

Technical Data Sheet

Specification

U330A4TV44Z1

(365nm)



Company introduction:

BYTECH Electronics CO., Ltd, Chinese national high and new tech enterprise, is a subsidiary company of Hongli Zhihui Group (stock code: 300219). BYTECH is the first company in China to produce and sale the full inorganic UV LEDs, and to provide application solutions for customer.

CMH packaging technology platform is a kind of packaging technology which adopts ceramic, metal, hard glass as packaging materials. CMH packaging technology platform originates independent intellectual property owned by BYTECH. By now, BYTECH can provide CMH series (high reliability) and U/D series (high cost performance) products, including UVA/UVB/UVC/VCSEL. It covers curing, printing, (money) authentication, medical, disinfection/sterilization and security industry.

DESIGN	CHECKED	APPROVED
2022.02.08	2022.02.08	2022.02.08
FANG 研	发 FANG 用	章 REN

U330A4TV44Z1



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

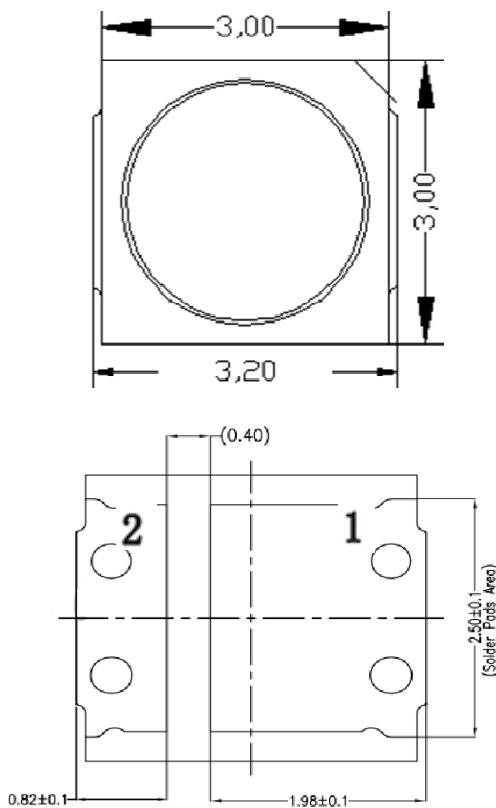
Features

- Resin package
- Dimension 3.0mm×3.0mm×0.6mm
- Long operating life
- High reliability
- Superior ESD protection
- RoHS compliant

Applications

- UV curing
- Fluorescence spectrum analysis
- Air purification
- Medical

Package Dimensions (Unit: mm)



Tolerance : ± 0.20mm

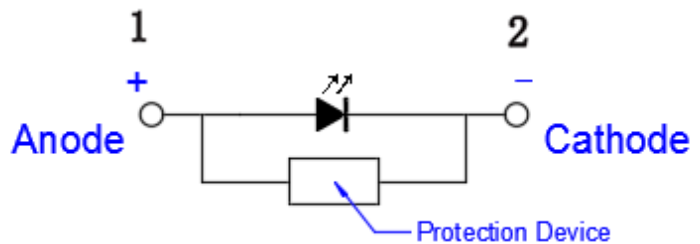
Product ID:

U330A4TV44Z1

Where,

- U:Packaging technology , silicone dispensing
- 3: radiation angle, 120°
- 30: package size, 3.0mm*3.0mm
- A4: peak wavelength, 360-370nm
- TV44: LED chip code, vertical chip
- Z1: Zener chip code

Circuit:



Characteristics of UV LED

1. Electrical / Optical Characteristics (Ta=25°C,RH=40%)

Parameter	Symbol	Units	U330A4TV44Z1 (IF=150mA)
Peak Wavelength [1]	λ_p	nm	360-370
Radiant Flux [2]	Φ_e [3]	mW	100-200
Forward Voltage [4]	VF	V	3.7-4.2
Spectrum Half Width	$\Delta\lambda$	nm	11
View Angle	$2\theta_{1/2}$	deg	120

