



TOYO LED ELECTRONICS LIMITED

Room 1610, Hong Kong Plaza, 188 Connaught Road West, Hong Kong.
Tel : (852) 2540 7288 Fax : (852) 2517 1797
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P/N: TY-YSV1204URBL1(1.50)

1204 Package 3.2*1.0mm Surface Mount LEDs Series

✧ Features:

- 3.2mm x 1.0mm SMT LED, 1.50mm thickness
- Mono-color type
- Soldering methods :All SMT assembly methods
- Comply ROHS standard

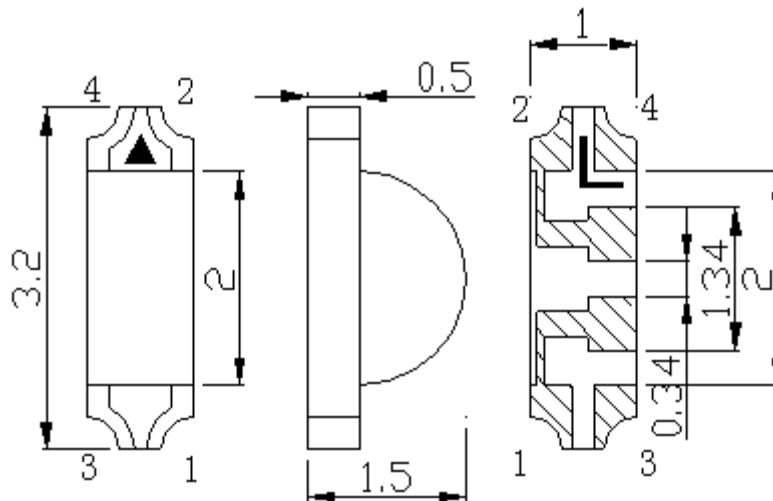
✧ Description

The Red source color devices are made with **AlGaInP** on sapphire Light Emitting Diode.
The Blue source color devices are made with **InGaN** on sapphire Light Emitting Diode.

✧ Application

- Optical indicator
- Indicator and backlighting in telephone and fax
- Flat backlight for LCD, switch and symbol
- Light pipe application
- General use

✧ Package Dimensions



NOTES :

1. All dimensions are in millimeter[unit];
2. Tolerance is±0.1mm(0.004") unless other specified;
3. Specifications are subject to change without notice.



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| Part No. | Emitted Color | Lens Color | Chip Material |
|-----------------------|---------------|-------------|---------------|
| TY-YSV1204URBL1(1.50) | Red | Water clear | AlGaInP |
| | Blue | Water clear | InGaN |

✧ Absolute Maximum Ratings(Ta=25)

| Item | Symbol | Maximum | | Unit |
|---|-------------------|-----------|-----|------|
| | | UR | BL | |
| Power Dissipation | PD | 75 | 135 | mW |
| Continuous Forward Current | I _{Fmax} | 30 | 30 | mA |
| Peak Forward Current(1/10 Duty Cycle 0.1ms Pulse Width) | I _{FP} | 80 | 140 | mA |
| Reverse Voltage | V _R | 5 | 5 | V |
| Operating Temperature Range | T _{opr} | -40 to+85 | | |
| Storage Temperature Range | T _{stg} | -40 to+85 | | |

✧ Electrical/Optical Characteristics(Ta=25)

| Item | Symbol | Condition | Min. | | Typ. | | Max | | Unit |
|---------------------|-------------------|----------------------|------|-----|------|-----|-----|-----|------|
| | | | UR | BL | UR | BL | UR | BL | |
| Forward Voltage | V _F | I _F =20mA | -- | -- | 1.9 | 3.0 | 2.1 | 3.4 | V |
| Luminous Intensity | I _v | I _F =20mA | 100 | 100 | 200 | 150 | -- | -- | mcd |
| Dominate Wavelength | λ _d | I _F =20mA | -- | -- | 620 | 466 | 625 | 468 | nm |
| Viewing Angle | 2θ _{1/2} | I _F =20mA | --- | --- | 120 | 120 | --- | --- | Deg |
| Reverse Current | I _R | V _R =5V | --- | --- | --- | --- | 10 | 10 | uA |



