

WCN-0402YG-0E**SPECIFICATION**

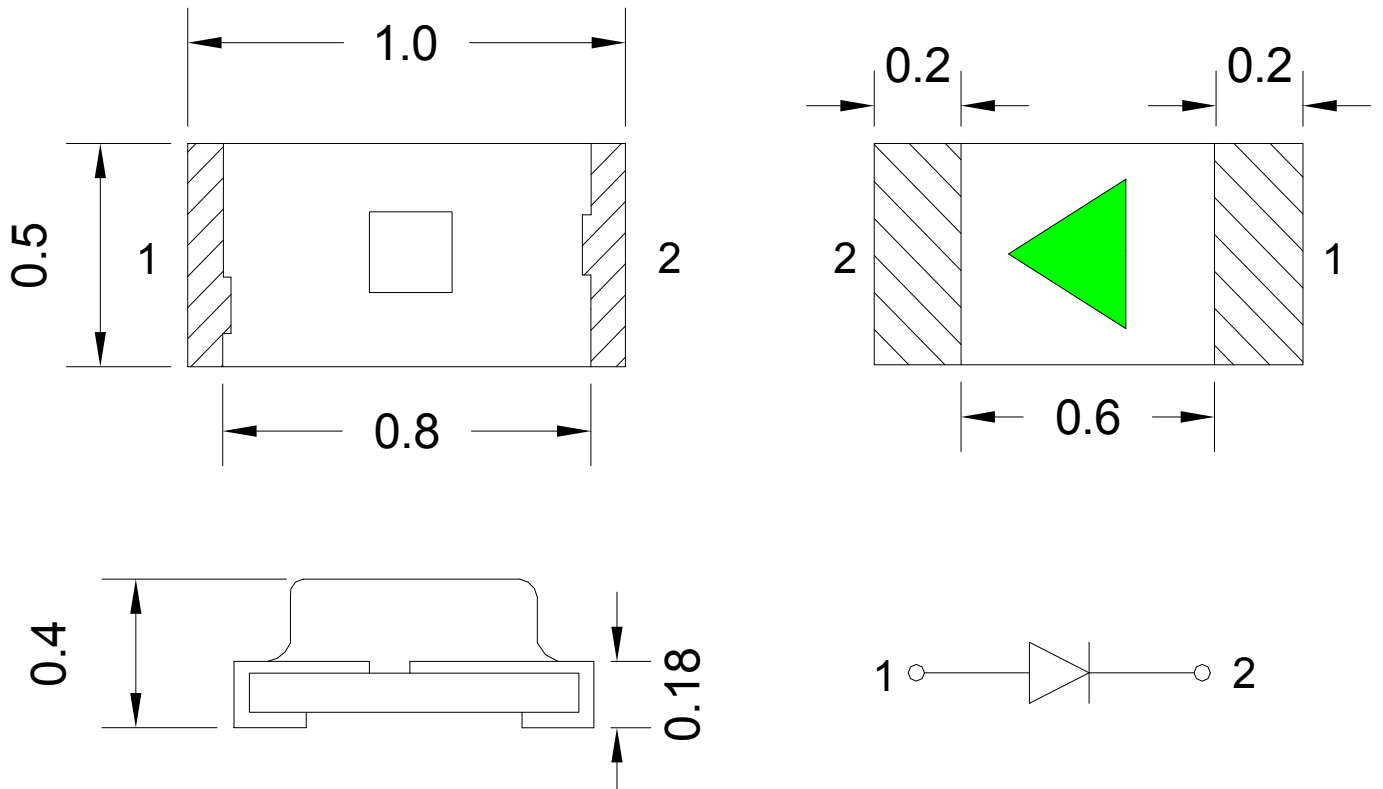
| WCN | | | CUSTOMER Confirmed |
|---------------------|------------------------|---|-----------------------|
| Prepared by | Checked by | Approved by | |
| LiuGuo 2018-11-9 | ZhangChun 2018-11-9 |  | |



