

Specification

YL-4D6363F(116)-310nM(20mW)

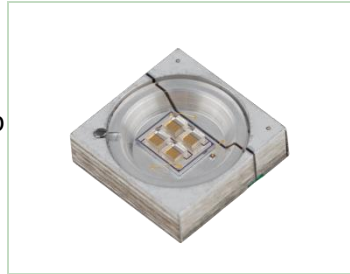
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YL-4D6363F(116)-310nM(20mW)

Description

YL-4D6363F(116)-310nM(20mW) is a deep ultraviolet light emitting diode with peak emission wavelengths from 305nm to 315nm. The LED is sealed in full aluminum packages with a choice of UV-transparent optical window. It incorporates state of the art SMD design and low thermal resistance. YL-4D6363F(116)-310nM(20mW) is designed for air and water sterilization and tools including chemical and biological analysis in that spectral range.



Features

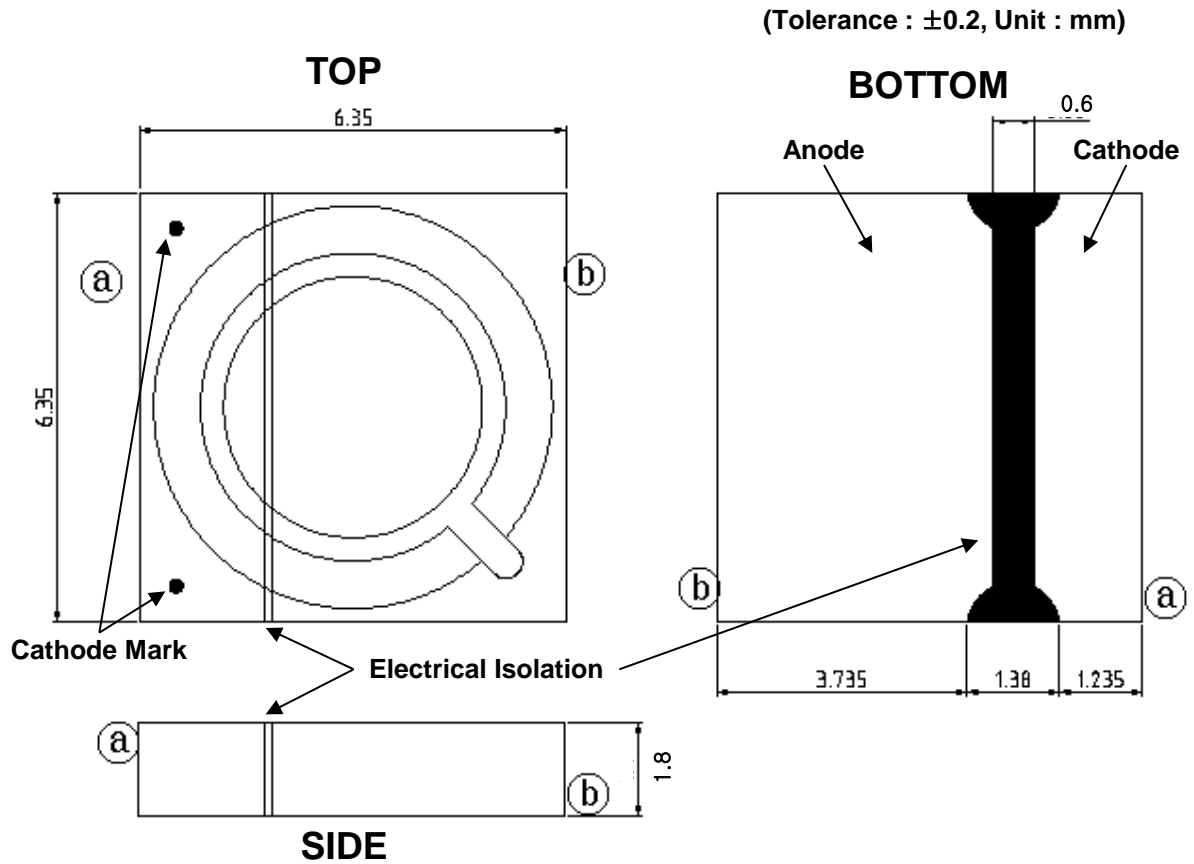
- Deep ultraviolet LED
- Low thermal resistance
- SMT solderable
- Lead Free product
- RoHS compliant

Applications

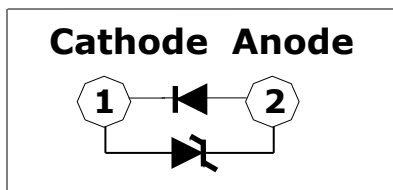
- Disinfection
- Fluorescent spectroscopy
- Chemical and Biological analysis

Outline dimensions

< Package Outline >



< Circuit Diagram >



Material Information	
PKG body	Metal
Lens	Glass

Notes :

