

High Power Chip Type UV LED

Technical Reference

NCCU001E

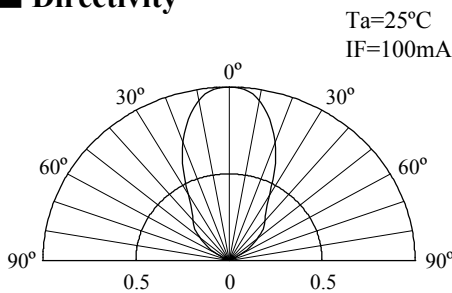
■ Characteristics

- High Power Chip Type UV LEDs
- Half Angle(2θ1/2) : 55°
- Can Type Package
- Surface Mount Chip LEDs

■ Applications

- Fluorescence Excitation
- Instruments
- Analyzer
- Medical Equipments

■ Directivity



■ Absolute Maximum Ratings

(Tc=25°C)

Item	Symbol	Absolute Maximum Rating	Unit
Forward Current	IF	700	mA
Pulse Forward Current *	IFP	1,000	mA
Power Dissipation	PD	3.2	W
Operating Temperature	Topr	-30~+85	°C
Storage Temperature	Tstg	-40~+100	°C

* Pulse width Max.10ms Duty ratio Max.1/10

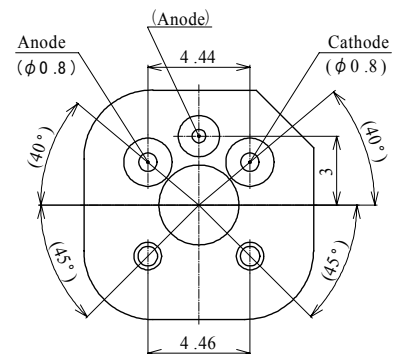
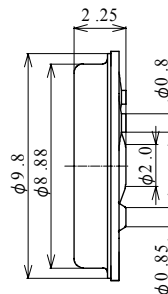
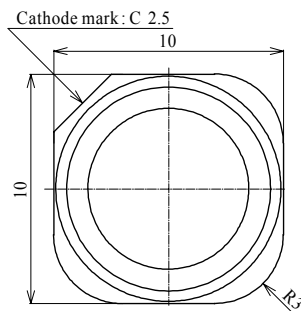
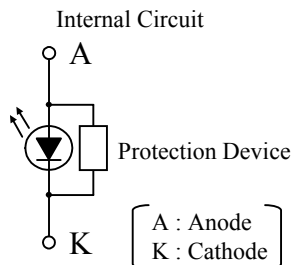
■ Electrical · Optical Characteristics

(Tc=25°C)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
DC Forward Voltage	VF	IF=500mA	-	4.0	(4.5)	V
Optical Power Output	Po	IF=500mA	-	85	-	mW
Peak Wave Length	λ P	IF=500mA	-	380	-	nm
Spectrum Half Width	Δλ	IF=500mA	-	15	-	nm

■ Outline Dimension

Tolerance : ± 0.2
Unit : mm



- The formal specifications must be exchanged and signed by both parties before large volume purchase begins.
- The appearance and specifications of the product may be modified for improvement without notice.

Caution



- The devices are UV light LEDs. The LED during operation radiates intense UV light, which precautions must be taken to prevent looking directly at the UV light with unaided eyes. Do not look directly into the UV light or look through the optical system. When there is a possibility to receive the reflection of light, protect by using the UV light protective glasses so that light should not catch one's eye directly.
- Put the caution label on the cardboard box.



NICHIA CORPORATION

□Headquarters
491 Oka Kaminaka-Cho Anan-Shi TOKUSHIMA 774-8601, JAPAN
Phone : (0884)22-2311 Telefax : (0884)21-0148

□Tokyo Office
13F Tamachi Center Building
34-7 Shiba 5-Chome Minato-Ku TOKYO 108-0014, JAPAN
Phone : (03)3456-3746 Telefax : (03)5440-7516

□Osaka Office
10F Nissei-Shin-Osaka Building
4-30 Miyahara 3-Chome Yodogawa-Ku OSAKA 532-0003, JAPAN
Phone : (06)6396-7708 Telefax : (06)6396-7399

LA-KSE2089B
< Cat.No.030925 >

■ NOTIFICATION

If you wish to purchase this product, please return a signed copy of this sheet.
No products will be sold unless a signed copy of this sheet is returned.

■ CAUTIONS

(1) Soldering Conditions

- The LEDs can be soldered in place using the reflow soldering method.
- Recommended soldering conditions.

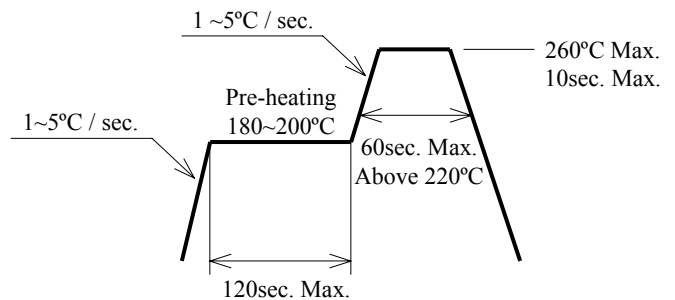
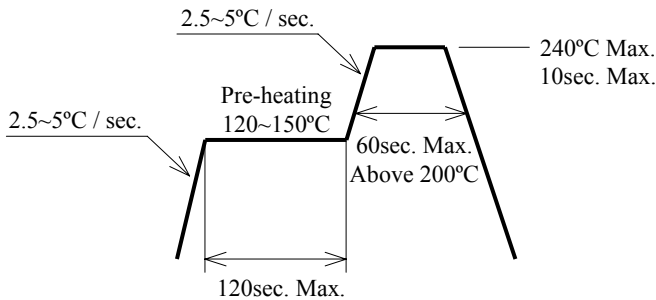
Reflow Soldering		
	Pb Solder	Pb-free Solder
Pre-Heat Temperature	120~150°C	180~200°C
Pre-Heat Time	120 seconds Max	120 seconds Max
Solder Temperature	240°C Max	260°C Max
Heat Time	10 seconds Max	10 seconds Max
Condition	Indicated in Temperature profile①	Indicated in Temperature profile②

