tolerance : ±3nm
2. Radiant Flux Measurement tolerance : ± 10%
3. Φ_e is the Total Radiant Flux as measured with an integrated sphere.
4. Forward Voltage Measurement tolerance : ±3%
5. $R\theta_{J-s}$ is the thermal resistance between chip junction to package bottom.

Characteristic Diagrams

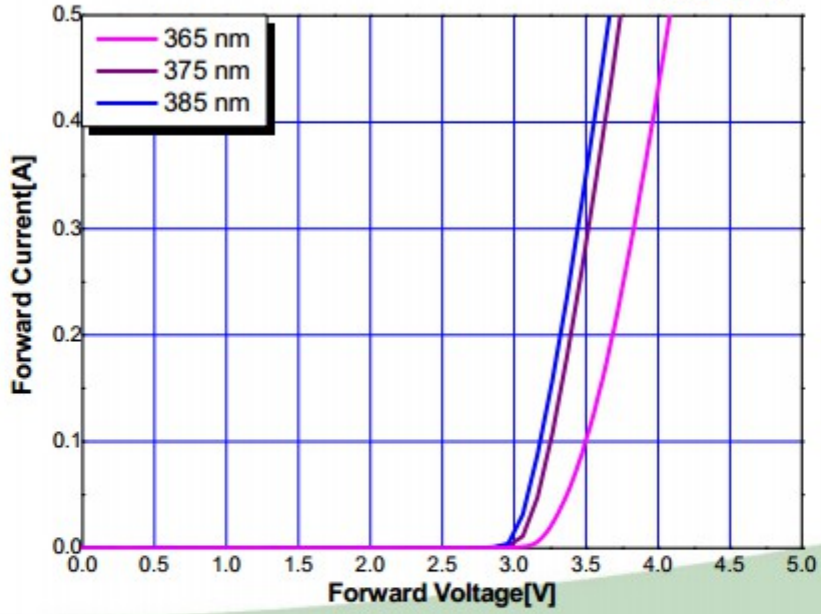
1. Relative Spectral Power Distribution

(I_F=350mA, T_a=25℃, RH=30%)

