

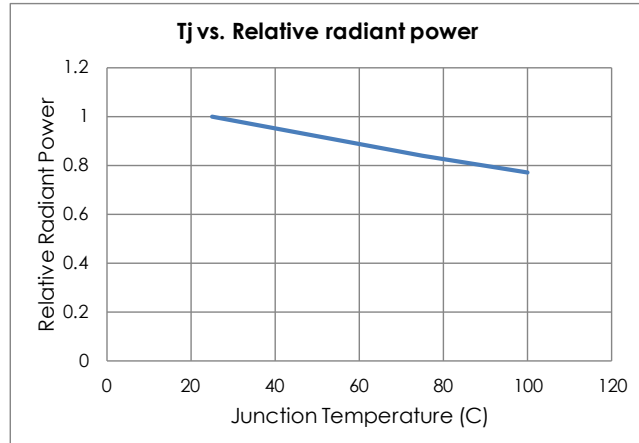
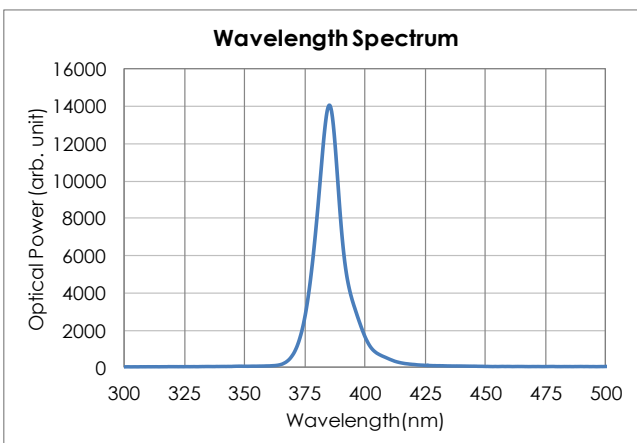
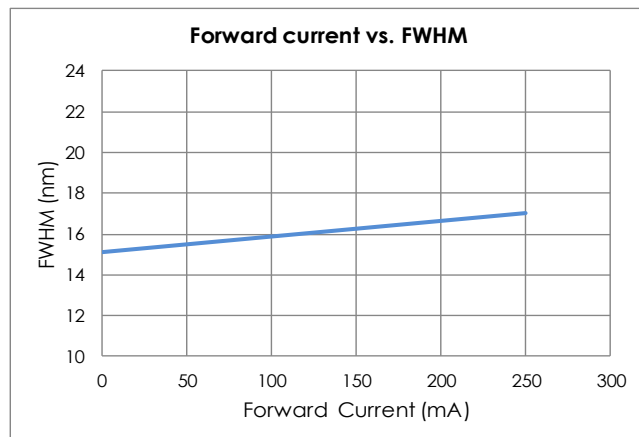
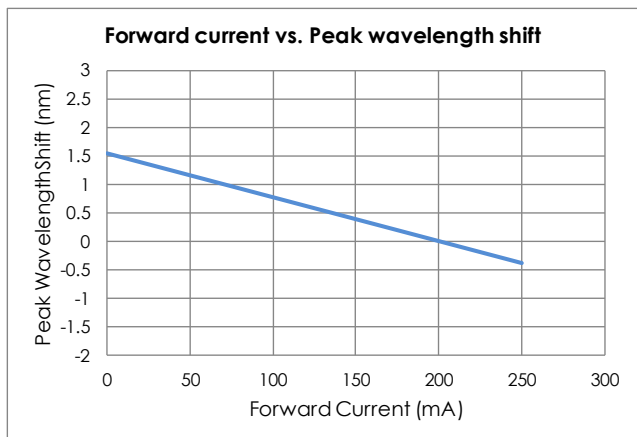
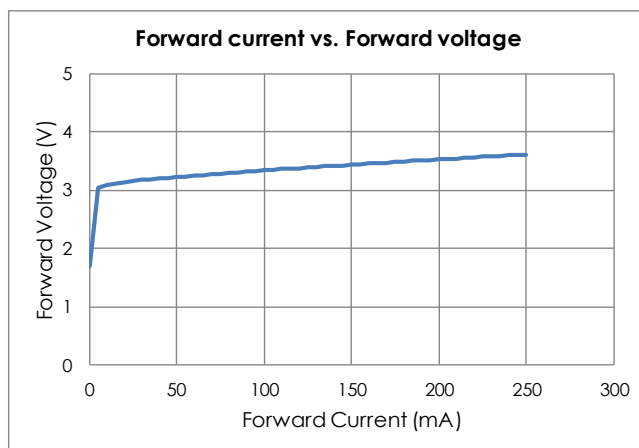
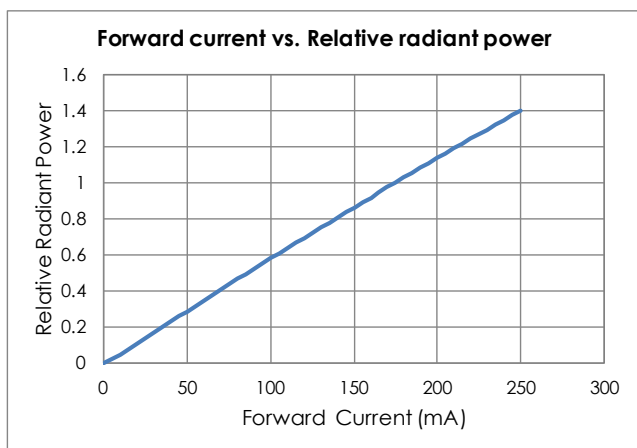
# Specification Sheet: Ultra Violet LED Package