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

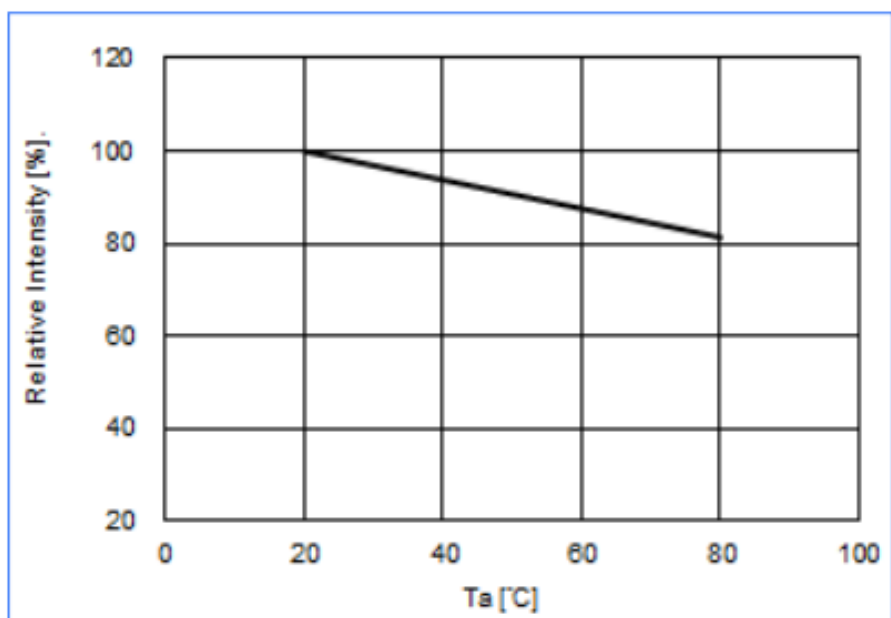
[4].Forward voltage measurement tolerance:±3%

2. Absolute Maximum Ratings (Ta=25°C,RH=40%)

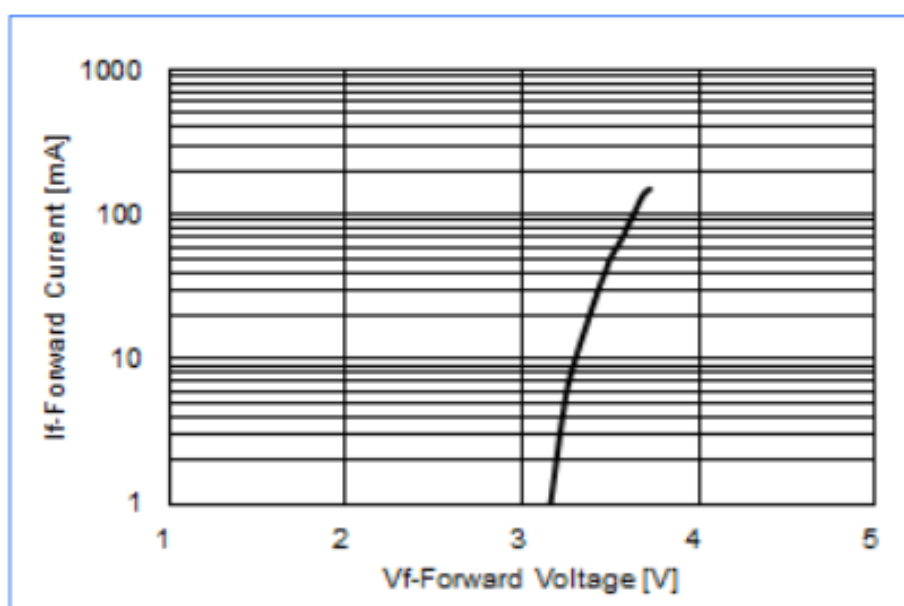
Parameter	Sym- bol	Units	U330A4TV44Z1
Maximum Rating Forward Current	I_{Fmax}	mA	150
Maximum Rating Junction Tempera- ture	T_{jmax}	°C	115
Operating Tempera- ture Range	T_{opr}	°C	-40 ~ +85
Storage Temperature Range	T_{stg}	°C	-20~ +65