* After reflow soldering rapid cooling should be avoided.
[Temperature-profile (Surface of circuit board)]

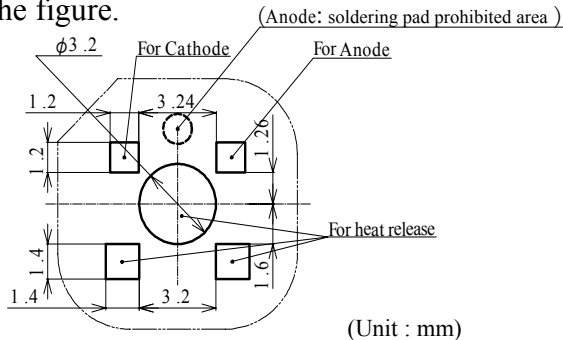
Use the following conditions shown in the figure.

<① : Pb Solder>

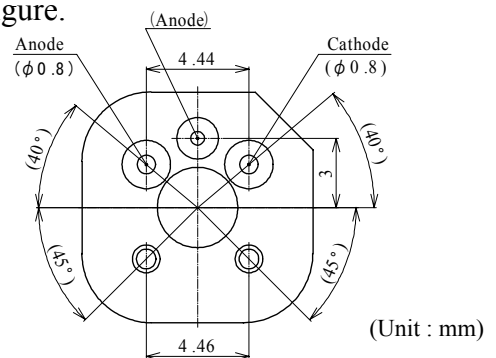
<② : Pb-free solder>



[Recommended soldering pad design]
Use the following conditions shown in the figure.



[Back side back view of the device]
Use the following conditions shown in the figure.



- It should not be done that making the soldering pads on “soldering pad prohibited area”.

(“For Anode”, “For Cathode”, and “For heart release” are separate soldering pads.)

- When soldering, do not stress the LEDs during heating.
- After soldering, do not bend the circuit board.

(2) Static Electricity

- Static electricity or surge voltage might damage LEDs.
It is recommended that a wrist band or an anti-electrostatic glove will be used when handling the LEDs.
- All devices, equipments and machinery must be properly grounded. It is recommended to take measures against surge voltage for the equipments that mount the LEDs.
- When inspecting the final products in which LEDs were assembled, it is recommended to check whether the assembled LEDs are damaged by static electricity or not. It is easy to find static-damaged LEDs by a light-on test or a VF test at a lower current (below 1mA is recommended).
- Damaged LEDs will show some unusual characteristics such as the forward voltage becomes lower, or the LEDs do not light at the low current. Criteria : (VF > 2.0V at IF=0.5mA)

(3) Heat Generation

- Thermal design of the end product is of paramount importance. Please consider the heat generation of the LEDs when making the system design. The coefficient of temperature increase per input electric power is affected by the thermal resistance of the circuit board and density of LED placement on the board, as well as other components. It is necessary to avoid intense heat generation and to operate within the maximum ratings given in this specification.
- The operating current should be decided after considering the maximum ambient temperature of LEDs.

(4) Others

- The LEDs are attached glass for air sealing and optical performance. If the glass faces are damaged by mechanical objects, there is possibility of losing its air sealing and optical performance.
- Nichia LED electrodes are comprised of silver plated copper alloy. The silver surface may be affected by environments which contain corrosive gases and so on. Please avoid conditions which may cause the LEDs to be corroded, tarnish or discolor. This corrosion or discoloration may cause difficulty during soldering operations. It is recommended that the LEDs will be used soon after opening the plastic bag.
- The LEDs light output is strong enough to injure human eyes. Precautions must be taken to prevent staring directly the LEDs and It is also dangerous to exposure to LED radiation.
- The LEDs described in this brochure are intended to be used for ordinary electronic equipment (such as office equipment, communications equipment, measurement instruments and household appliances). Inform Nichia's sales staff in advance if the application is required exceptional quality and reliability, particularly when the failure or malfunction of the LEDs may directly jeopardize life or health (such as for airplanes, aerospace, submersible repeaters, nuclear reactor control systems, automobiles, traffic control equipment, life support systems and safety devices)
- User shall not act a reverse engineering by disassembling or analysis of the LEDs without having prior written consent by Nichia When defective LEDs are found, the User shall inform Nichia directly before disassembling or analysis.

■ SIGNATURE

I, the undersigned, understand the potentially hazardous nature of the light emitted by Nichia UV LEDs. Because of the hazardous nature of this product, I will follow the precautions as listed in this specification during use of these LEDs. Furthermore, I, the undersigned, will not hold Nichia responsible for any damage or injury due to the use, misuse or mishandling of the UV LEDs.

Date

Authorized Signature

Company Name