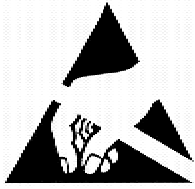


HL-304U32YC-R



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

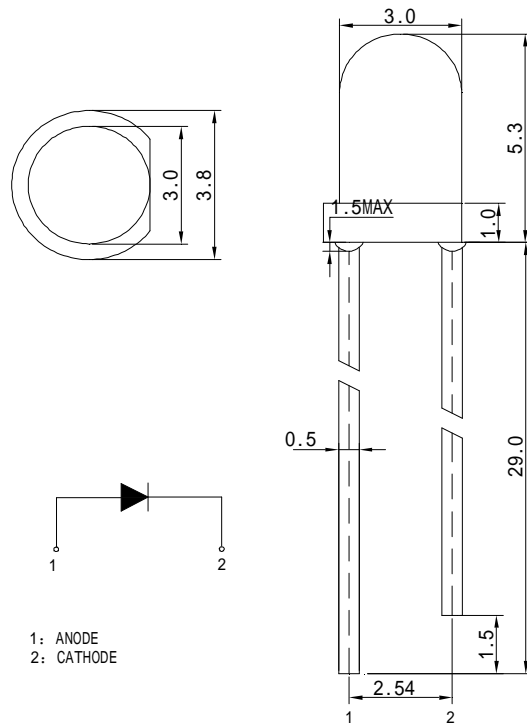
HL-304U32YC-R



**Features**

- $\phi 3$  LAMP LED
- LOW POWER CONSUMPTION.
- CABINED VIEWING ANGLE.
- IDEAL FOR BACKLIGHT AND INDICATOR.
- PACKAGE: 1000PCS / BAG.

**Package Dimensions**



**Description**

This devices are made with TS AlGaInP.

| Tolerance Grade | Dimension Tolerance (UNIT:mm) |             |           |           |
|-----------------|-------------------------------|-------------|-----------|-----------|
|                 | 0.5~3                         | 3~6         | 6~30      | 30~120    |
|                 | $\pm 0.1$                     | $\pm 0.2$   | $\pm 0.3$ | $\pm 0.5$ |
| Chip            |                               | Lens Color  |           |           |
| Material        | Emitting Color                | Water Clear |           |           |
| AlGaInP         | Yellow                        |             |           |           |

**■ Absolute Maximum Rating**

| Item                        | Symbol           | Value                    | Unit |
|-----------------------------|------------------|--------------------------|------|
| Forward Current             | I <sub>F</sub>   | 20                       | mA   |
| Peak Forward Current*       | I <sub>FP</sub>  | 100                      | mA   |
| Reverse Voltage             | V <sub>R</sub>   | 5                        | V    |
| Power Dissipation           | P <sub>D</sub>   | 80                       | mW   |
| Electrostatic discharge     | E <sub>SD</sub>  | 2000                     | V    |
| Operation Temperature       | T <sub>opr</sub> | -30~+80                  | °C   |
| Storage Temperature         | T <sub>stg</sub> | -30~+80                  | °C   |
| Lead Soldering Temperature* | T <sub>sol</sub> | Max. 260°C for 5sec Max. |      |

\*I<sub>FP</sub> Conditions: Pulse Width ≤ 10msec

\*T<sub>sol</sub> Conditions: 3mm from the base of the epoxy bulb

**■ Typical Optical/ Electrical Characteristics Ta=25°C**

| Item                      | Symbol               | Condition            | Rank | Min. | Typ. | Max. | Unit |
|---------------------------|----------------------|----------------------|------|------|------|------|------|
| Luminous Intensity        | I <sub>v</sub>       | I <sub>F</sub> =20mA | X    | 3770 |      | 4900 | mcd  |
|                           |                      |                      | Y    | 4900 |      | 6370 | mcd  |
|                           |                      |                      | Z    | 6370 |      | 8280 | mcd  |
| Forward Voltage           | V <sub>F</sub>       |                      |      | 1.8  | 2.2  | 2.6  | V    |
| Viewing Angle             | 2θ 1/2               |                      |      | --   | 25   | --   | deg  |
| Dominant Wavelength       | λ <sub>D</sub>       |                      |      | 585  | --   | 595  | nm   |
| Recommend Forward Current | I <sub>F</sub> (rec) | --                   |      | --   | --   | 20   | mA   |
| Reverse Current           | I <sub>R</sub>       | V <sub>r</sub> =5V   |      | --   | --   | 20   | uA   |

