

Specification Sheet: Ultra Violet LED Package

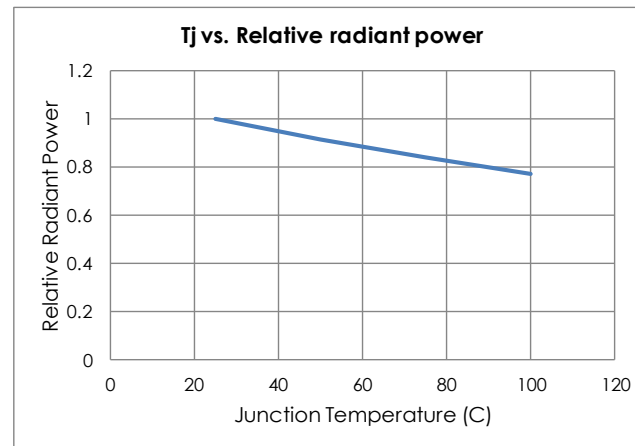
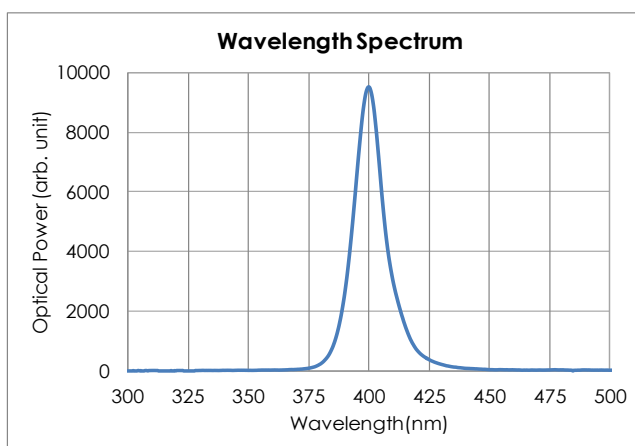
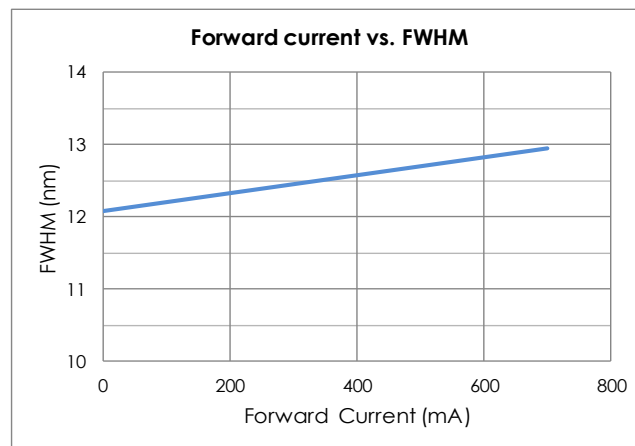
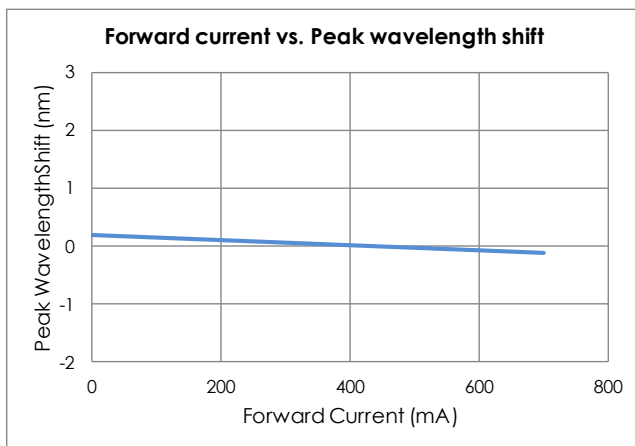
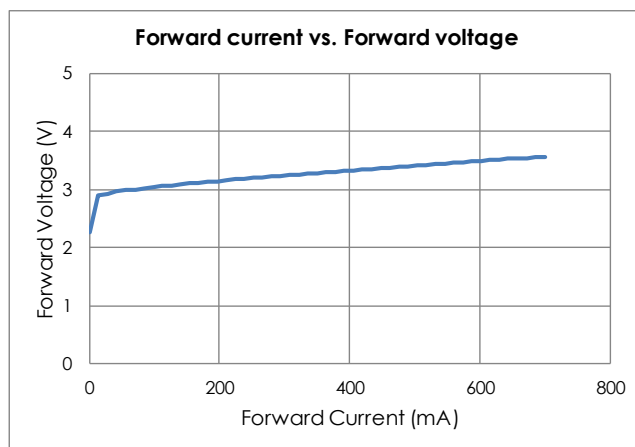
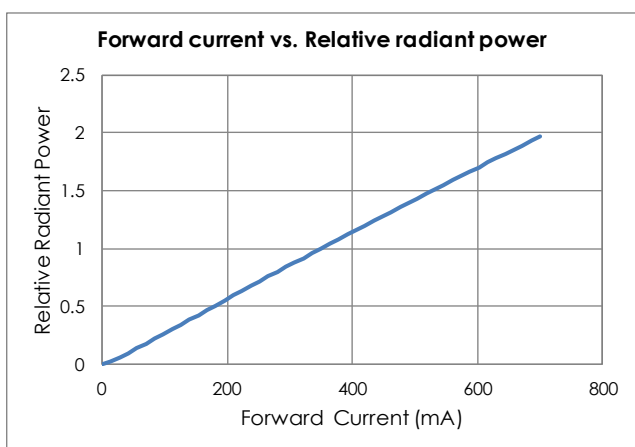
Model: UP3535C2D-S4P15