Description

- ◆ Viewing angle: 120 deg
- ◆ The materials of the LED dice is AlGaInP
- ◆ 1.0mm×0.5mm×0.4mm
- ◆ RoHS compliant lead-free soldering compatible

Package Outline



NOTES:

1. All dimensions units are millimeters ;
2. All dimensions tolerances are ± 0.2 mm unless otherwise noted.

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Rating | Units |
|-------------------------|--------|-----------|-------|
| Power Dissipation | Pd | 48 | mW |
| Forward current | IF | 20 | mA |
| Peak Forward Current | IFP | 100 | mA |
| Reverse voltage | VR | 5 | V |
| Electrostatic Discharge | ESD | 1000 | V |
| Operating temperature | Topr | -30~+85 | °C |
| Storage temperature | Tstg | -40 ~+100 | °C |
| junction temperature | Tj | 95 | °C |

Electrical/Optical characteristics at Ta=25°C

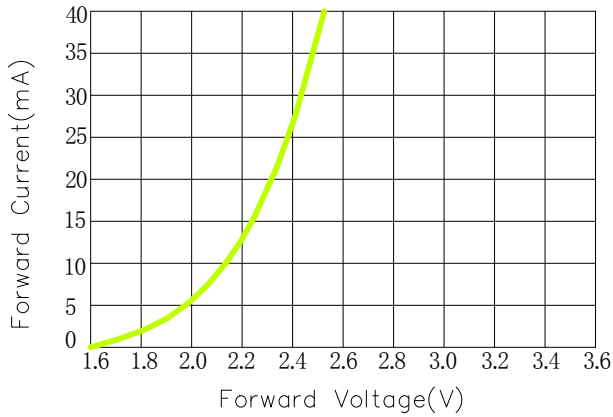
| Item | test condition | Symbol | Value | | | Unit |
|-------------------------|----------------|----------|-------|------|-------|------|
| | | | Min. | Typ. | Max. | |
| Forward voltage | If=20mA | Vf | 1.8 | -- | 2.0 | V |
| | | | 2.0 | -- | 2.2 | V |
| | | | 2.2 | -- | 2.4 | V |
| Luminous intensity | If=20mA | Iv | 15 | -- | 30 | mcd |
| | | | 30 | -- | 40 | mcd |
| Dominant wavelength | If=20mA | λd | 567.5 | -- | 570 | nm |
| | | | 570 | -- | 572.5 | nm |
| Viewing angle at 50% Iv | If=20mA | 2 θ1/2 | -- | 120 | -- | Deg |
| Reverse current | Vr=5V | Ir | -- | -- | 10 | μA |
| Thermal resistance | If=20mA | Rth(j-s) | -- | -- | 450 | °C/W |

NOTE:

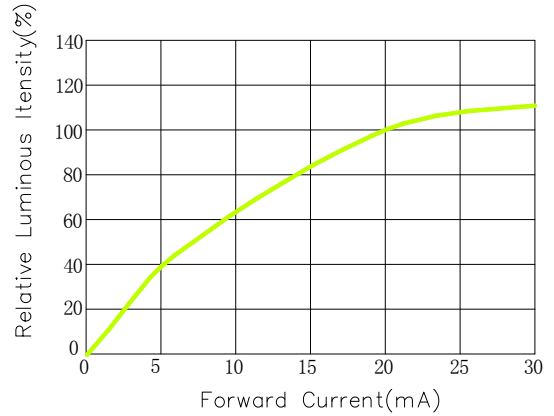
- 1.1/10 Duty cycle, 0.1ms pulse width.
2. The above forward voltage measurement allowance tolerance is 0.1V.
3. the above luminous intensity measurement allowance tolerance ±10%.

