

# HIGH POWER UV LED SPECIFICATION

Model: NS400M-CPLY

Nitride Semiconductors Co., Ltd.

1. Name: HIGH POWER UV LED
2. Model: NS400M-CPLY
3. Absolute maximum ratings (3°C/W heat sink in use)

Item	Symbol	Maximum rating	Unit
DC Forward current	$I_F$	350	mA
Power dissipation	$P_D$	8.75	W
Operating temperature	$T_{OPR}$	-25 to +80	°C
Storage temperature	$T_{STG}$	-30 to +100	°C
Soldering temperature	$T_{SOL}$	350°C within 3 seconds	

4. Optical and electrical characteristics (Ta=25°C)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward voltage	$V_F$	$I_F=300\text{mA}$	16.5	18.5	22.5	V
Peak wavelength*1	$\lambda_p$	$I_F=300\text{mA}$	395	-	405	nm
Full width at half maximum	$\Delta\lambda$	$I_F=300\text{mA}$	10	-	20	nm
Optical output power *2	$P_o$	$I_F=300\text{mA}$	-	1500	-	mW

\*1 Measurement error:  $\pm 2\text{nm}$

\*2 Measurement error: 10%

5. Standard optical and electrical characteristics  
To be hereinafter described.
6. Dimensional outline, circuit diagram and materials (This product complies with RoHS.)  
To be hereinafter described.

## 7. Cautions

- (1) The LEDs emit very strong UV radiation. Do not look directly at the LEDs. UV radiation can harm your eyes. To prevent inadequate exposure of UV radiation, wear UV protective glasses.
- (2) The LEDs are very sensitive to static and surge. Take a full protection against static and surge.
  - ① Use of Wristband, body grounding (via 1MΩ), conductive mat, conductive working uniform and shoes, containers.
  - ② The using equipment, appliance, work area should be connected to ground adequately. An ionizer should be installed where risk of static generation is high.
  - ③ Do not handle the LEDs by bare hands. It recommends using a finger stall etc.  
Do not touch the transparent resin top directly. The surface becomes dirty and it may affect the optical characteristic. Moreover, it may be a cause of non-light due to the deformation of the shape or the disconnection of chip bonding wire.
- (3) Please avoid soldering pads and hold the substrate when handling the LEDs with tweezers.
- (4) Do not stack the LEDs. It may be a cause of non-lighting due to flaw, lack, peeling or disconnection or any defect of characteristics by the blot of surface.
- (5) The powered LEDs generate heat. Heat dissipation should be considered in the application design to avoid the environmental conditions for operation in excess of the absolute maximum ratings.
- (6) The humidity environment of products should be maintained 40~70%RH in design and use whether keeping or operating.
- (7) Do not stress encapsulation resin because silicone resin is soft and must be damaged by any stress.
- (8) The LEDs are intended to be used for ordinary electronics equipment. Do not use the LEDs for the applications that may require a higher reliability and security and that the failure or malfunction of the LEDs may threat to life.
- (9) Do not reverse engineering by disassembling or analysis of the LEDs without our consent. If there's any defectives found, please contact our sales division.

## 8. Mounting instruction

### (1) Mounting precautions

- ① Please assemble the Product on the flat area to avoid the change in shape or damage of the Product.
- ② Do not pull the wire lead strongly because the solder moiety may be damaged.

### (2) Soldering conditions

- ① Do not solder the Product to the base which has discharge characteristics.
- ② It is easier to solder by hand if CPLY places on a temperature controlled hot plate. The recommended temperature of a hot plate is 150 ~ 200°.
- ③ Do not perform preliminary soldering in electrode.
- ④ Do not solder in electrode twice and revise soldering.
- ⑤ Do not touch the tip of soldering iron because resin portion will be damaged.

### (3) Mounting

- ① Use the thermally-conductive greases or Si sheet between the back surface of the Product and mounted area to help dissipate the heat from the back surface of the Product.

