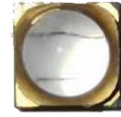


# N3535P31R005WGAS

High Power LED 395nm Emitter



## Key Features

- 1.Emitted Color:395nm.
- 2.Lens:Glass.
- 3.3.5\*3.5\*3.4mm standard package.
- 4.Suitable foe all SMT assembly methods.
- 5.Compatible with infrared and vapor phase reflow solder process.
- 6.Compatible with automatic placement equipment.
- 7.This product doesn't contain restriction substance, comply ROHS standard.
- 8.ALN of substrate.
- 9.Very low Thermal Resistance (2.89°C/W)
- 10.Very high Radiant Flux density.

## Typical Applications

Curing

Detection

## Description

### Absolute Maximum Ratings Ta=25°C

Parameter	Symbol	Value			Unit	Test condition
		Min.	Typ.	Max.		
Forward Voltage	Vf	3.2	3.5	3.8	V	If=1000mA
Peak Wavelength	$\lambda_p$	390	395	400	nm	If=1000mA
Reverse Current	Ir	-	-	10	$\mu$ A	If=1000mA
Viewing angle	2 $\theta$ 1/2	-	30	35	Deg	If=1000mA
Power density	MW	1800	2000	2300	MW	If=1000mA

Duty 1/10 pulse width 0.1ms.

Soldering time max 10sec

Please refer to IF-Ta diagram of curves for the temperature during application

## Characteristics

Item	Symbol	Value	Unit
Power Dissipation/DICE	PD	5	W
DC Forward Current/DICE	IF	1000	mA
Single Chip Pulsed Forward Current	IFP	1500	mA
Reverse Voltage	VR	5	V
Operating Temperature	Topr	-30~+80	°C
Storage Temperature	Tstg	-40~+100	°C
Soldering Temperature	Tsol	260for5sec $\Delta$	°C

<b>N</b>	<b>3535</b>	<b>P3</b>	<b>1R</b>	<b>005W</b>	<b>GA</b>	<b>S</b>
(1)	(2)	(3)	(4)	(5)	(6)	(7)

## Part Number System:

- N: High power ALN.**
- Package Type: 3535**
- LED Color: 395nm**
- Chip Angle:30°**
- 005W: Power 5W**
- GA: Quartz Glass and Single Chip.**
- S: SAN AN**



**ATTENTION**  
OBSERVE PRECAUTIONS  
FOR HANDLING  
ELECTROSTATIC  
DISCHARGE  
SENSITIVE  
DEVICES

## Forward Voltage Bins

Table1:

Bin Code	Minimum Forward Voltage @If=1000mA (V)	Maximum Forward Voltage @If=1000mA (V)
D	3.3	3.4
E	3.4	3.5
F	3.5	3.6

Notes For Table1:

- 1.LED Ritter maintains a tolerance of  $\pm 0.05V$  on forward voltage measurements.
- 2.For binning purposes, Forward Voltage for Dental Blue is binned with all three LED dies connected in series.

## Radiant Flux Bins

Table2:

Bin Code	Minimum Radiant Flux @If=1000mA (mW)	Maximum Radiant Flux @If=1000mA (mW)
20	1800	1900
21	1900	2000
22	2000	2100
23	2100	2200

Notes For Table1:

- 1.Radiant flux performance guaranteed within published operating conditions. LED Ritter maintains a tolerances of  $\pm 10\%$  on flux measurements.
- 2.Future products will have even higher levels of radiant flux performance. Contact LED Ritter Sales for updated information.

## Peak Wavelength Bins

Table3:

Bin Code	Minimum Peak Wavelength @If=1000mA (Nm)	Maximum Peak Wavelength @If=1000mA (Nm)
U12	390	395
U11	395	400

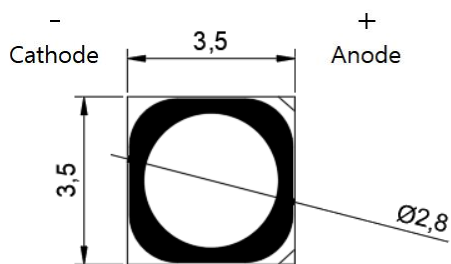
Notes For Table3:

1. LED Ritter maintains a tolerance of  $\pm 2.5nm$  on peak wavelength measurements.

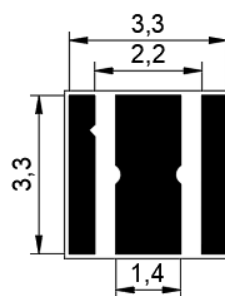
## Average Rdiant Flux Maintenance Projections

Base on long-term WHTOL testing, LED Ritter projects that the Series will deliver, on average, 70% Radiant Flux Maintenance at 1000 hours of operation at a forward current of 1000 mA per die. This projection is based on constant current operation with junction temperature maintained at or below 125°C.