Optical characteristics curves

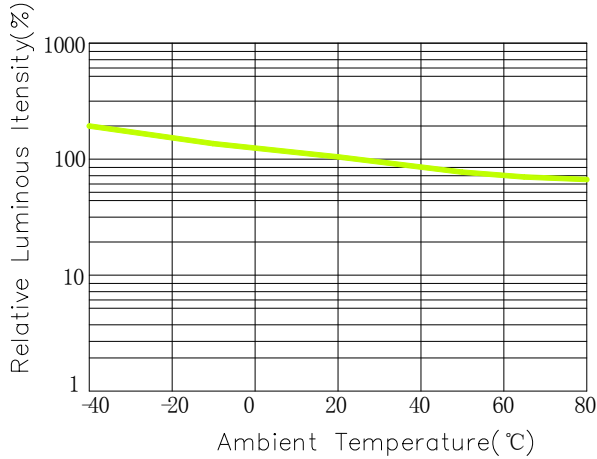
Forward Current VS Forward Voltage



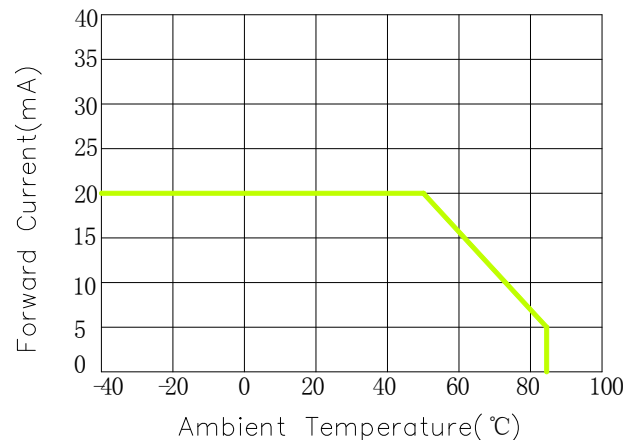
Relative Flux VS Forward Current



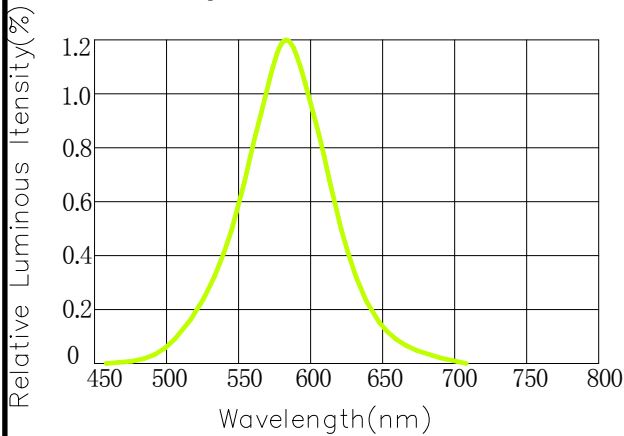
Relative Flux VS Ambient Temperature