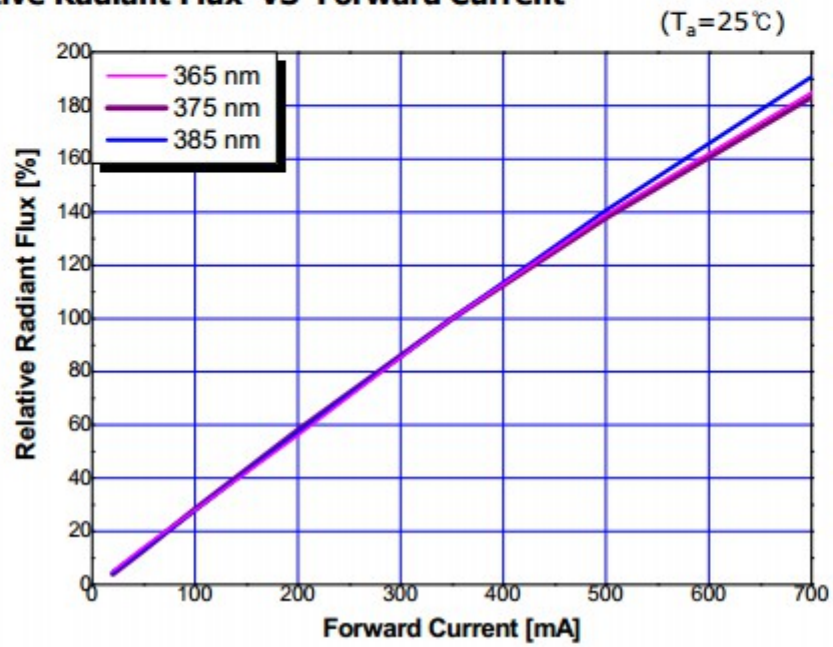


2. Forward Current VS Forward Voltage

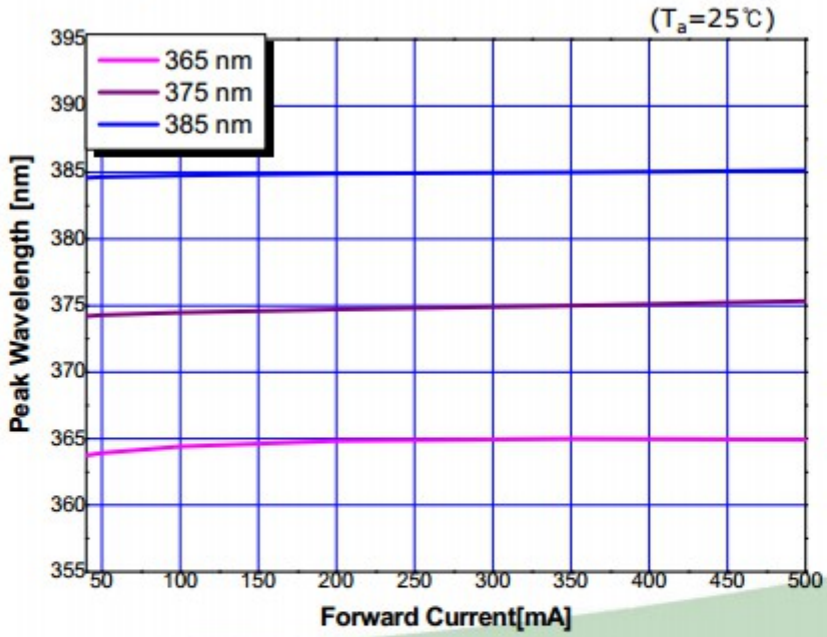
(T_a=25℃)



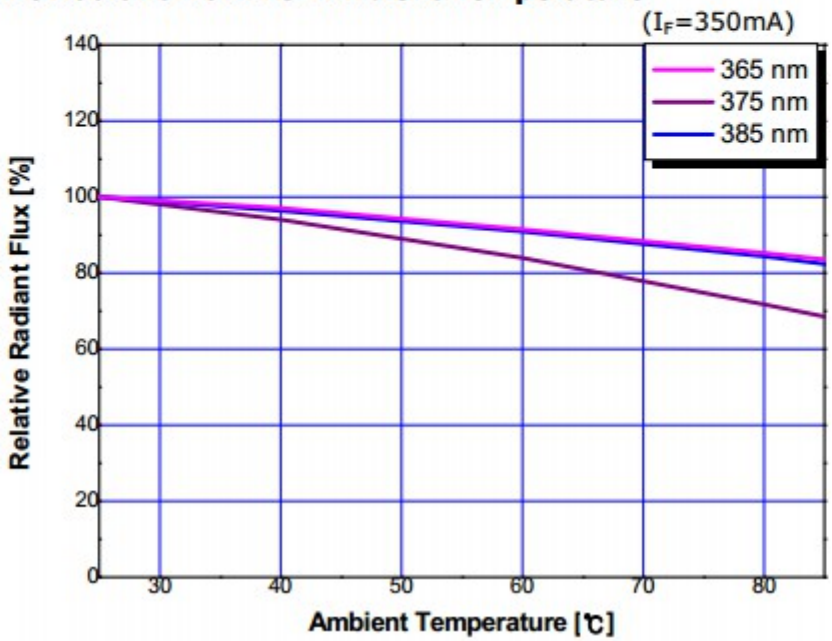
3. Relative Radiant Flux VS Forward Current