Type: L4020C2S3

1) Optical and Electrical Characteristics (Ta=25°C)

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	VF	If=350mA	3.1	3.3	3.8	V
Reverse Voltage	Vr	Ir=-5mA	-	-	7	V
Peak Wavelength	Wp	If=350mA	395	-	405	nm
Optical Power	Φ_e	If=350mA	Refer to Rank Information			mW
View Angle	$2\theta_{1/2}$	If=350mA		120	-	Deg.

*All samples are tested using Soft-epi Standard Metal PCB (25mmx25mm; t=1.7mm).



2) Rank Information (Bin Table)

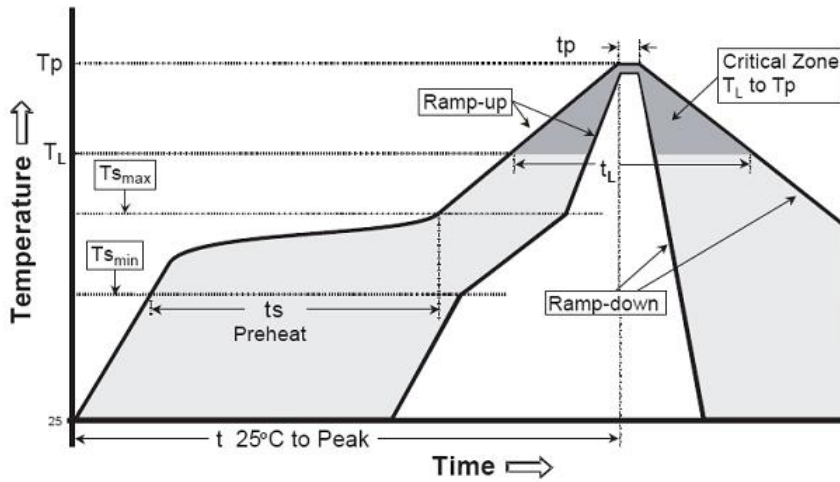
Wp (Peak wavelength)		Po (Optical Power)		Vf (Voltage)	
BIN	nm	BIN	mW	BIN	V
UE	370-375	300	300-350	VA	3.0-3.2
UF	375-380	350	350-400	VB	3.2-3.4
UG	380-385	400	400-450	VC	3.4-3.6
UH	385-390	450	450-500	VD	3.6-3.8
UJ	390-395				
UK	395-400				
UL	400-405				
UM	405-410				

*The above value of optical power (mW) is not calibrated. This value is depends on the measurement equipment.
The bin table could be changed.

3) Absolute Maximum Ratings (Ta=25°C)

Parameters	Symbol	Maximum Value	Unit
Power dissipation (at room temperature)	P_D	1.65	W
DC forward current	I_F	500	mA
Pulse current ; (1/10 duty ratio@1khz)	I_{Fp}	700	mA
Reverse current	$I_r(\text{Max})$	10	μA
Operating temperature	T_{Opr}	-20 ~ +80	°C
Storage temperature	T_{Stg}	-30 ~ +90	°C
Soldering temperature	T_{Sol}	Reflow Soldering : 260°C /5sec (max)	°C
Chip junction temperature	T_j	115	°C