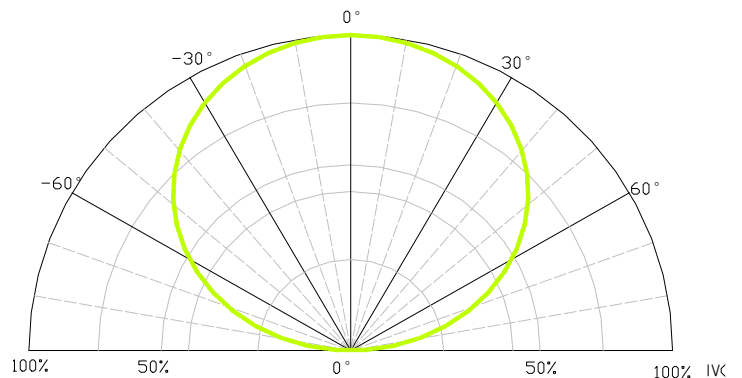
Forward Current VS Ambient Temperature



Relative Spectral Distribution

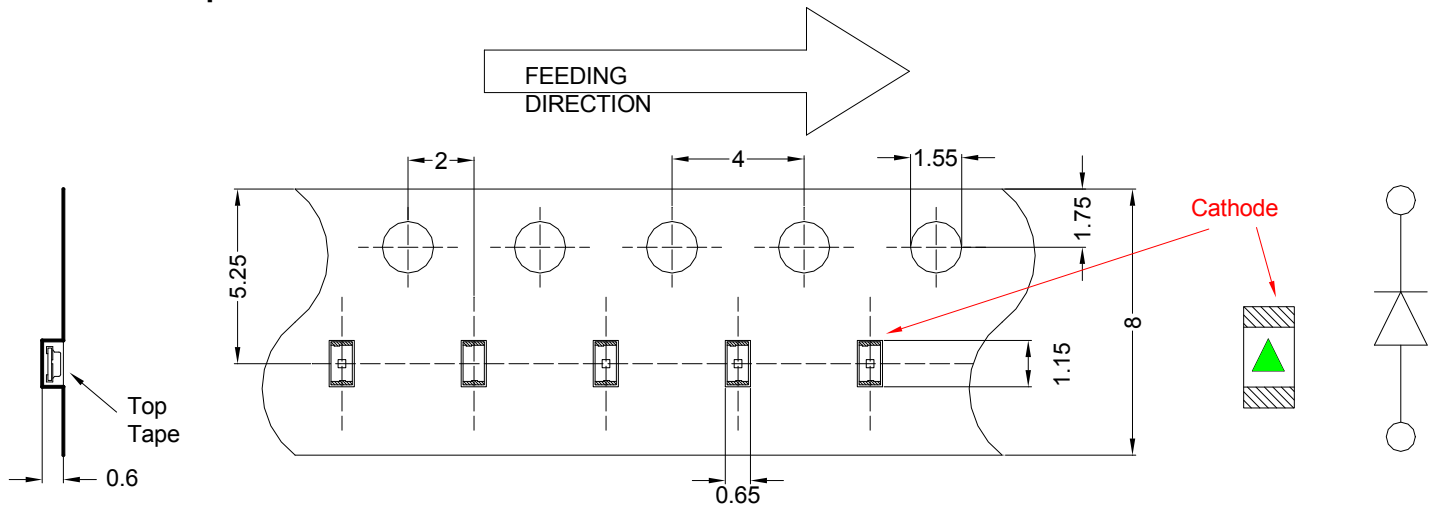


Typical Spectral Distribution

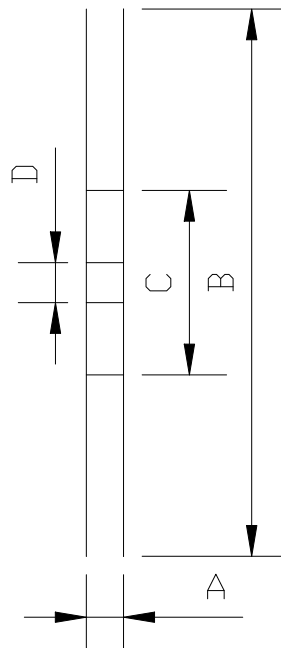
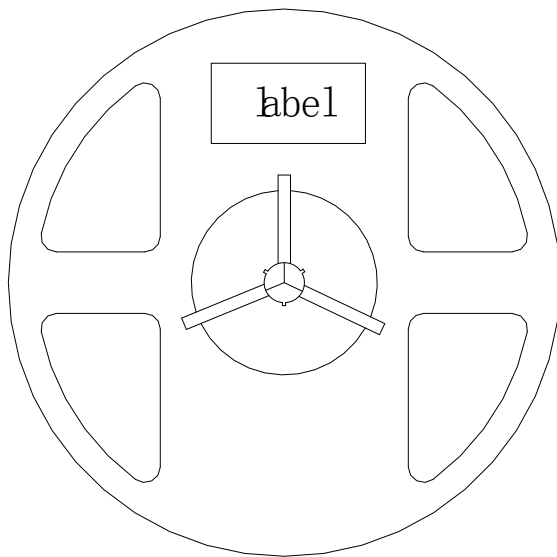


