

UV LED LAMP SPECIFICATION Model: NS355L-5RLO

Nitride Semiconductors Co., Ltd.

NS355L-5RLO 091009-NS



1. Name: UV LED LAMP

2. Model: NS355L-5RLO

3. Absolute maximum ratings (Ta=25)

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Item	Symbol	Maximum rating	Unit	
DC Forward current	IF	25	mA	
Pulse forward current*1	IFP	100	mA	
Power dissipation	PD	100	mW	
Operating temperature	TOPR	-30 to +80		
Storage temperature	TSTG	-30 to +85		
Soldering temperature	TSOL	260 within 10 second	nds	

*1 Conditions: Duty cycle 1/10, Pulse width 0.1msec

4. Optical and electrical characteristics (Ta=25)

Iter	n	Symbol	Condition	Min.	Тур.	Max.	Unit
Forward volt	age	VF	IF=20mA	3.2	3.6	4.2	V
Peak waveler	ngth*2	λp	IF=20mA	353	-	360	nm
Full width maximum	at half	λ	IF=20mA	10	-	20	nm
Optical output power *3	Rank 4	Ро	IF=20mA	0.8	-	1.2	mW

*2 Measurement error: ±2nm

*3 Measurement error: 10%

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



7. Reliability

(1) Test items and the results

Mechanical test results

Test items	Test conditions	Notes	Test results	
Test items	Test conditions	INOLES	LTPD	Damages
Terminal strength	Load 5N (Pulling)	For 10 seconds each	50%	0/5
(Pulling/Pushing)	Load 1N(Pushing)			
Terminal strength	Load 2.5N	One time	50%	0/5
(Bending)	0°to 90°to 0° to reverse direction			
	90°to 0°			
Dropping damage	Dropping from 1m high	Two times	20%	0/11

• Environmental test results

			Test results	
Test items	Test conditions	Notes	LTP	Damage
			D	S
Resistance to	Tsol= 260 ± 5 , 10 seconds	One time	10%	0/22
soldering heat	At 1.5mm from the lead base			
Resistance to	Tsol=350±5 , 3 seconds	One time	10%	0/22
soldering heat	At 1.5mm from the lead base			
Solderability	Tsol=235±5 , 5 seconds	One time	20%	0/11
	(using flux)	Wetting more than		
		95%		

• Life test results

Test items	Test conditions	Notes	Test results	
Test items	Test conditions	INOLES	LTPD	Damages
Steady state operating life	Ta=25±2 , IF=25mA	500 hours	10%	0/22
Operating life at high temperature	Ta=80±2 , IF=10mA	500 hours	10%	0/22
Storage at high temperature	Ta=85±2	500 hours	10%	0/22
Operating life at low temperature	Ta=-30±2 , IF=15mA	500 hours	10%	0/22
Operating life at high temperature and humidity	Ta=60±2 , RH=90±5%, IF=15mA	500 hours	10%	0/22
Storage at high temperature and humidity	Ta=60±2 , RH=90±5%	500 hours	10%	0/22

(2) Criteria for judging damages

Test items Symbols		Measurement	Judgment criteria		
Test items	Symbols	conditions	Min.	Max.	
Forward voltage	VF	IF=20mA	-	(U)×1.1	
Optical output power	Ро	IF=20mA	(L)×0.5	-	

*(U): Upper standard level, (L): Lower standard level



8. 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.
- (3) 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.
- (4) The leads should be bent at minimum 1.5mm away from the base of header. The LEDs should be soldered at minimum 1.5mm away from the base of header.
- (5) 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.
- (6) 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.