## 9. Warranty

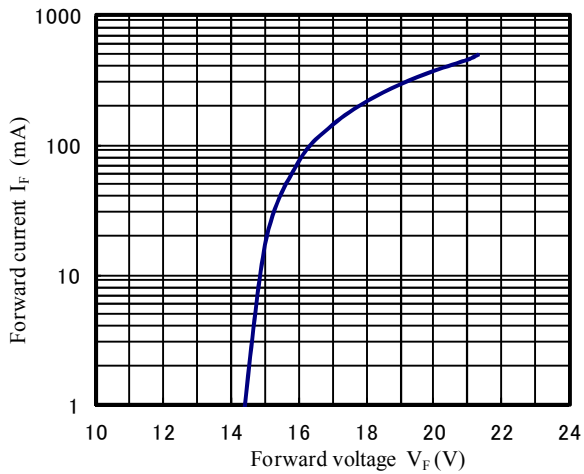
- (1) The warranty is valid for UV LED only before processing.
- (2) Perform an acceptance inspection on arrival of the goods. Return the defectives if any stipulating the disqualification and quantity.
- (3) Embedding the LEDs into the application and the verification of life and other qualities in practical use shall be executed by user.
- (4) Do not use the LEDs for the applications that require the higher reliability and security and that may endanger life and health by the breakdown and the malfunction. Seller shall not bear any responsibility or liability with respect to any claims and damages caused by user's usage of the LEDs without following our intended purpose or any written consent.
- (5) Seller shall not bear responsibility for any damages or defects caused by improper operation at the current in excess of the absolute maximum ratings that are not covered by warranty.

## 10. Miscellaneous

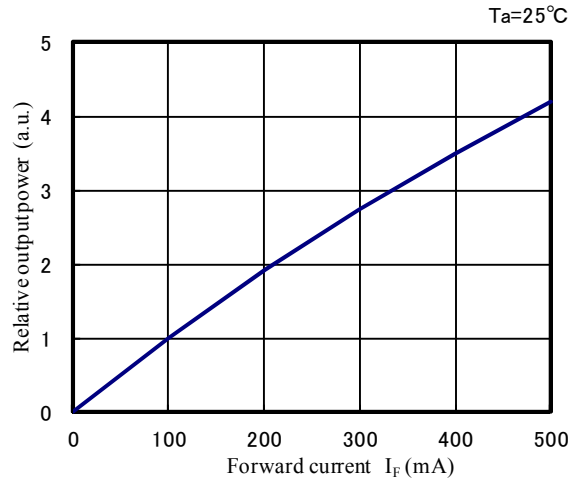
- (1) The surface of the LEDs may be changed in quality by exposing to the air contains corrosive gas. Be careful with the storage environment. The LEDs in the sealed bag can be stored for maximum 6 months. For the storage more than 6 months up to 1 year, the LEDs should be stored in the suitable environment of the stable temperature and humidity.
- (2) The technical information in this specification is not to guarantee the intellectual property rights of seller's nor a third party and not to grant the license.
- (3) The appearance and specifications are subject to change for improvement without prior notice.