Packaging Specifications

Carrier Tape Dimensions



Reel Dimension



| | |
|---|------------|
| A | 8.0±0.1mm |
| B | 178±1mm |
| C | 60±1mm |
| D | 13.0±0.5mm |

NOTE:

1. The tolerances unless mentioned $\pm 0.1\text{mm}$. Unit : mm
2. 4,000 pcs/Reel.

Label Form Specification

WCN Opto Group Co., Ltd

P/N: ROHS



QTY: PCS IV:



LOT NO: WL:

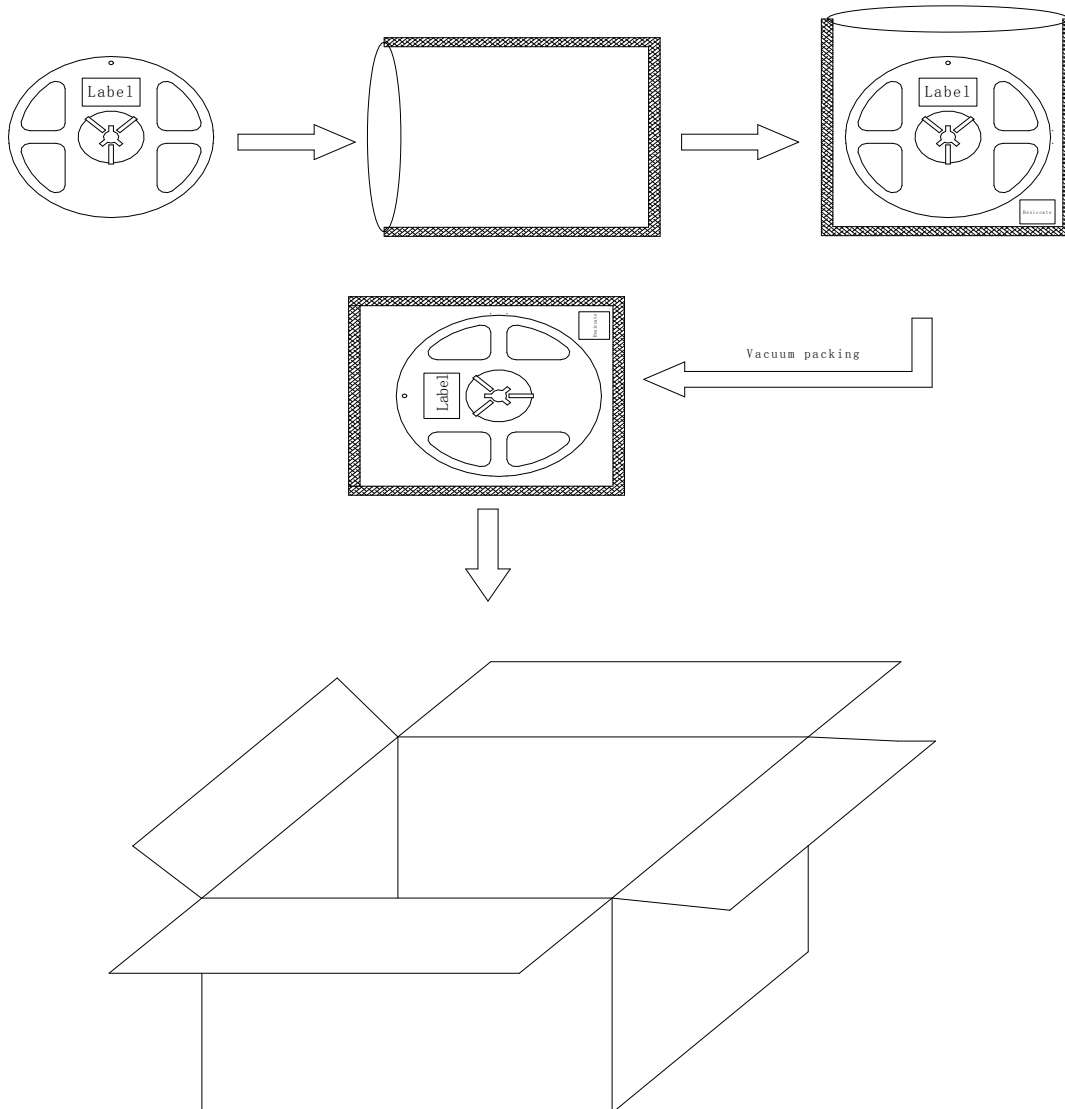


MADE IN CHINA

VF:

| | |
|--------|---------------------|
| P/N | Part Number |
| QTY | Packing Quantity |
| LOT NO | Made Date |
| IV | Luminous intensity |
| WL | Dominant wavelength |
| VF | Forward Voltage |

Moisture Resistant Packing Process



Test items and results of reliability

| Type | Test Item | Test Conditions | Note | Number of Damaged |
|------------------------|------------------------------|-----------------------------------|-----------|-------------------|
| Environmental Sequence | Reflow | Ta=260°C max T=10s | 2 times | 0/22 |
| | Temperature Cycle | -40°C 30min ↑↓ 100°C 30min | 100 cycle | 0/22 |
| | Thermal Shock | -40°C 15min ↑↓ 100°C 15min | 100 cycle | 0/22 |
| | High Humidity Heat Cycle | 30°C ⇔ 65°C 90%RH 24hrs/1cycle | 10 cycle | 0/22 |
| | High Temperature Storage | Ta=100°C | 1000 hrs | 0/22 |
| | Low Temperature Storage | Ta=-40°C | 1000 hrs | 0/22 |
| | Humidity Heat Storage | Ta=60°C RH=90% | 1000 hrs | 0/22 |
| | Low Temperature Storage | Ta=-30°C | 1000 hrs | 0/22 |
| Operation Sequence | Life Test | Ta=25°C IF=20mA | 1000 hrs | 0/22 |
| | High Humidity Heat Life Test | 60°C RH=90% IF=10mA | 500 hrs | 0/22 |