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

1. YL-4D6363F(116)-310nm(20mW) (310nm)

1-1 Electro-Optical characteristics at 600mA

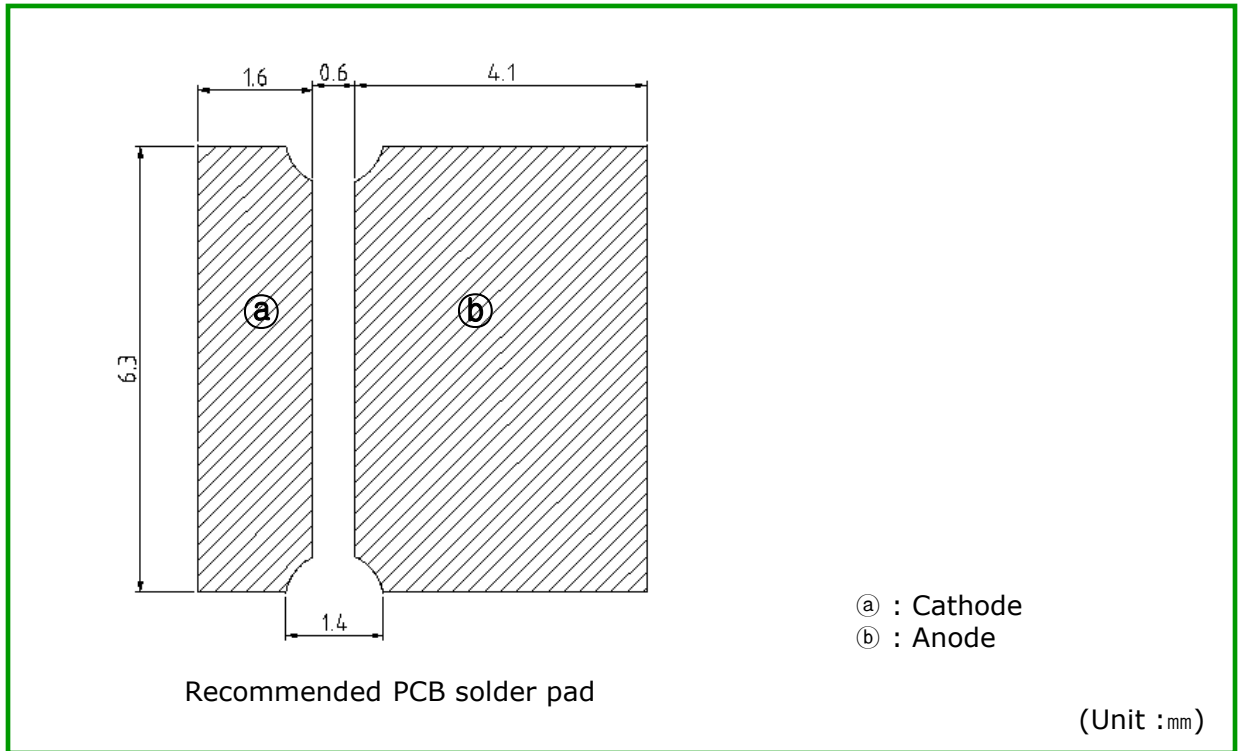
(Ta=25°C, RH=30%)

Parameter	Symbol	Value	Unit
Peak wavelength ^[1]	λ_p	310	nm
Radiant Flux ^[2]	Φ_e ^[3]	20	mW
Forward Voltage ^[4]	V_F	5.5	V
Spectrum Half Width	$\Delta\lambda$	10	nm
View Angle	$2\theta_{1/2}$	-	deg.
Thermal resistance	$R\theta_{j-s}$	-	°C/W

Notes :

1. Peak Wavelength Measurement tolerance : $\pm 3\text{nm}$
2. Radiant Flux Measurement tolerance : $\pm 10\%$
3. Φ_e is the Total Radiant Flux as measured with an integrated sphere.
4. Forward Voltage Measurement tolerance : $\pm 3\%$

