

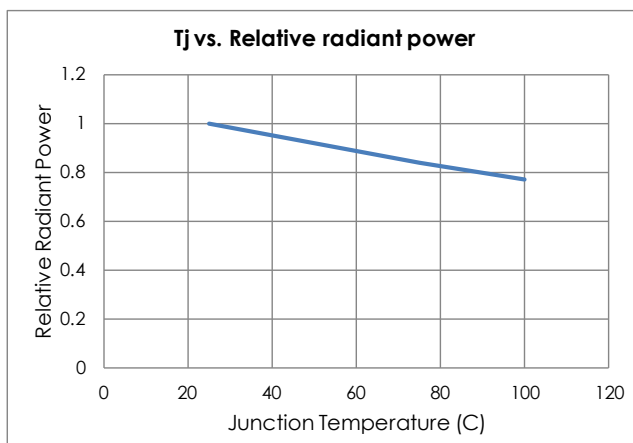
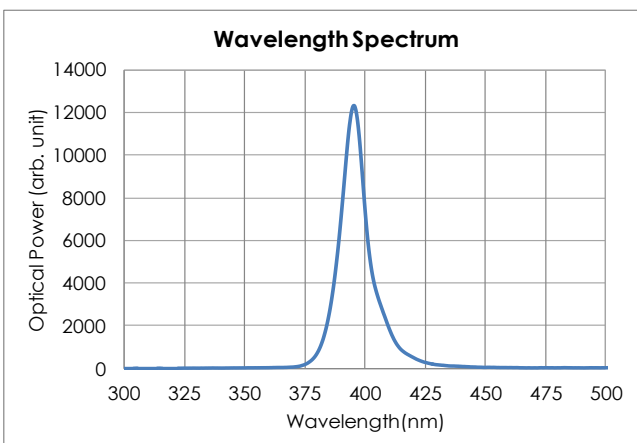
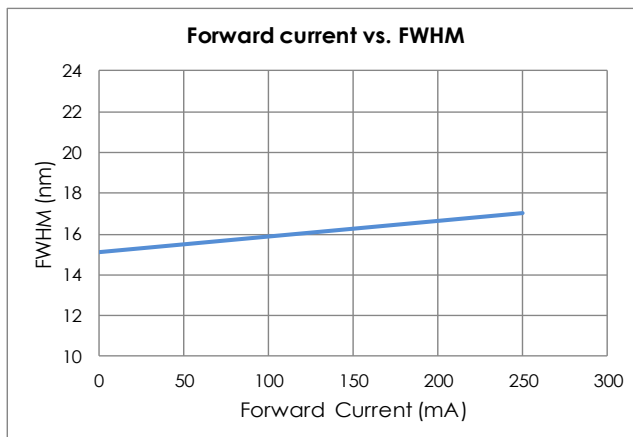
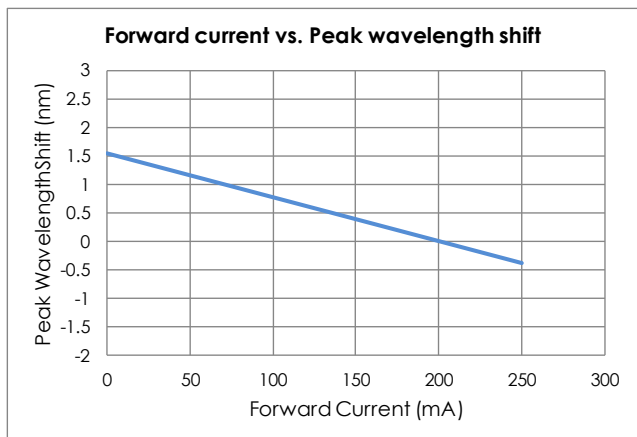
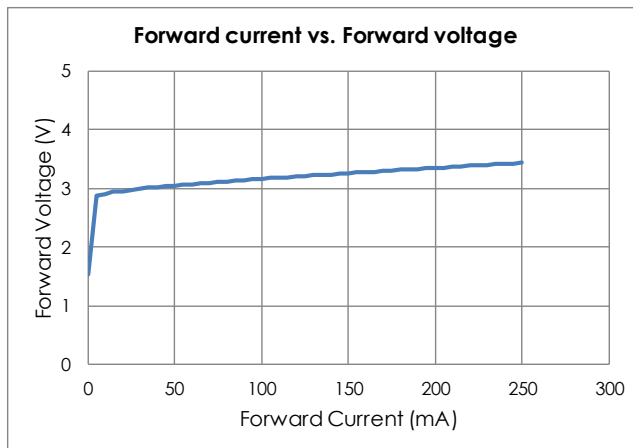
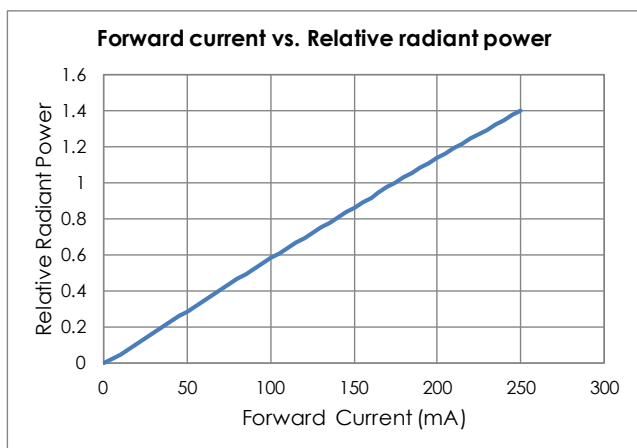
Specification Sheet: Ultra Violet LED Package

