





Specification

Client Name: _____

Client P/N: _____

Wenrun P/N: LSRG30292/R

Date: _____

| Customer confirm | Approved by | Checked by | Issued by |
|------------------|---|--|-----------|
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◆ Features:

- Two chips are matched for uniform light output.
- Long life-solid state reliability.
- Low power consumption.
- High speed response.
- I.C. compatible.
- This product doesn't contain restriction Substance comply ROHS standard.

◆ Descriptions:

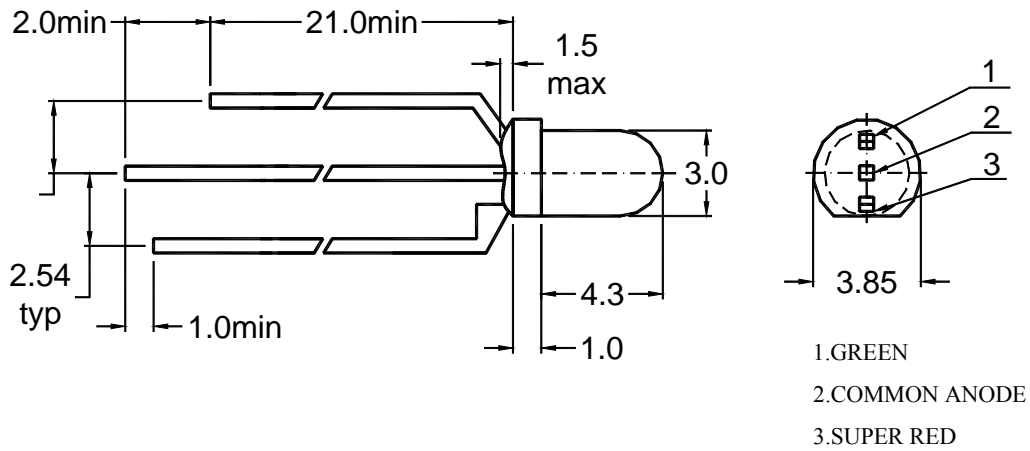
- The Super Red and Green light is emitted by diodes of GaAlAs and GaP respectively.
- Type of bipolar lamps are both White Diffused.

◆ Applications:

- TV set.
- Monitor.
- Telephone.
- Computer.

◆ Selection Guide:

| Part No. | Chip | | Lens Type |
|-------------|----------|----------------|----------------|
| | Material | Emitting Color | |
| LSRG30292/R | GaAlAs | Super Red | White Diffused |
| | GaP | Green | |

◆ Package Dimensions:

NOTES:

- 1、 All dimensions are in millimetres (mm).
- 2、 Tolerance is $\pm 0.25\text{mm}(0.01'')$ unless otherwise noted.

◆ Absolute Maximum Rating (Ta=25°C)

| Parameter | Symbol | Super Red | Green | Unit |
|-----------------------------|-----------|------------|-------|------|
| Power Dissipation | P_d | 60 | 60 | mW |
| Pulse Forward Current | I_{FP} | 80 | 80 | mA |
| DC Forward Current | I_F | 20 | 20 | mA |
| Reverse Voltage | V_R | 6 | 6 | V |
| Operating Temperature Range | T_{opr} | -40 ~ +85 | | °C |
| Storage Temperature Range | T_{stg} | -40 ~ +100 | | °C |
| Soldering Temperature | T_{sol} | 260 ± 5 | | °C |

Notes: Soldering time ≤ 5 seconds.

I_{FP} condition: pulse width $\leq 1\text{ms}$,duty cycle $\leq 1/10$.

T_{sol} condition : 3mm for the base of the epoxy bulb.

◆ Electrical Optical Characteristics (Ta=25°C)

| Parameter | Symbol | Super Red | | Green | | Unit | Test Condition |
|---------------------------|---------------------|-----------|------|-------|------|------|----------------------|
| | | Typ. | Max. | Typ. | Max. | | |
| Luminous Intensity | I _V | 40 | -- | 30 | -- | mcd | I _F =20mA |
| Forward Voltage | V _F | 1.9 | 2.3 | 2.2 | 2.5 | V | I _F =20mA |
| Reverse Current | I _R | -- | 50 | -- | 50 | uA | V _R =6V |
| Dominant Wavelength | λ _d | 645 | -- | 572 | -- | nm | I _F =20mA |
| Peak Emission Wavelength | λ _p | 655 | -- | 562 | -- | nm | I _F =20mA |
| Spectral Line Half Width | Δλ | 30 | -- | 30 | -- | nm | I _F =20mA |
| Recommond forward current | I _{F(rec)} | 20 | -- | 20 | -- | mA | -- |
| Viewing Angle | 2θ _{1/2} | 60 | | | | deg | I _F =20mA |