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	3.2	3.5	3.8	V
Reverse Voltage	Vr	Ir=-5mA	-	-	7	V
Peak Wavelength	Wp	If=175mA	380	-	390	nm
Optical Power	$\Phi_e$	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)	
BIN	nm
UE	370-375
UF	375-380
UG	380-385
UH	385-390
UJ	390-395
UK	395-400
UL	400-405
UM	405-410

Po (Optical Power)	
BIN	mW
30	30-40
40	40-50
50	50-60
60	60-70
70	70-80

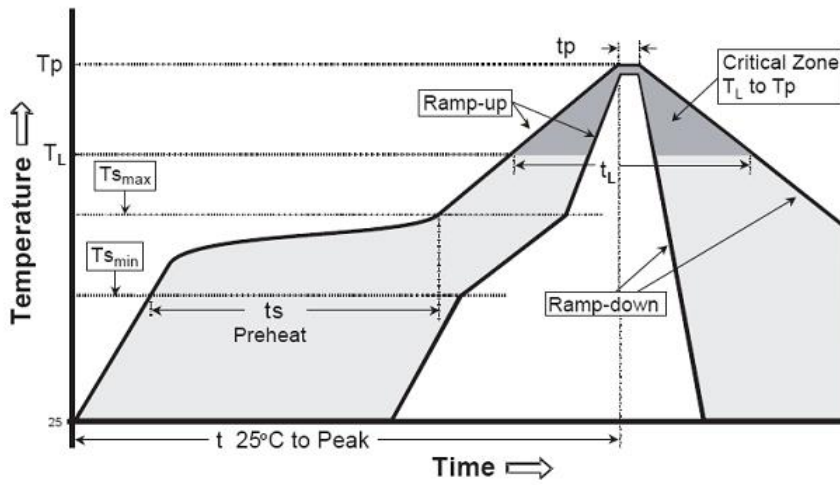
Vf (Voltage)	
BIN	V
VA	3.0-3.2
VB	3.2-3.4
VC	3.4-3.6
VD	3.6-3.8

\*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)	$I_{Fp}$	250	mA
Reverse current	$I_r(\text{Max})$	10	$\mu\text{A}$
Operating temperature	$T_{\text{Opr}}$	-20 ~ +80	°C
Storage temperature	$T_{\text{Stg}}$	-30 ~ +90	°C
Soldering temperature	$T_{\text{Sol}}$	Reflow Soldering : 260°C /5sec (max)	°C
Chip junction temperature	$T_j$	115	°C