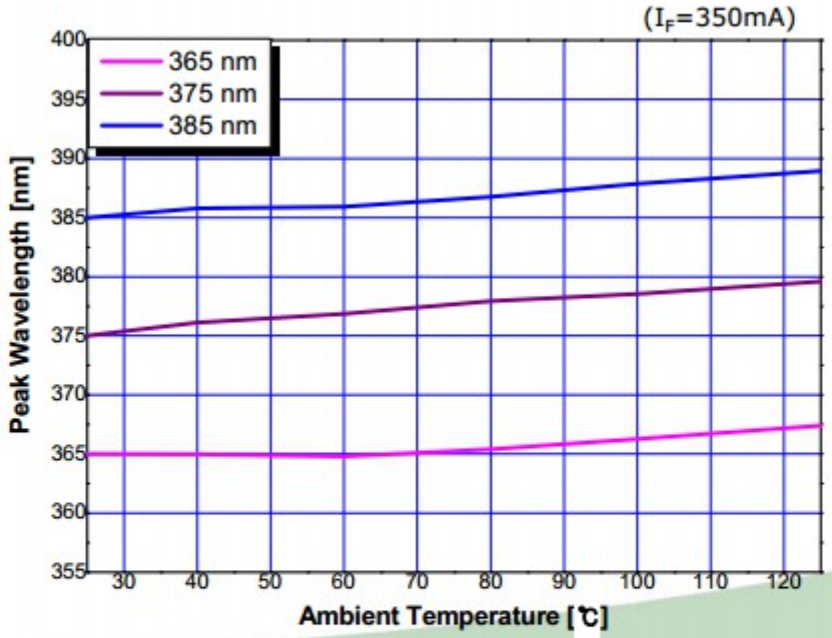
4. Peak Wavelength VS Forward Current



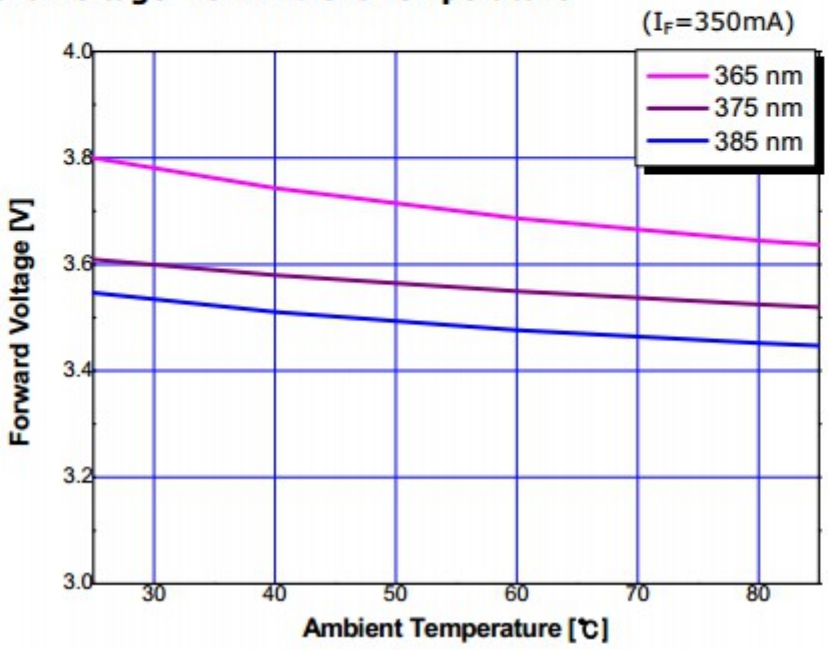
5. Relative Radiant Flux VS Ambient Temperature