Model: UP3528E2F-S4P05

Type: L4020C1S3

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

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	VF	If=175mA	3.0	3.3	3.6	V
Reverse Voltage	Vr	Ir=-5mA	-	-	7	V
Peak Wavelength	Wp	If=175mA	390	-	400	nm
Optical Power	Φ_e	If=175mA	Refer to Rank Information			mW
View Angle	$2\theta_{1/2}$	If=175mA		120	-	Deg.



2) Rank Information (Bin Table)

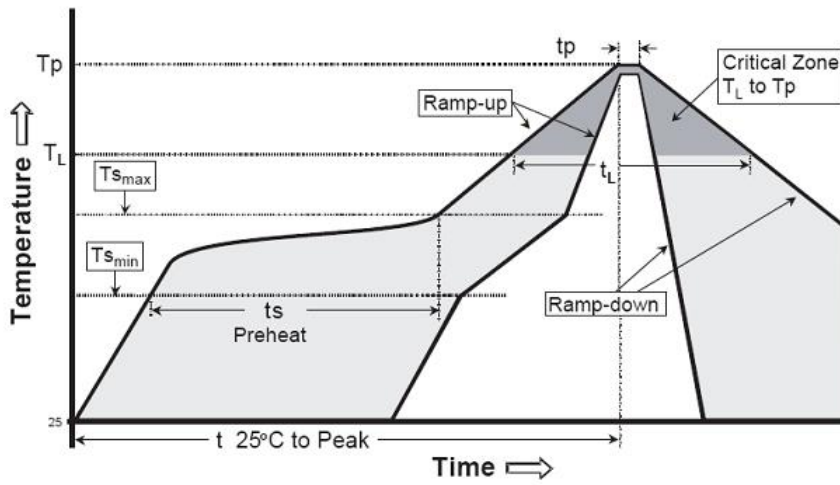
Wp (Peak wavelength)		Po (Optical Power)		Vf (Voltage)	
BIN	nm	BIN	mW	BIN	V
UE	370-375	100	100-150	VA	3.0-3.2
UF	375-380	150	150-200	VB	3.2-3.4
UG	380-385	200	200-250	VC	3.4-3.6
UH	385-390			VD	3.6-3.8
UJ	390-395				
UK	395-400				
UL	400-405				
UM	405-410				

*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	0.5	W
DC forward current	I_F	175	mA
Pulse current ; (1/10 duty ratio@1khz)	I_{Fp}	300	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