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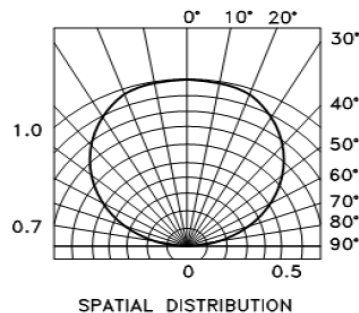
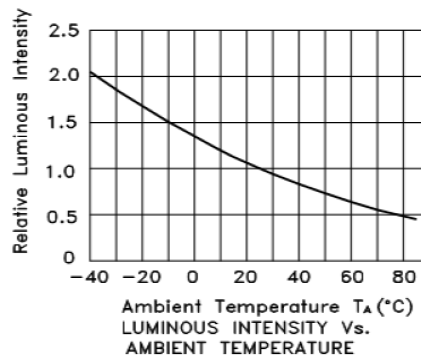
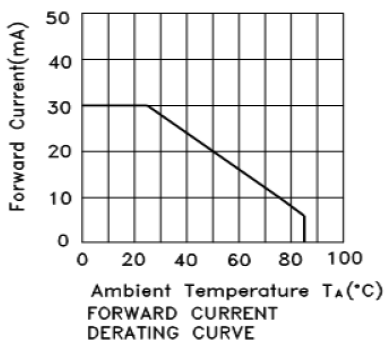
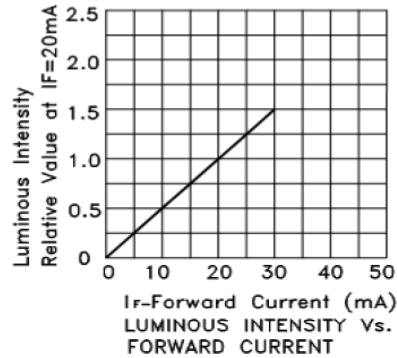
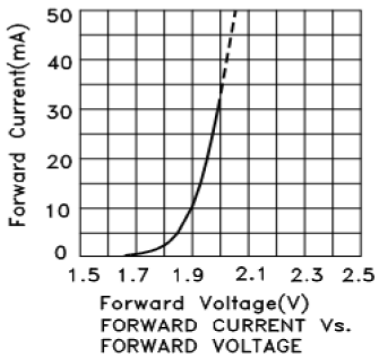
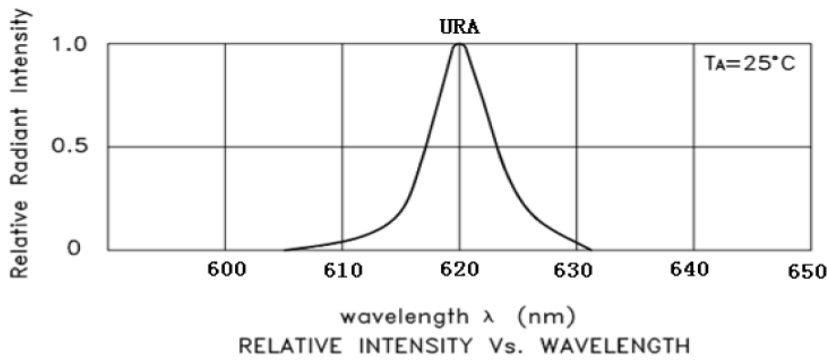
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◇ Typical Electro-Optical Characteristics Curves (Red)