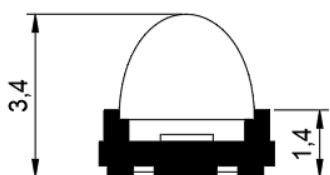
### Mechanical Dimensions(mm)



Top View

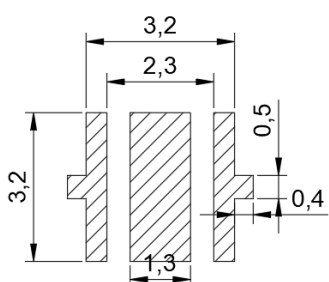


Bottom View

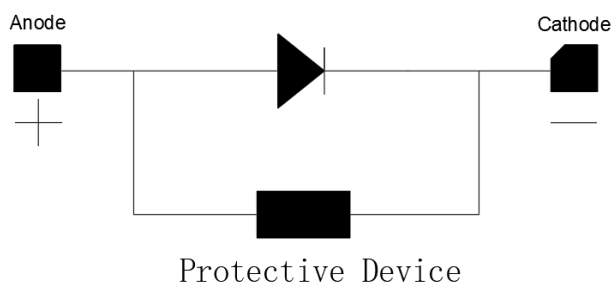


Side View

### Recommend Solder Pad (mm)



### Electrical Internal Circuit



### Recommended pad layout

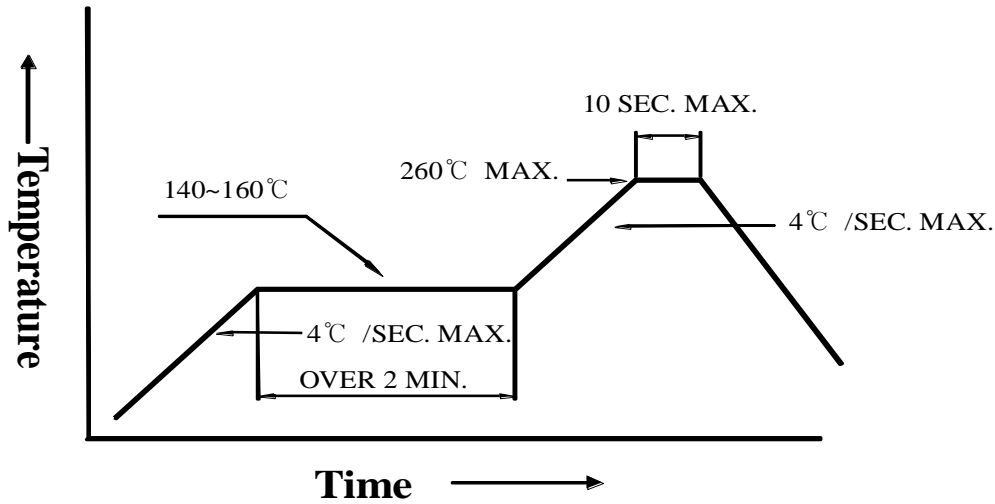
Notes for Figure 1

1. Unless otherwise noted, the tolerance is  $\pm 0.20$  mm.
2. Thermal contact, is electrically neutral.

## Reflow Soldering Profile

- Preheating: 140°C~160°C ±5°C, within 2 minutes.
- Operation heating : 260°C(Max)within 10seconds.(Max)
- Gradual Cooling (Avoid quenching).

Figure 2: Reflow soldering profile for lead free soldering.