| | Low Temperature Life Test | Ta=-20°C IF=20mA | 1000 hrs | 0/22 |

Reflow Profile

■ Reflow Temp/Time



Notes:

1. We recommend the reflow temperature 245°C (±5°C). the maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

■ Soldering iron

Basic spec is $\leq 5\text{sec}$ when 260°C. If temperature is higher, time should be shorter (+10°C → -1sec). Power dissipation of iron should be smaller than 20W, and temperatures should be controllable. Surface temperature of the device should be under 230°C.

■ Rework

1. Customer must finish rework within 5 sec under 260°C.
2. The head of iron can not touch copper foil
3. Twin-head type is preferred.



■ Avoid rubbing or scraping the resin by any object, during high temperature, for example reflow solder etc.

Test circuit and handling precautions

■ Test circuit



■ Handling precautions

1. Over-current-proof

Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Storage

2.1 It is recommended to store the products in the following conditions:

Humidity: 60% R.H. Max.

Temperature : 5°C~30°C (41°F~86°F)

2.2 Shelf life in sealed bag: 12 month at < 5°C~30°C and < 30% R.H. After the package is

Opened, the products should be used within a week or they should be keeping to stored at ≤ 20 R.H. with zip-lock sealed.

3. Baking

It is recommended to baking before soldering when the pack is unsealed after 72hrs. The Conditions are as followings:

3.1 70 \pm 3°C x(12~24hrs) and < 5%RH, taped reel type

3.2 100 \pm 3°C x(45min~1hr), bulk type

3.3 130 \pm 3°C x(15~30min), bulk type