- Notes: 1. Tolerance of Luminous Intensity ±10%
2. Tolerance of Dominant Wavelength ±2nm
3. Tolerance of Forward voltage ±0.05V
4. Luminous Intensity is measured by WENRUN's equipment on bare chips

◆ Reliability
(1) Test Items and Conditions

| NO | Test Item | Test Conditions | Sample | Ac/Re |
|----|--|--|--------|-------|
| 1 | Temperature Cycle | -40±5℃→25±5℃→100±5℃→25±5℃ (30min, 5min, 30min, 5min) 100 Cycles | 20 | 0/1 |
| 2 | High Temperature Storage | Ta: 100±5℃ Test time=1000HRS(-24HRS,+72HRS) | 20 | 0/1 |
| 3 | High Temperature And High Humidity Working | Ta: 85±5℃, RH:85±5%, I _F =20mA Test time=500HRS(-24HRS,+72HRS) | 20 | 0/1 |
| 4 | Low Temperature Storage | Ta: -40±5℃ Test time=1000HRS(-24HRS,+72HRS) | 20 | 0/1 |
| 5 | Operating Life Test | Connect with a power I _F =20mA Ta=Under room temperature Test time=1000HRS(-24HRS,+72HRS) | 20 | 0/1 |
| 6 | Solder Resistance | T.Sol=260±5℃ one time Dwell Time=10±1Secs | 20 | 0/1 |
| 7 | Thermal Shock | -40±5℃→100±5℃ (15min, 15min) 100 Cycles | 20 | 0/1 |

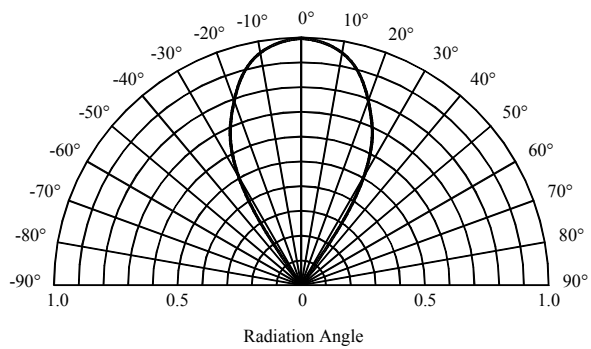
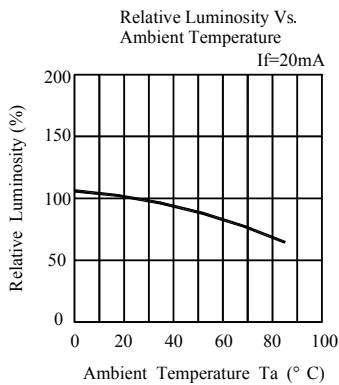
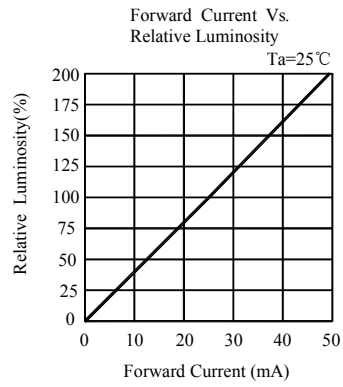
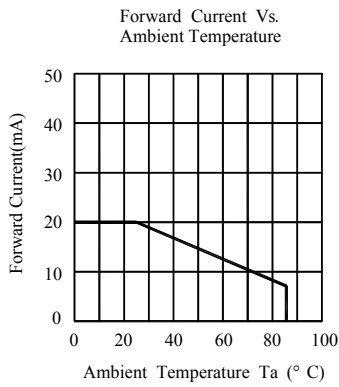
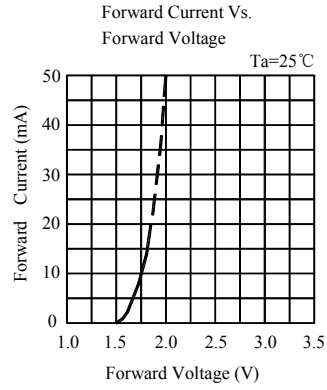
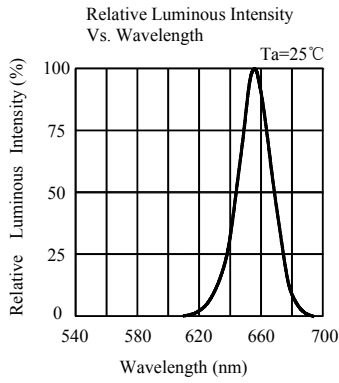
(2)Criteria of judging the damage

| Item | Symbol | Test condition | Criteria for judgement | |
|--------------------|----------------|-----------------------|------------------------|-----------|
| | | | Min. | Max. |
| Forward voltage | V _F | I _F =20 mA | / | U.S.L*1.1 |
| Reverse current | I _R | V _R =5V | / | 15uA |
| Luminous intensity | I _V | I _F =20 mA | L.S.L*0.7 | / |
| Wave length | λ D/ λ P | I _F =20 mA | / | U.S.L±2nm |
| Appearance | / | View check | No mechanical damage | |