4) Soldering conditions



Profile Feature		Typical parameters (Pb-Free)
Average Ramp-Up Rate ($T_{s_{max}}$ to T_p)		3 °C/second (max.)
Preheat	Temperature Min ($T_{s_{min}}$)	150 °C
	Preheat: Temperature Max ($T_{s_{max}}$)	200 °C
	Time ($t_{s_{min}}$ to $t_{s_{max}}$)	60-180 seconds
Time maintained above	Temperature (T_L)	217 °C
	Time (t_L)	60-150 seconds
Peak Temperature (T_p)		260 °C
Time within 5 °C of Actual Peak Temperature (t_p)		5 seconds
Ramp-Down Rate		6 °C/second (max.)
Time 25 °C to Peak Temperature		8 minutes (max.)

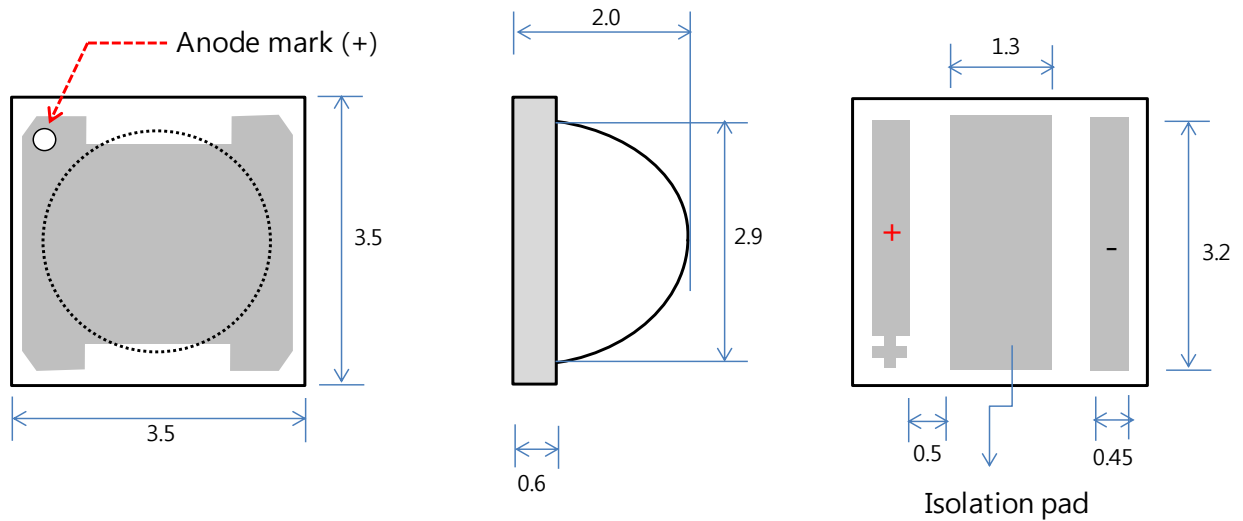
5) Description

- (1) High output Lens type UV LED.
- (2) Compact package outline (LxWxH): 3.50 x 3.50 x 2.0 mm (± 0.2)

* Dimensions units: mm

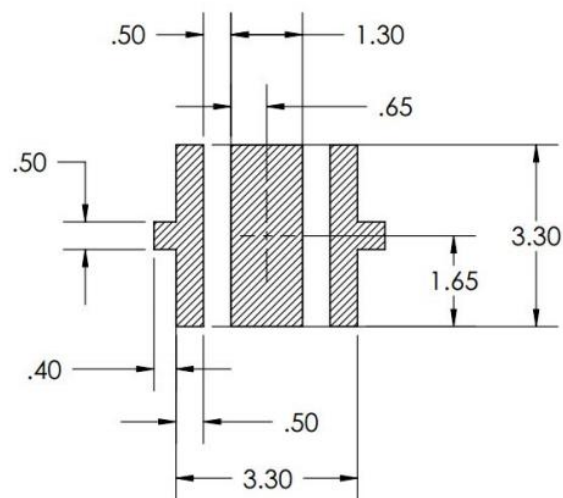
* Tolerance: ± 0.2 (mm)