■ Optical and electrical characteristics

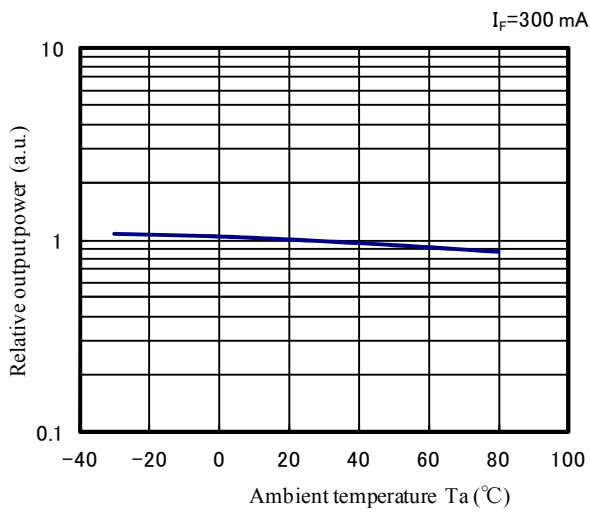
◆ Forward voltage vs. Forward current



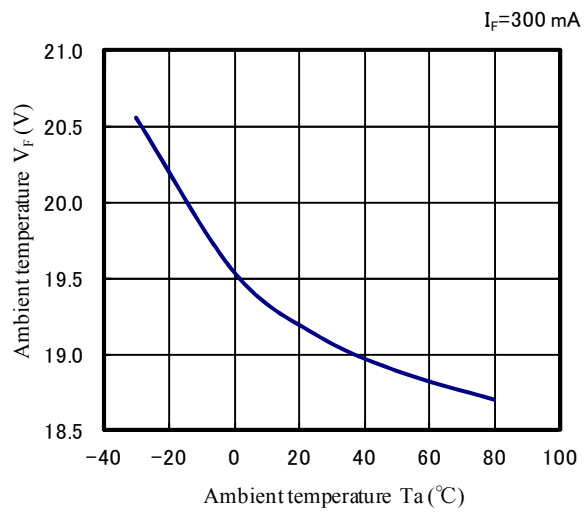
◆ Forward current vs. Relative output power



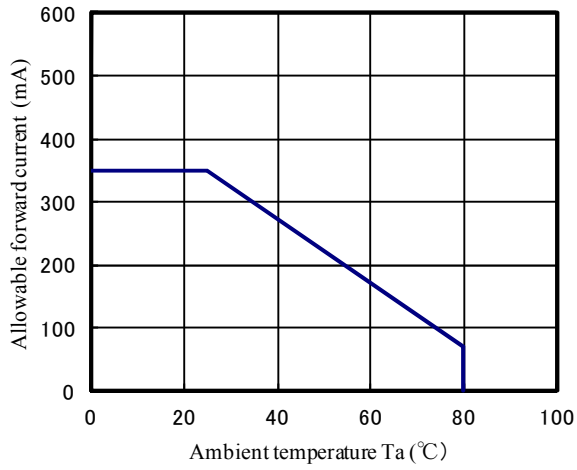
◆ Ambient temperature vs. Relative output power



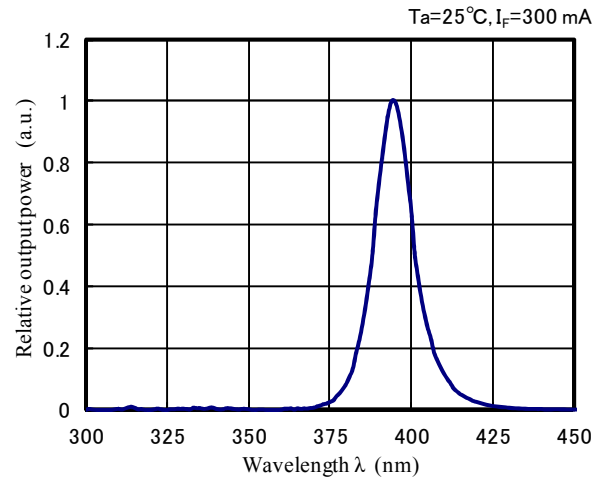
◆ Ambient temperature vs. Forward voltage



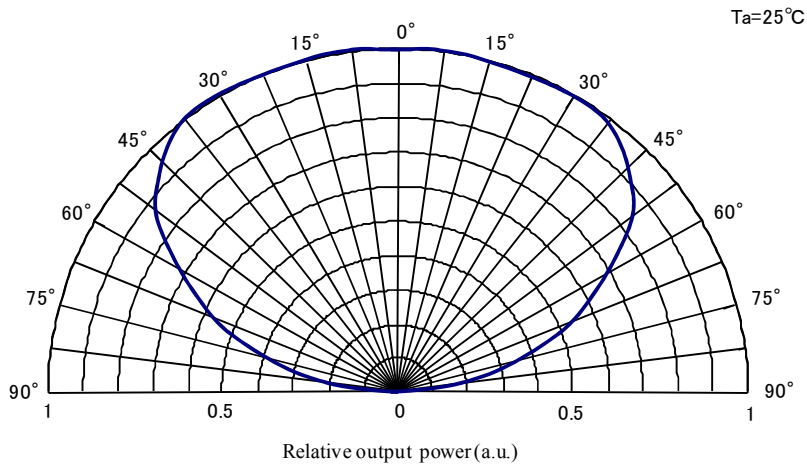
◆ Ambient temperature vs. Allowable forward current  
(3°C/W heat sink in use)