## Typical Radiation Pattern

Fig.1 RADIATION DIAGRAM (A)

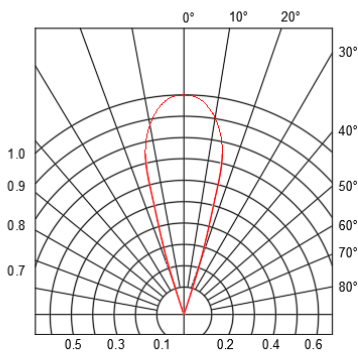


Fig.2 RADIATION DIAGRAM (B)

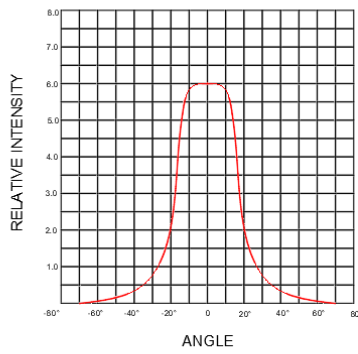


Fig.3 FORWARD CURRENT VS. FORWARD VOLTAGE

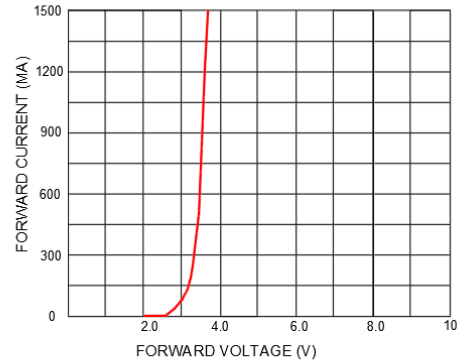


Fig.4 RELATIVE INTENSITY VS. WAVELENGTH

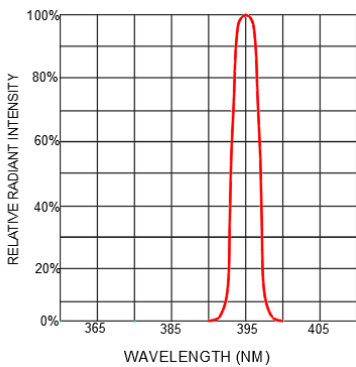


Fig.5 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

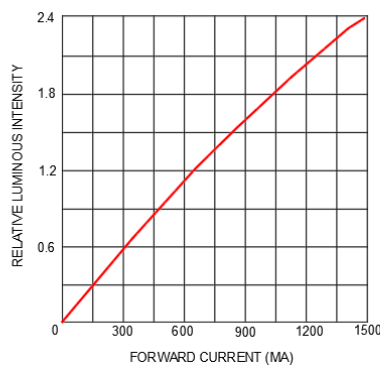
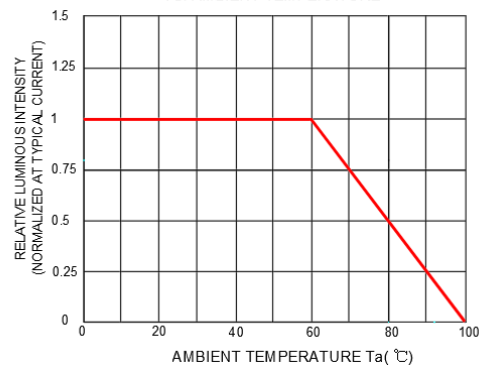


Fig.6 RELATIVE LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE



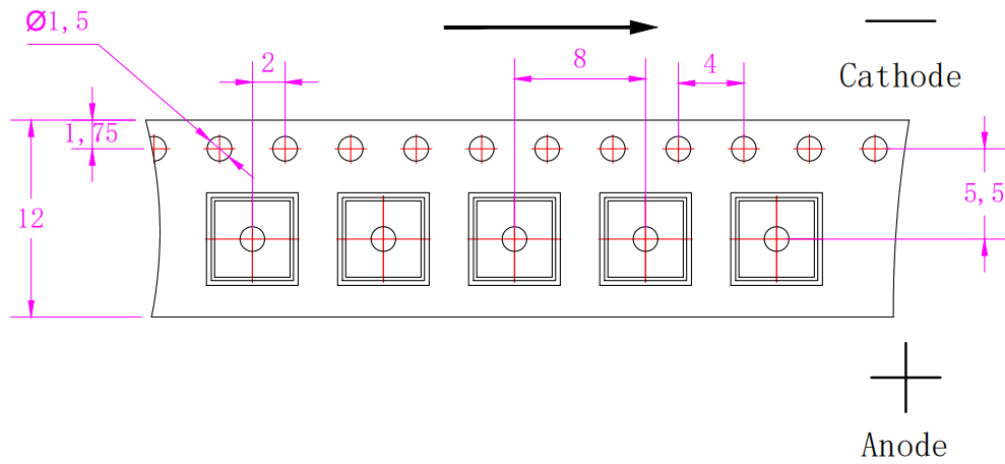
### Test items and results of reliability