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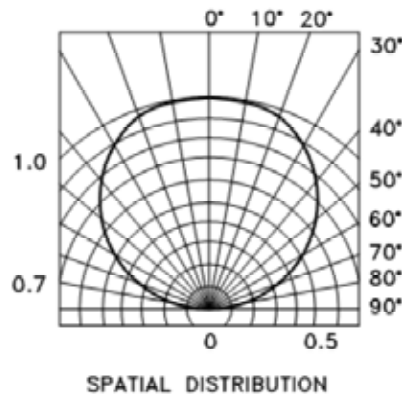
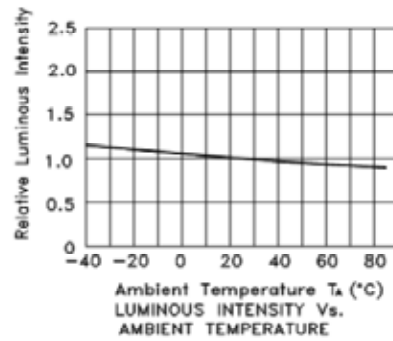
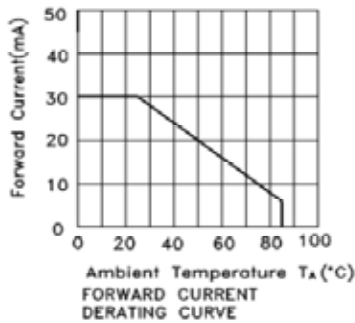
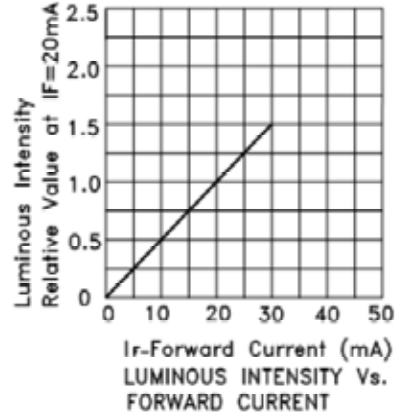
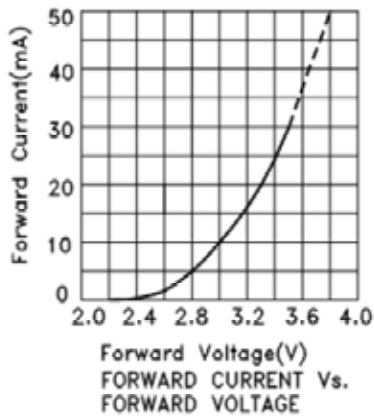
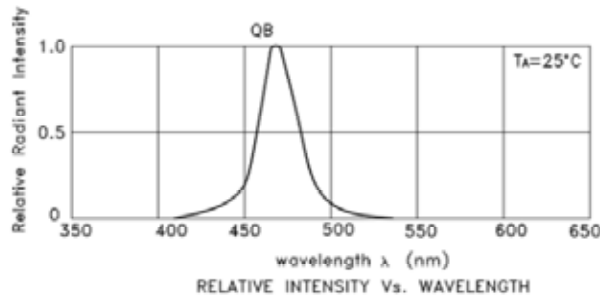
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◇ Typical Electro-Optical Characteristics Curves (Blue)





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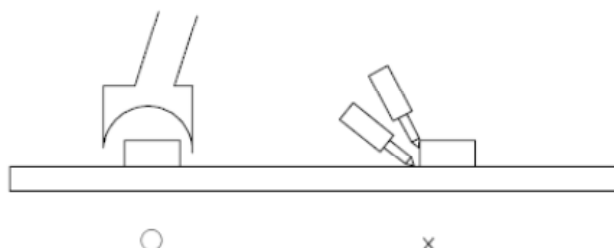
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◇ Reliability Test Items And Conditions

| NO. | Item | Test Condition | Test Hr/cycle/time | Sample Q'ty | Ac/Re |
|-----|--------------------------|--|--------------------|-------------|-------|
| 1 | Reflow | TEMP:260±5 ; Min.5Sec | 6 min | 22pcs | 0/1 |
| 2 | Temperature Cycle | H:+100 15mins To(5mins) L:-40 15mins | 300 cycles | 22pcs | 0/1 |
| 3 | Thermal Shock | H:+100 15mins To(5mins) L:-40 15mins | 300 cycles | 22pcs | 0/1 |
| 4 | High Temperature Storage | TEMP:+260 | 1000hrs | 22pcs | 0/1 |
| 5 | Low Temperature Storage | TEMP:-40 | 1000hrs | 22pcs | 0/1 |
| 6 | DC Operating Life | IF=20MA | 1000hrs | 22pcs | 0/1 |
| 7 | High Temperature | 85 | 1000hrs | 22pcs | 0/1 |
| 8 | High Humidity | 85%R.H. | 1000hrs | 22pcs | 0/1 |

Rework

1. Customer must finish rework within 5 sec under 245°C.
2. The head of iron can not touch copper foil.
3. Twin-head type is preferred.





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❖ Precautions For Use

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 time

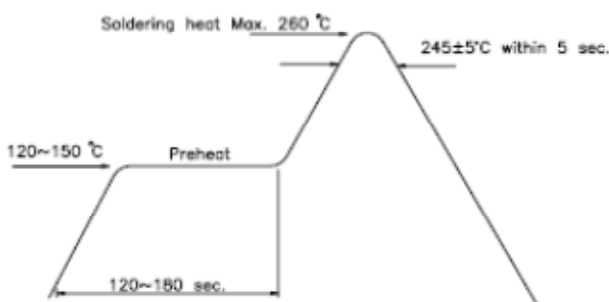
2.1 The operation of Temperature and RH are : 5°C~35°C, RH60%.