5-1) Package Dimension



- Package Materials : Ceramic
- Encapsulating Resin Materials: Silicone Resin

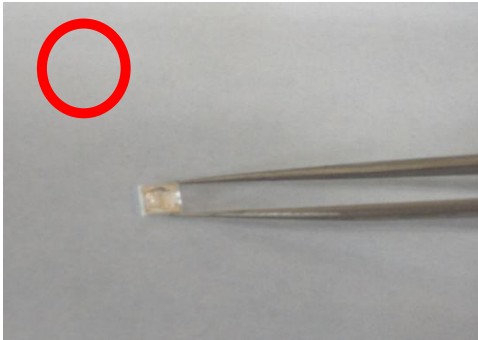
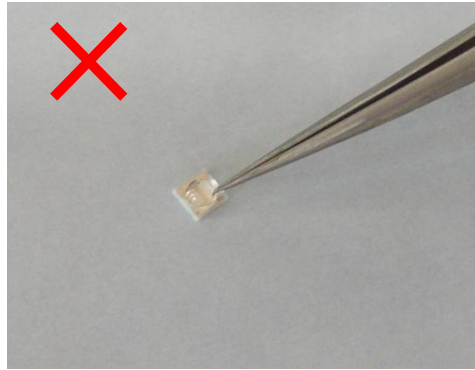
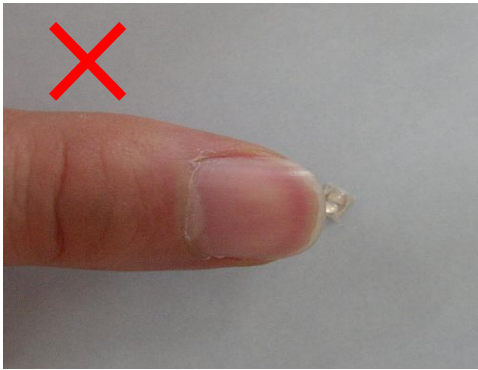
5-2) Recommended PCB Dimension



RECOMMENDED PCB SOLDER PAD

6) Handling Precaution

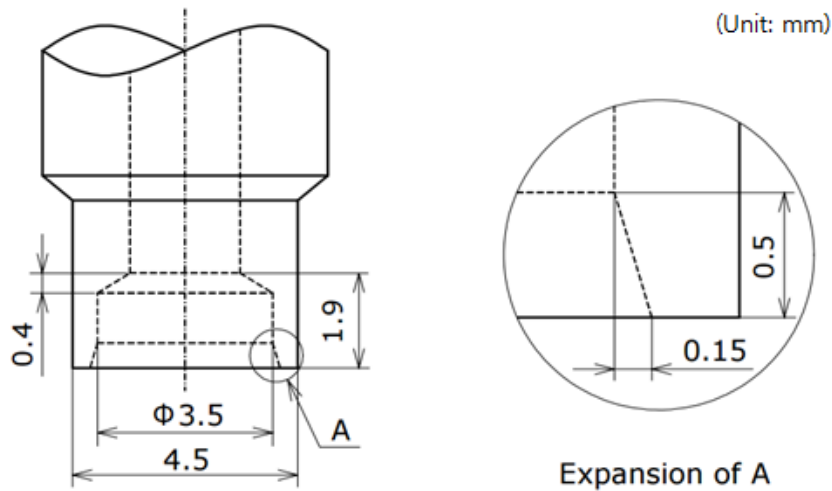
- Avoid leaving fingerprints or scratches (by sharp tools) on the silicone resin parts.



- Do not touch lens with fingers.
- Do not touch lens with the tweezers.
- The LEDs should only be picked up by making contact with the sides of the LED body.
- **Do not apply mechanical pressure on the surface of the silicon resin.** Pressure can cause nicks, chip-outs, encapsulant delamination and deformation, and wire breaks, decreasing reliability.
- In case of pick-and-place nozzle for surface mount assembly, avoid directly contacting the lens with nozzle.
- Dropping the LEDs may cause damage.
- Do not contaminate emitting surface area of the LEDs.
- The LED is designed to be reflow soldered on to a PCB. If dip soldered or hand soldered, the reliability of LEDs cannot be guaranteed.
- Reflow soldering must not be performed more than twice.
- Nitrogen reflow soldering is recommended. Air flow soldering conditions can cause optical degradation, caused by heat and atmosphere.

Using a nozzle designed for LEDs is recommended. (See figure below)

- The nozzle must not have any direct contact with the encapsulating resin.
- **Direct contact with the encapsulating resin may result in internal disconnections** causing the LED not to illuminate.



[Recommended nozzle for LED pick-up]

7) Caution

- Don't look directly into the LED light. UV radiation can harm your eyes.
- To prevent even inadequate exposure, wear protective eyewear.
- If LEDs are embedded in devices, please indicate warning labels against the UV light LED used.