Characteristics Diagrams

1. Relative Intensity (@150mA) vs. Ambient Temperature

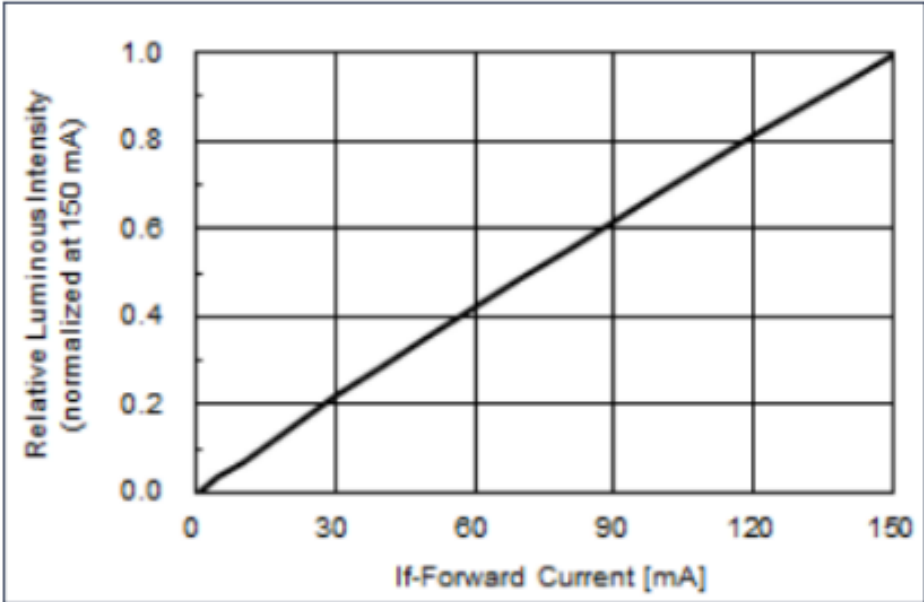


2. Forward Voltage vs Forward Current

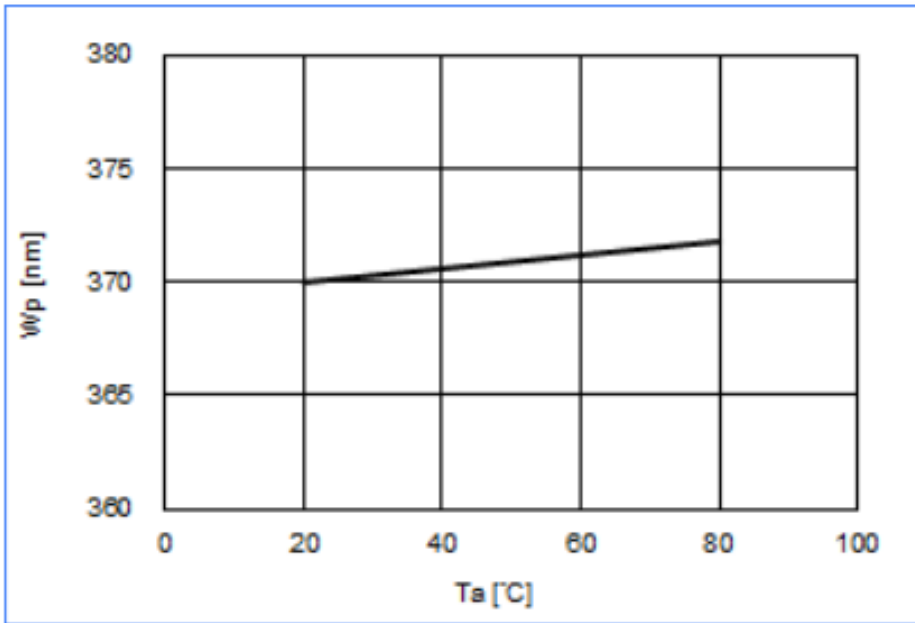


Under Development	
Mass Production	●

3.Relative Radiation Flux vs Forward Current

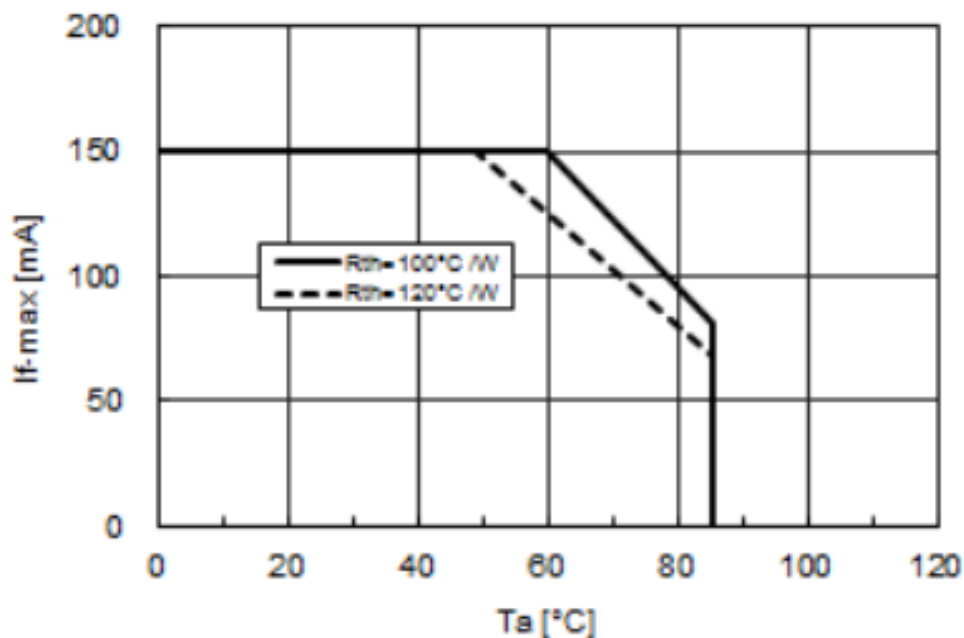