9. Warranty

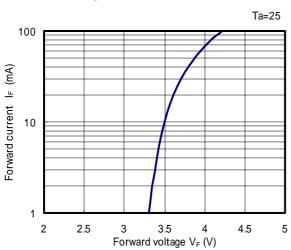
- (1) The warranty is valid for UV LED lamps only.
- (2) Perform an acceptance inspection on arrival of the goods. Return the defectives if any stipulating the disqualification and quantity.
- (3) Embedding the LEDs into the application and the verification of life and other qualities in practical use 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

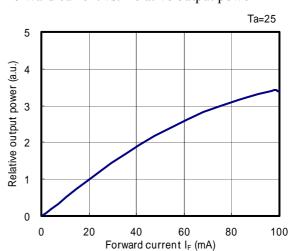
- (1) The leads are gold plated. They may be changed in quality by exposing to the air contains corrosive gas. Be careful with the storage environment. The LEDs in the sealed bag can be stored for maximum 6 months. For the storage more than 6 months up to 1 year, the LEDs should be stored in the suitable 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

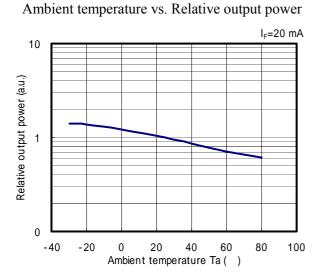


Forward voltage vs. Forward current



Forward current vs. Relative output power

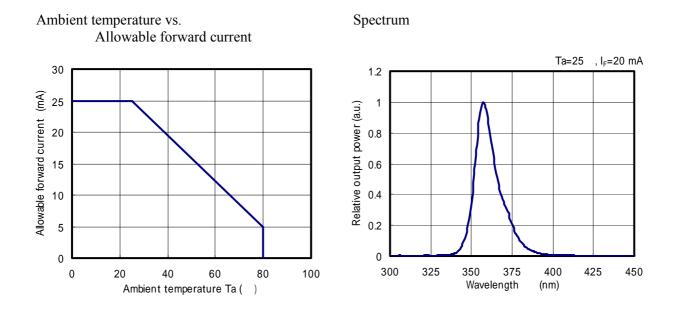
Ambient temperature vs. Forward voltage



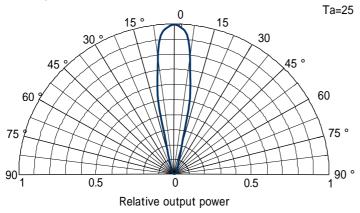
I_F=20 mA 4.2 4.0 Forward voltage VF (V) 3.8 3.6 3.4 3.2 -40 -20 0 40 60 80 100 20 Ambient temperature Ta ()

> NS355L-5RLO 091009-NS





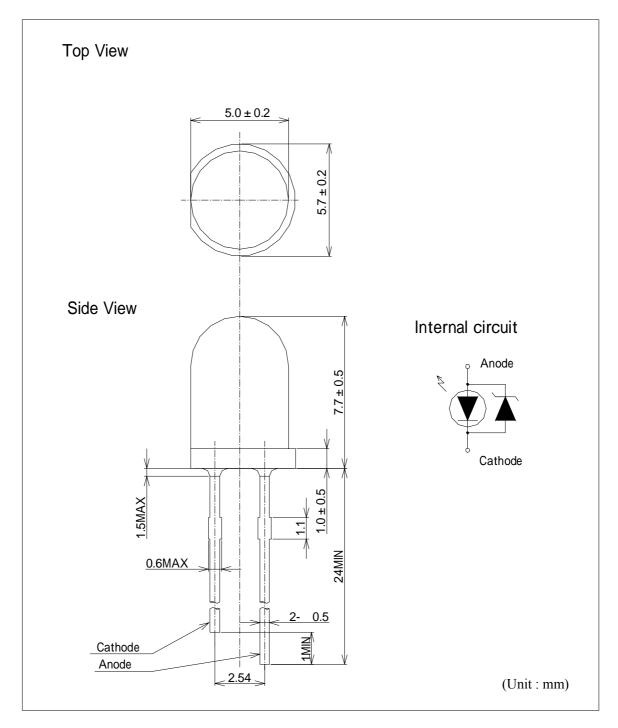
Directivity



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Dimensional outline drawing



*A zener diode is built in the protective circuit against static electricity.

Item	Material
Encapsulating Resin	Silicone resin
Lead Frame	Fe + Ag coating