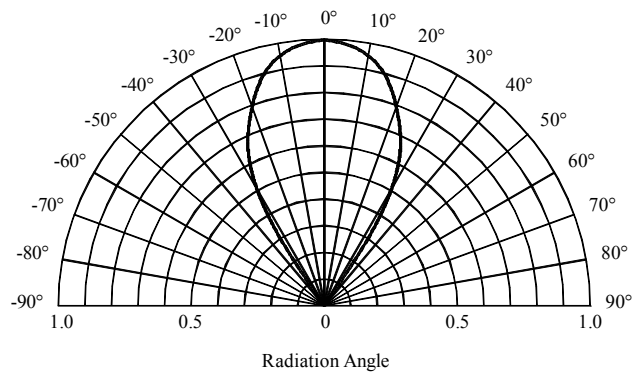
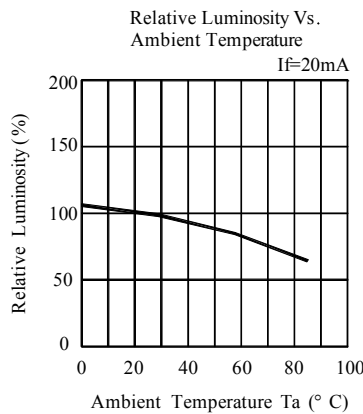
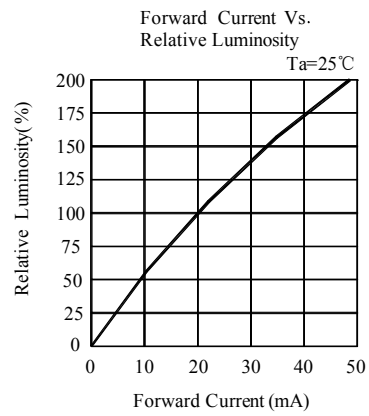
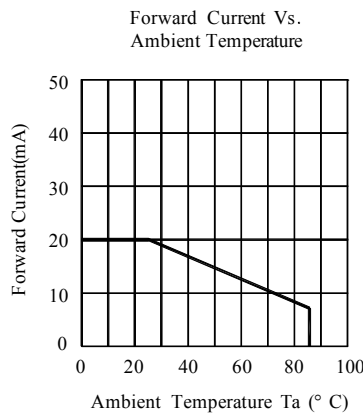
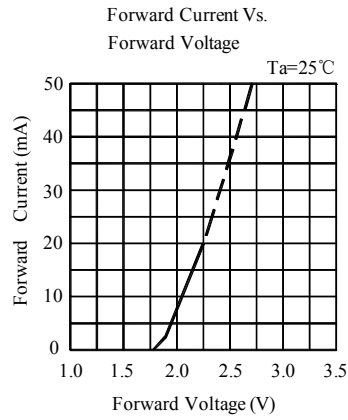
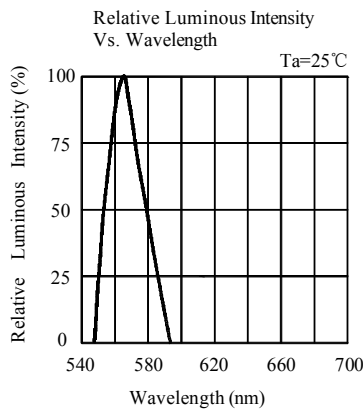
* U.S.L: Upper standard level