Recommended solder pad

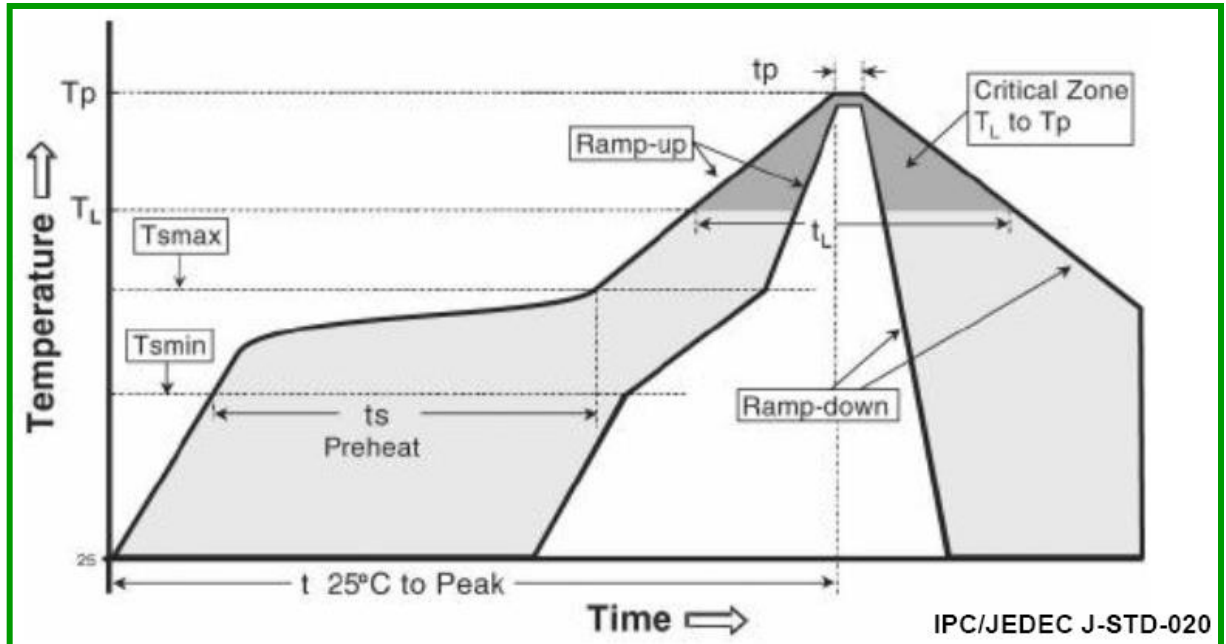


Notes :

[1] Scale : none

[2] This drawing without tolerances are for reference only

Reflow Soldering Profile



Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average ramp-up rate (Ts_max to Tp)	3° C/second max.	3° C/second max.
Preheat		
- Temperature Min (Ts_min)	100 °C	150 °C
- Temperature Max (Ts_max)	150 °C	200 °C
- Time (Ts_min to Ts_max) (ts)	60-120 seconds	60-180 seconds
Time maintained above:		
- Temperature (TL)	183 °C	217 °C
- Time (tL)	60-150 seconds	60-150 seconds
Peak Temperature (Tp)	215°C	260°C
Time within 5°C of actual Peak Temperature (t)2	10-30 seconds	20-40 seconds
Ramp-down Rate	6 °C/second max.	6 °C/second max.
Time 25°C to Peak Temperature	6 minutes max.	8 minutes max.

* Caution

1. Reflow soldering should not be done more than one time.
2. Repairs should not be done after the LEDs have been soldered. When repair is unavoidable, suitable tools must be used.
3. Die slug is to be soldered.
4. When soldering, do not put stress on the LEDs during heating.
5. After soldering, do not warp the circuit board.
6. Recommend to use a convection type reflow machine with 7 ~ 8 zones.

Precaution for use

1) Storage

- To avoid moisture penetration, we recommend storing UV LEDs in a dry box with a desiccant. The recommended temperature and Relative humidity are between 5°C and 30°C and below 50% respectively.
- 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.
- If the package has been opened more than 4 week(MSL_2a) or the color of the desiccant changes, components should be dried for 10-24 hr at 60±5°C
- The conditions of resealing are as follows
 - Temperature is 5 to 30°C and Relative humidity is less than 60%

2) Handling Precautions

- VOCs (Volatile organic compounds) emitted from materials used in the construction of fixtures can penetrate silicone encapsulants of LEDs and discolor them when exposed to heat and photonic energy. The result can be a significant loss of light output from the fixture. Knowledge of the properties of the materials selected to be used in the construction of fixtures can help prevent these issues.
- In case of attaching LEDs, do not use adhesives that outgas organic vapor.
- Soldering should be done as soon as possible after opening the moisture-proof bag.
- Do not rapidly cool device after soldering.
- Do not apply mechanical force or excess vibration during the cooling process to normal temperature after soldering.
- Components should not be mounted on warped (non coplanar) portion of PCB.
- The UV LED is encapsulated with a silicone resin for the highest flux efficiency. So it needs to be handled carefully as below
 - Avoid touching silicone resin parts especially with sharp tools such as pincettes(Tweezers)



- Avoid leaving fingerprints on silicone resin parts.
- Silicone resin will attract dust so use covered containers for storage.
- 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.
- It is not recommend to cover the silicone resin of the LEDs with other resin (epoxy, urethane, etc).

3) 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 equipment during operation.

4) Cleaning

- This device is not allowed to be used in any type of fluid such as water, oil, organic solvent , etc.

5) Others

- The appearance and specifications of the product may be modified for improvement without notice.
- When the LEDs are in operation the maximum current should be decided after measuring the package temperature.
- The driving circuit must be designed to allow forward voltage only when it is ON or OFF. If the reverse voltage is applied to LED, migration can be generated resulting in LED damage.
- Do not handle this product with acid or sulfur material in sealed space.