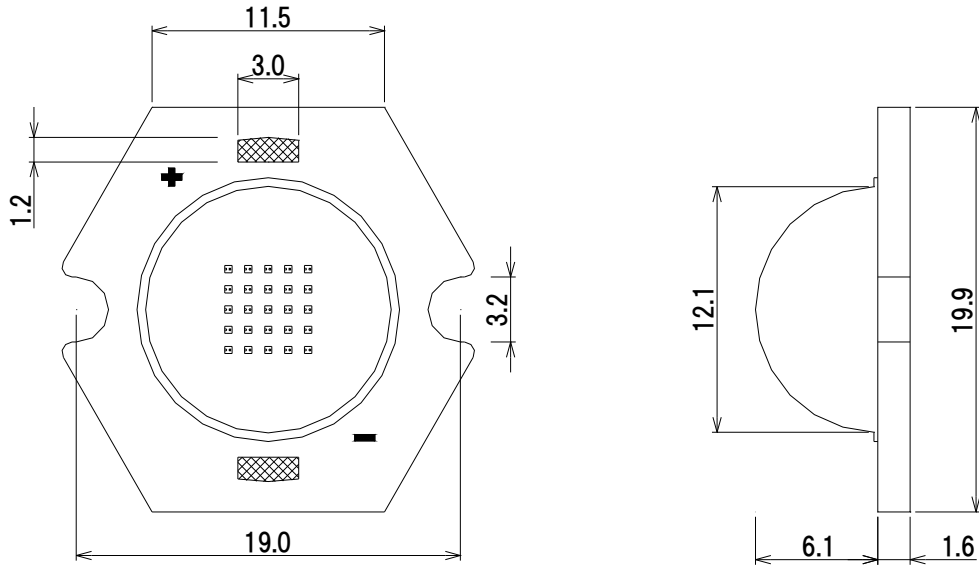
◆ Wavelength vs. Relative output power



◆ Directivity

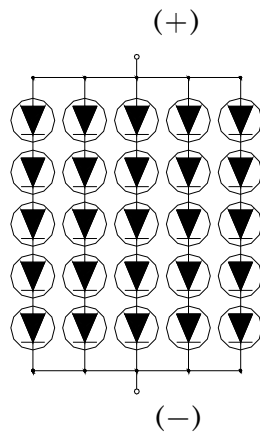


■ Dimensional outline drawing



Unit : mm

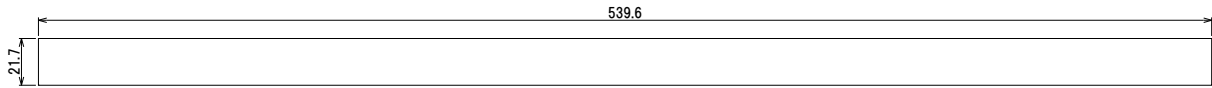
■ LED circuit diagram



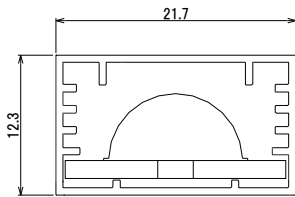
	Material
Electrode	Soldering coat
Sealing	Silicone resin
Package	Aluminum

### Packaging

The quantity in a dedicated tube is max. 25pcs.



Tube shape



Tube cross-section

Unit : mm



LEDs in the dedicated tube

The dedicated tube with silica gel for drying purposes is packed in a conductive bag and sealed.