4.Peak Wavelength (@150mA) vs. Ambient Temperature

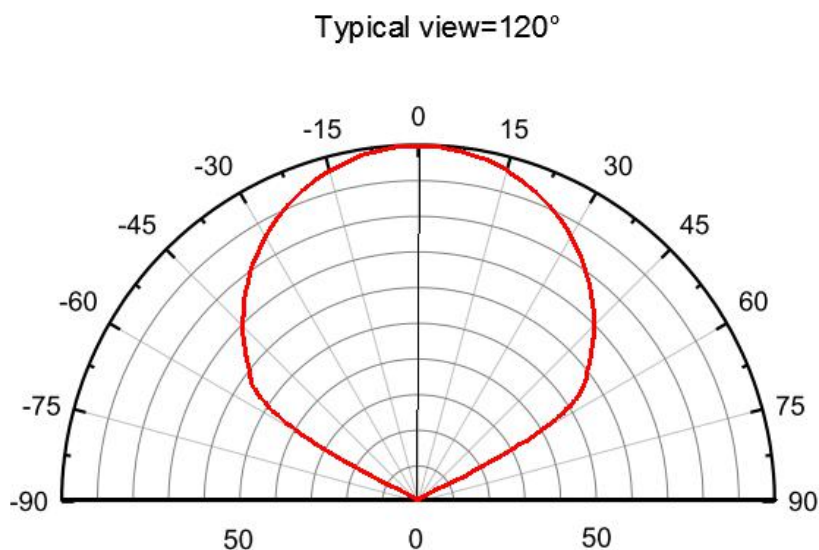


Under Development	
Mass Production	●

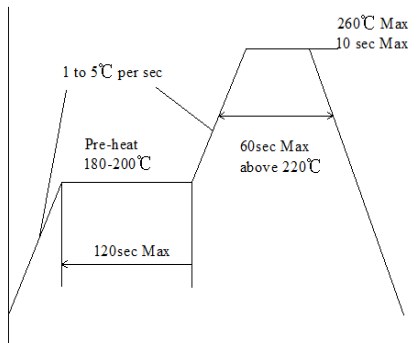
5. Maximum Driving Forward DC Current vs. Ambient Temperature (Derating based on $T_j \text{ max.} = 115^{\circ}\text{C}$)