#### 4) Soldering conditions

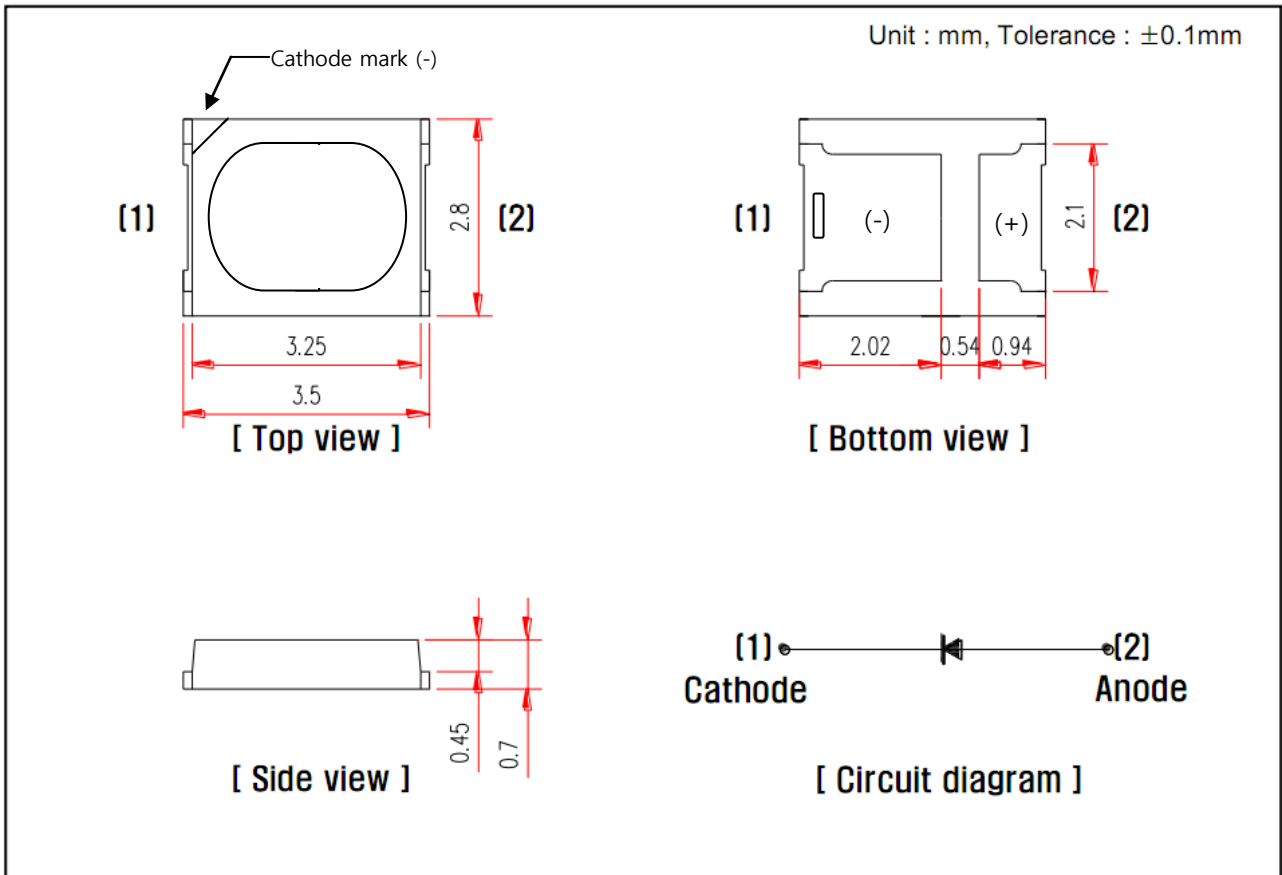


Profile Feature		Typical parameters (Pb-Free)
Average Ramp-Up Rate ( $T_{s_{max}}$ to $T_p$ )		3 °C/second (max.)
Preheat	Temperature Min ( $T_{s_{min}}$ )	150 °C
	Preheat: Temperature Max ( $T_{s_{max}}$ )	200 °C
	Time ( $t_{s_{min}}$ to $t_{s_{max}}$ )	60-180 seconds
Time maintained above	Temperature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

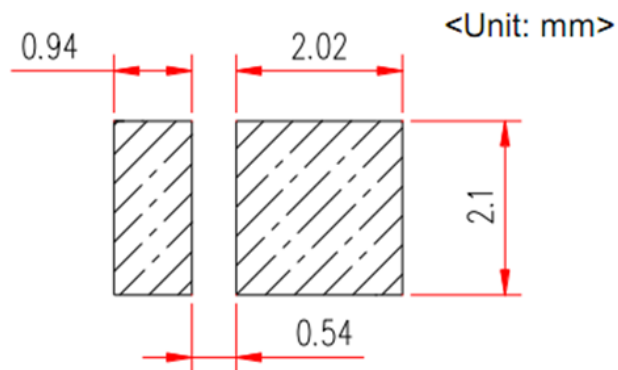
## 5) Description

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

### 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.



### Soft-Epi Inc.

[H.Q.] 633-2, Goan-ri, Baekam-myeon, Cheoin-gu, Yongin-city, Gyeonggi, 449-863, Korea

TEL : 82-31-330-7961,

[R&D] 240 Opo-ro, Opo-eup, Gwangju-si, Gyeonggi-do, Korea

Tel : +82-70-4915-5500, Fax : +82-31-765-3586

URL: [www.soft-epi.com](http://www.soft-epi.com)