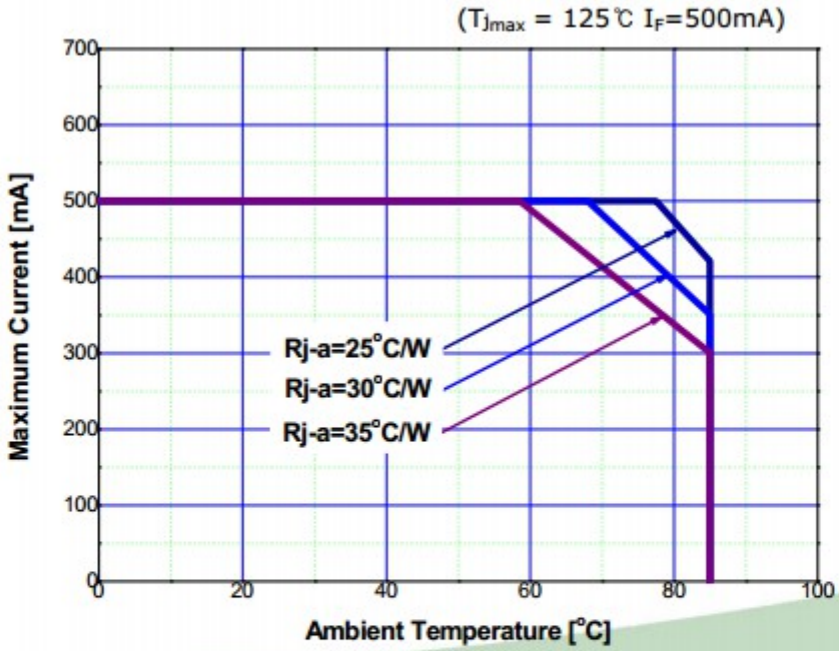
6. Peak Wavelength VS Ambient Temperature



7. Forward Voltage VS Ambient Temperature



8. Allowable Forward Current VS Ambient Temperature



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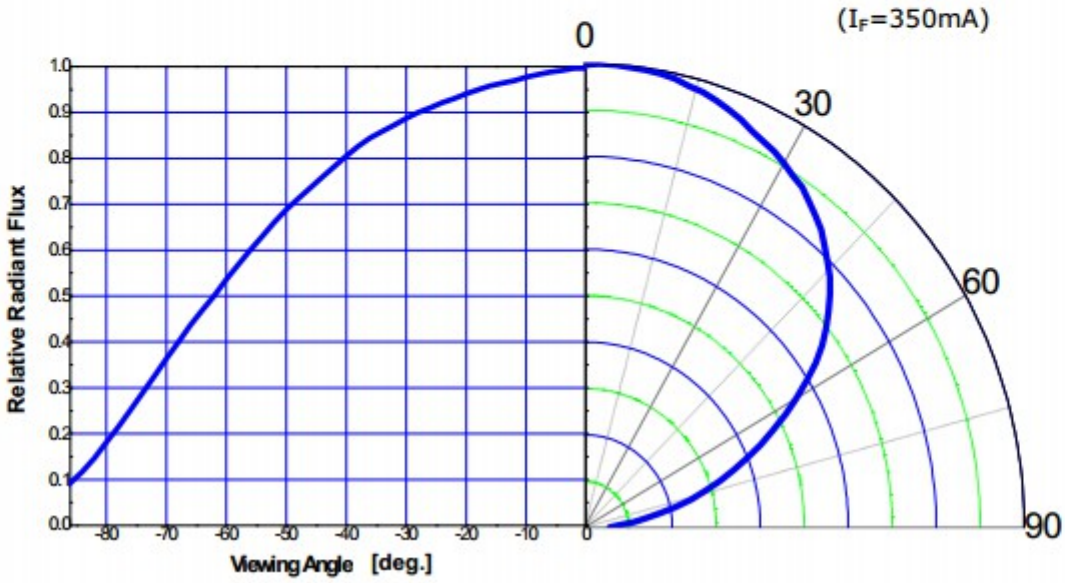
9. Radiation pattern