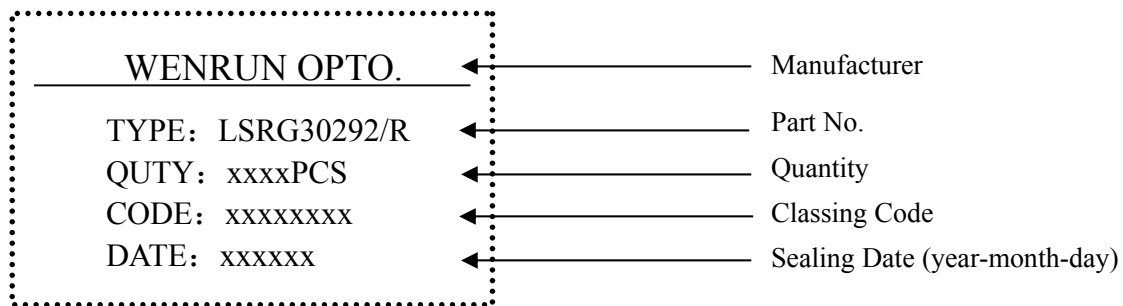
L.S.L: Lower standard level

◆ **Typical Electro-Optical Characteristics Curves: (SR)**



◆ **Typical Electro-Optical Characteristics Curves: (G)**



◆ Label Form Specification**◆ Precautions In Use****A、Soldering Conditions**

- 1、 When soldering, leave the minimum clearance between the bottom of the resin and the soldering point.
- 2、 Maximum allowable soldering conditions are.
Solder dipping: 260 °C max., 5 seconds max., one time.
Soldering iron: 350 °C max., 5 seconds max., one time.
- 3、 Contact between molten solder and the resin must be avoided.
- 4、 In soldering, do not put any stress on the lead frame, particularly when heated.

B、Lead frame Forming and Use

- 1、 When forming leads ,the leads should be bent at a point at least 3mm from the base of epoxy. Lead forming should be done before soldering.
- 2、 Do not apply any bending stress to the base of the lead. The stress to the base may damage the LEDs characteristics.
- 3、 When mounting the LEDs onto a printed circuit board ,the holes on the circuit board should be exactly aligned with the leads of the LEDs.
- 4、 Please avoid conditions which may cause the LED to corrode, tarnish or discolor. This corrosion or discoloration may cause difficulty during soldering operations. It is recommended that the LEDs be used as soon as possible.
- 5、 Please avoid rapid transitions in ambient temperature, especially, in high humidity environments.

C、Storage

- 1、 The LEDs should be stored at 30°C or less and 70%RH or less after being shipped from Wenrun and the storage life limits are 3 months . If the LEDs are stored for 3 months or more, they can be stored for a year in a sealed container with a nitrogen atmosphere and moisture absorbent material.
- 2、 Please avoid rapid transitions in ambient temperature, especially , in high humidity environments where condensation can occur.

D、Cleaning

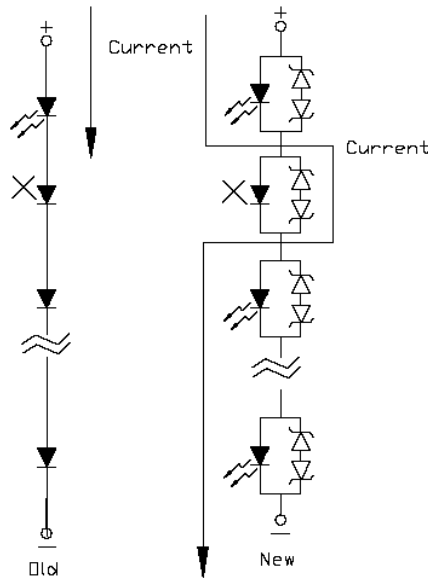
- 1、 When necessary, cheaning should occur only with isopropyl alcohol at room temperature for a duration of no more than one minute . Dry at room temperature before use..

2、 Do not clean the LEDs by the ultrasonic. When it is absolutely necessary , the influence of ultrasonic cleaning on the LEDs depends on factors such as ultrasonic power and the assembled condition. Ultrasonic cleaning shall be pre-qualified to ensure this will not cause damage to the LED.

E、 Circuit Protection

1、 Below the zener reference voltage V_Z , all the current flows through LED and as the voltage rises to V_Z , the zener diode “breakdown .” If the voltage tries to rise above V_Z current flows through the zener branch to keep the voltage at exactly V_Z .

2、 When the LED is connected using serial circuit, if either piece of LED is no light up but current can not flow through causing others to light down.. In new design, the LED is parallel with zener diode, if either piece of LED is no light up but current can flow through causing others to light up



F、 Heat Management

1、 Heat management of LEDs must be taken into consideration during the design stage of LED application. The current should be de-rated appropriately by referring to the de-rating curve found in each product specification .

2、 The temperature surrounding the LED in the application should be controlled. Please refer to the data sheet de-rating curve.

◆ Notes:

1、 Above specification may be changed without notice. We will reserve authority on material change for above specification.

2、 When using this product, please observe the absolute maximum ratings and the instructions for the specification sheets. We assume no responsibility for any damage resulting from use of the product which does not comply with the instructions included in the specification sheets.