2.2 Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a damp proof box with descanting agent. Considering the tape life , we suggest our customers to use our products within a year(from production date).

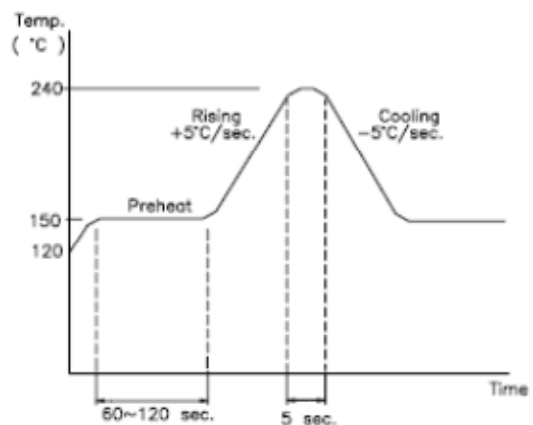
2.3 If opened more than one week in an atmosphere 5°C~35°C, RH 60%, they should be treated at 60°C± 5°C for 15hrs.

2.4 When you discover that the desiccant in the package has a pink color (Normal = blue) , you should treat them in the same conditions as 2.3.

Soldering heat



Reflow Temp / Time



Soldering Iron

Basic spec is ≤ 5 sec when 260°C. If temperature is higher, time should be shorter (+10°C → -1sec). Power dissipation of Iron should be smaller than 15 W , and temperature should be controllable. Surface temperature of the device should be under 230 °C.



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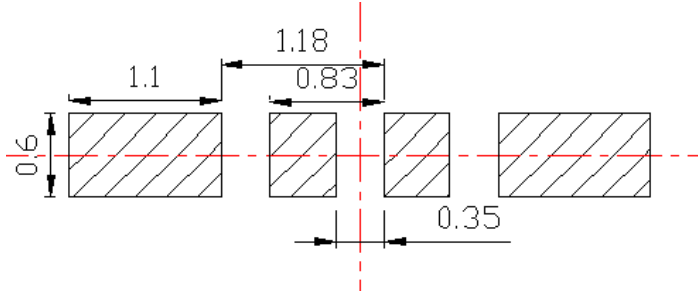
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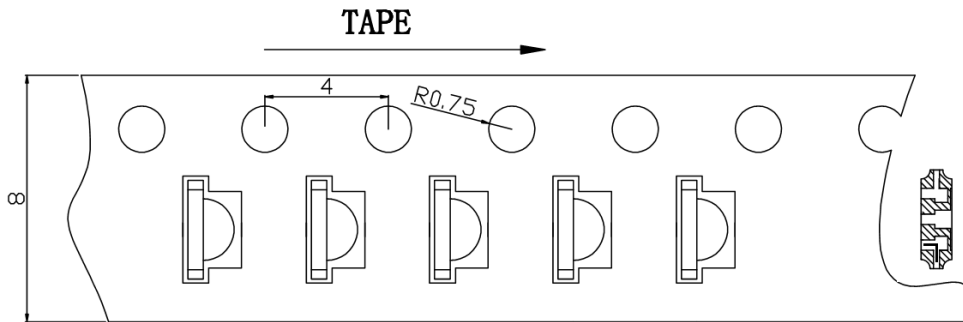
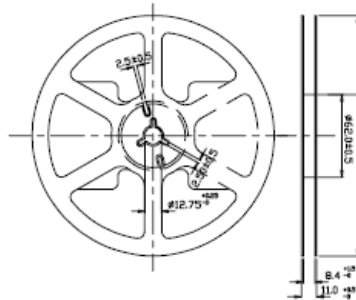
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◇ Recommended Soldering Pad Dimensions



◇ Tape Specification: 2,000PCS per reel



◇ Package Label

| | |
|---|------------|
| SMD LED | |
| PART NO: _____ | QA Pass |
| LOT NO : _____ | |
| Q' TY : _____ | |
| VF : _____ IV : _____ | |
| WL : _____ BIN: _____ | Pb |
| DATA : _____ | |
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❖ Package & Shipping Instructions