Type	Test Item	Test Conditions	Note	Number of
				Damaged
Operation	Life Test	$T_a=25^{\circ}\text{C}$	1000 hrs	0/20
		$IF=1000[\text{mA}]$		
	High Humidity Heat Life Test	$85^{\circ}\text{C RH}=85\%$	500 hrs	0/20
		$IF=1000[\text{mA}]$		
	Low Temperature Life Test	$T_a=-20^{\circ}\text{C}$	1000 hrs	0/20
		$IF=1000[\text{mA}]$		
Environmental	Temperature Cycle	$0\text{B}-45^{\circ}\text{C}$ 30min	100 cycle	0/20
		$1\text{B}\uparrow\downarrow$ 20min		
		$105^{\circ}\text{C}$ 30min		
	Thermal Shock	$2\text{B}-10^{\circ}\text{C}$ 15min	100 cycle	0/20
		$3\text{B}\uparrow\downarrow$ 5sec		
		$100^{\circ}\text{C}$ 15min		
	High Temperature Storage	$T_a=100^{\circ}\text{C}$	1000 hrs	0/20
	Humidity Heat Storage	$T_a=85\%$	500 hrs	0/20
		$\text{RH}=85\%$		

### Judgment criteria of failure for the reliability

Measuring items	Symbol	Measuring conditions	Judgment criteria for failure
Forward voltage	$V_F(\text{V})$	$IF=1000\text{m}[\text{A}]$	Over $U^1 \times 1.2$
Reverse current	$I_R(\mu\text{A})$	$V_R=5\text{V}$	Over $U^1 \times 2$
Luminous intensity	$I_v(\text{mw})$	$IF=1000\text{m}[\text{A}]$	Below $S^1 \times 0.5$

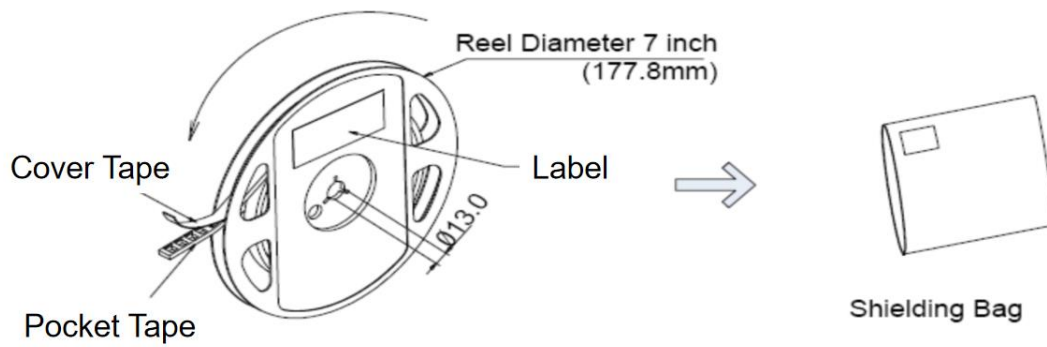
**Taping and packaging specifications(Units: mm)**



**Package Method(unit: mm)**

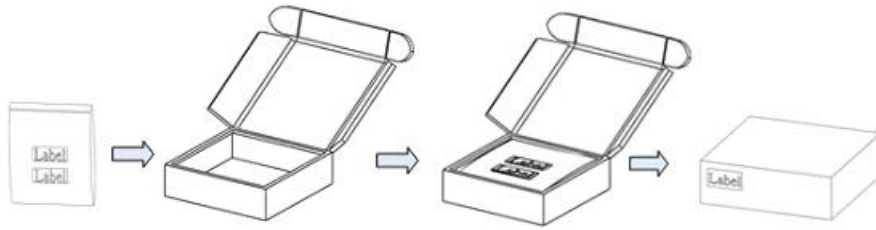
**Anti-Static Reel (7 inch)&Shielding Bag**

- Max 500pcs/reel
- Min 100pcs/reel



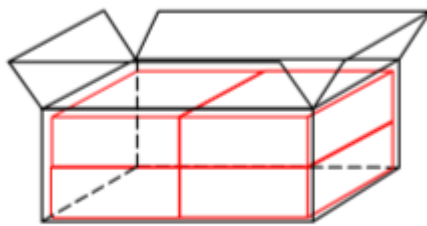
**Small Box**

- Max 7 bags in 1 inner box
- L \* W \* H=270\*255\*100mm



### Outer box(small)

- 4 inner boxes in one carton
- L \*W\*H=525\*285\*220mm



### Outer box(large)

- 8 inner boxes in one carton
- L \*W\*H=570\*280\*470mm