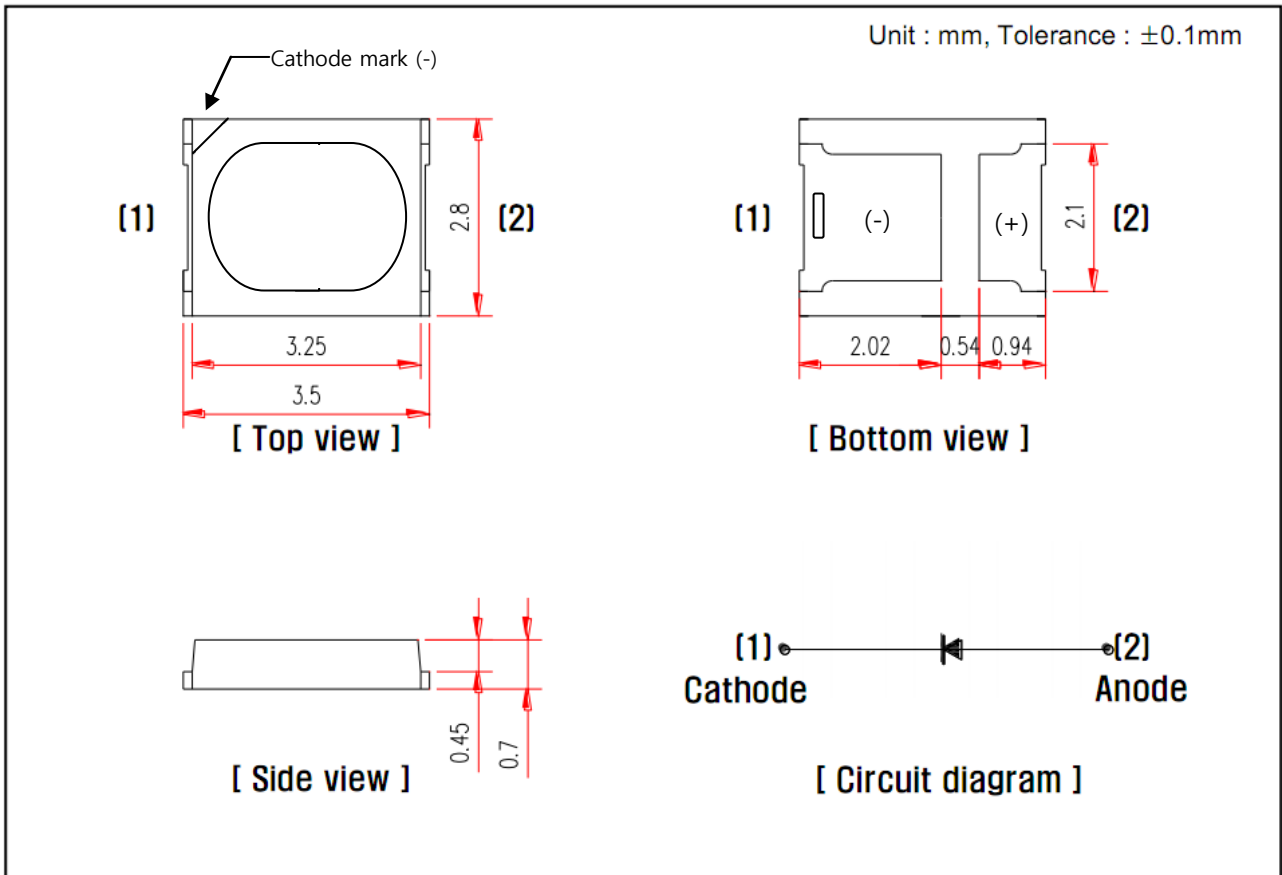


Profile Feature		Typical parameters (Pb-Free)
Average Ramp-Up Rate ($T_{s_{max}}$ to T_p)		3 °C/second (max.)
Preheat	Temperature Min ($T_{s_{min}}$)	150 °C
	Preheat: Temperature Max ($T_{s_{max}}$)	200 °C
	Time ($t_{s_{min}}$ to $t_{s_{max}}$)	60-180 seconds
Time maintained above	Temperature (T_L)	217 °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.)

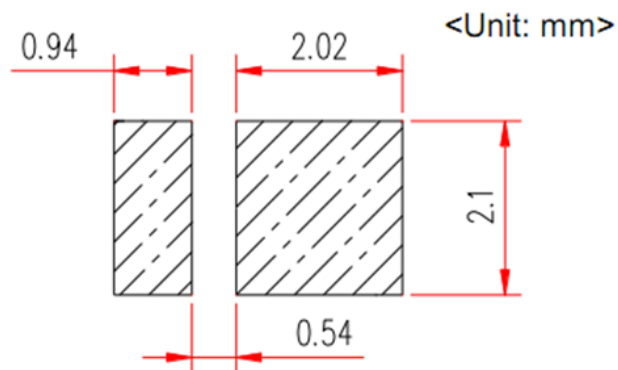
5) Description

- (1) High output Lens type UV LED.
- (2) Compact package outline (LxWxH): 3.5 x 2.8 x 0.7 mm (± 0.1)

5-1) Package Dimension



5-2) Recommended PCB pattern



6) Handling Precaution

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



- Do not touch silicone resin with fingers.
- Do not touch silicone resin 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.**
- In case of pick-and-place nozzle for surface mount assembly, avoid directly contacting the silicone resin with nozzle.
- Dropping the LEDs may cause damage.
- Do not contaminate emitting surface area of the LEDs.

7) Caution

- LEDs emit very strong UV radiation.
- 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.
- Keep out of reach of children.



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