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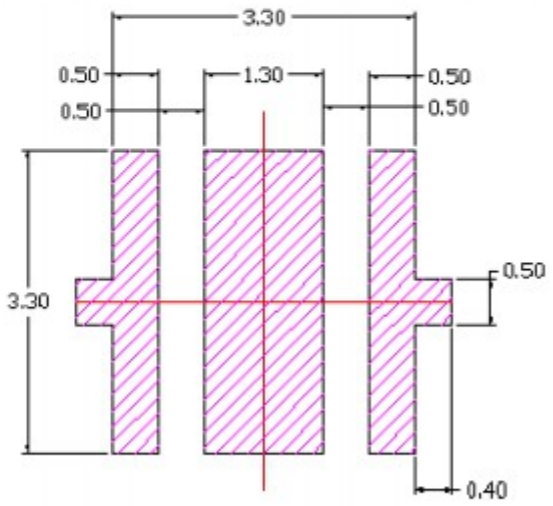
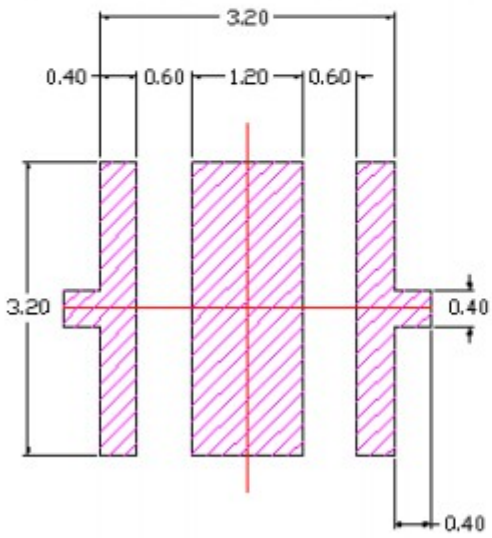
Recommended solder pad



Recommended PCB Solder Pad



Recommended Stencil Pattern

Notes :

[1] All dimensions are in millimeters.
[2] Scale : none
[3] This drawing without tolerances is for reference only

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Precaution for use

- Storage

  To avoid moisture penetration, we recommend storing UV LEDs in a dry box with a desiccant.

  The recommended storage temperature range is 5℃ to 30℃ and a maximum humidity of 50%.

- Use Precaution after opening the Packaging

  Use proper SMD techniques when the LED is to be soldered dipped as separation of the lens may affect the light output efficiency.

  Pay attention to the following:

  a. Soldering should be done as soon as possible after opening the package.

  b. Required conditions after opening the package

  - Sealing
  - Temperature : 5 ~ 30℃ Humidity : less than 30%

  c. Please replace the remained LEDs into the moisture proof bag and reseal the bag after work to avoid those LEDs being exposed to moisture. Prolonged exposure to moisture can adversely affect the proper functioning of the LEDs.

- Do not apply mechanical force or excess vibration during the cooling process to normal temperature after soldering.
- Do not rapidly cool device after soldering.
- Components should not be mounted on warped (non coplanar) portion of PCB.
- Radioactive exposure is not considered for the products listed here in.
- This device should not be used in any type of fluid such as water, oil, organic solvent and etc.

  When washing is required, IPA (Isopropyl Alcohol) should be used.

- When the LEDs are in operation the maximum current should be decided after measuring the package temperature.
- LEDs must be stored properly to maintain the device. If the LEDs are stored for 3 months or more after being shipped from SSC, a sealed container with a nitrogen atmosphere should be used for storage.
- The appearance and specifications of the product may be modified for improvement without notice.
- The slug is isolated from anode electrically.

  Therefore, we recommend that you don't isolate the heat sink.

- Attaching LEDs, do not use adhesives that outgas organic vapor.

- Handling of Silicone resin LEDs

The UV LED is encapsulated with a silicone resin for the highest flux efficiency.

Notes for handling:

a. Avoid touching silicone resin parts especially with sharp tools such as Pincettes (Tweezers)

b. Avoid leaving fingerprints on silicone resin parts.

c. Silicone resin will attract dust so use covered containers for storage.

d. When populating boards in SMT production, there are basically no restrictions regarding the form of the pick and place nozzle, except that excessive mechanical pressure on the surface of the resin must be prevented.

e. It is not recommend to cover the silicone resin of the LEDs with other resin (epoxy, urethane, etc)