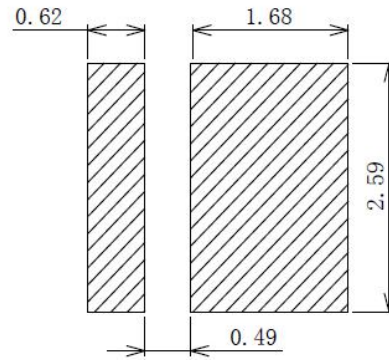
6. Spatial Distribution Graph



Product Application Information



Recommended Reflow Soldering Condition
(Lead-free solder)



Recommended Soldering pad Layout
(Unit: mm)

Notes:

- *This LED is designed to be reflow soldered on to a PCB. If dip soldered or hand soldered, Bytech cannot guarantee its reliability.
- *Reflow soldering must not be performed more than twice.
- *Avoid rapid cooling. Ramp down the temperature gradually from the peak temperature.
- *Nitrogen reflow soldering is recommended. Air flow soldering conditions can cause optical degradation, caused by heat and/or atmosphere.
- *Since the glass used in the encapsulating glass is fragile, do not press on the encapsulant glass. pressure can cause nicks, chip-outs, encapsulant delamination and deformation, and wire breaks, decreasing reliability
- *Repairing should not be done after the LEDs have been soldered.
It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.
- *The Die Heat Sink should be soldered to customer PCB. If it is difficult or impossible, use high heat-dissipating adhesive.
- *When soldering, do not apply stress to the LED while the LED is hot.
- *When using a pick and place machine, choose an appropriate nozzle for this product.
- *When flux is used, it should be a halogen free flux. Ensure that the manufacturing process is not designed in a manner
Where the flux will come in contact with the LEDs.
- *Make sure that there are no issues with the type and amount of solder that is being used.

CAUTIONS

1. Handling Precautions

- Do not handle the LEDs with bare hands as it will contaminate the LEDs surface and may affect the optical characteristics.
- When handling the product with tweezers, be careful not to apply excessive force to the resin. Otherwise, The resin can be cut, chipped, delaminate or deformed, causing wire-bond breaks and catastrophic failures.
- Dropping the product may cause damage.

2. Electrostatic Discharge (ESD)

- The product are sensitive to static electricity or surge voltage. ESD can damage a die and its reliability. When handling the products, the following measure against electrostatic discharge are strongly recommended:

Eliminating wrist strap, ESD footwear, clothes, and floors

Grounded workstation equipment and tools

ESD table/shelf mat made of conductive materials

- Ensure that tools, jigs and machines that are being used are properly grounded and that proper grounding techniques are used in work areas. For devices/equipment that mount the LEDs, protection against surge voltages should also be used.

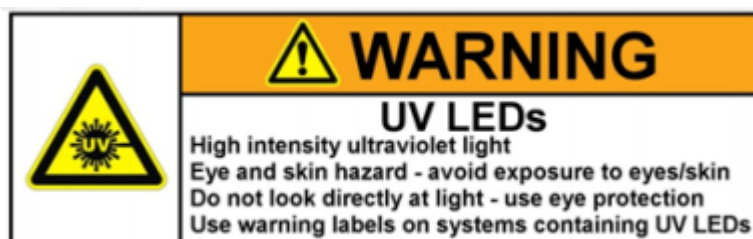
- The customer is advised to check if the LEDs are damage by ESD

When performing the characteristics inspection of the LEDs in the application.

Damage can be detected with a forward voltage measurement at low current($\leq 1\text{mA}$).

3. Eye Safety

- Please proceed with caution when handling any UVLEDs driven at low or high current. Since UV light can be harmful to eyes, do Not look directly into the UV light, even through an optical instrument.
- UV protective glasses are required to use in order to avoid damage by UV light in case of viewing UV light directly.



History of Revision

[illegible]