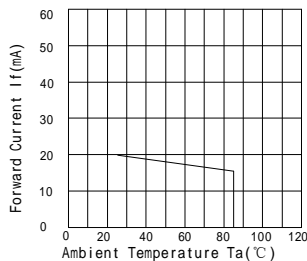
Notes:

Tolerance : V<sub>F</sub> ± 0.1V, λ<sub>D</sub> ± 2 nm, I<sub>v</sub>(φ V) ± 15%, 2θ 1/2 ± 15%

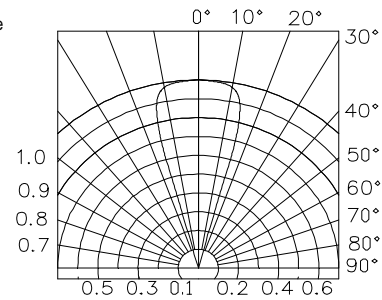
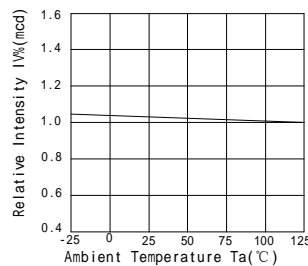
**Reliability Performance Test Items And Result**

| Test Classification | Test Item                               | Test Conditions   | Test Duration | Sample Size | AC/RE |
|---------------------|---|---|---------------|-------------|-------|
| Life Test           | Room Temperature DC Operating Life Test | $T_a=25^{\circ}\text{C}\pm 5^{\circ}\text{C}$ , $I_f=20\text{mA}$   | 1000 hrs      | 22 pcs      | 0/1   |
| Environment Test    | Thermal Shock Test                      | $100^{\circ}\text{C}\pm 5^{\circ}\text{C}$ 5min<br>↑ ↓<br>$-40^{\circ}\text{C}\pm 5^{\circ}\text{C}$ 5min.        | 100 cycles    | 22 pcs      | 0/1   |
|                     | Temperature Cycle Test                  | $100^{\circ}\text{C}\pm 5^{\circ}\text{C}$ 30min<br>↑ ↓ 5min<br>$-40^{\circ}\text{C}\pm 5^{\circ}\text{C}$ 30min. | 100 cycles    | 22 pcs      | 0/1   |
|                     | High Temperature & High Humidity Test   | $85^{\circ}\text{C}\pm 5^{\circ}\text{C}/85\% \text{RH}$<br>$I_f=5\text{mA}$                                      | 1000 hrs      | 22 pcs      | 0/1   |
|                     | High Temperature Storage                | $T_a=100^{\circ}\text{C}\pm 5^{\circ}\text{C}$  | 1000 hrs      | 22 pcs      | 0/1   |
|                     | Low Temperature Storage                 | $T_a=-40^{\circ}\text{C}\pm 5^{\circ}\text{C}$  | 1000 hrs      | 22 pcs      | 0/1   |
| Mechanical Test     | Resistance to Soldering Heat            | Temp= $260^{\circ}\text{C}$ max<br>T=5sec max   | 1 times       | 22 pcs      | 0/1   |
|                     | Lead Integrity                          | Load 2.5N(0.25kgf)<br>$0^{\circ} \sim 90^{\circ} \sim 0^{\circ}$  | 3 times       | 22 pcs      | 0/1   |

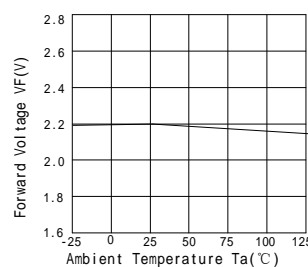
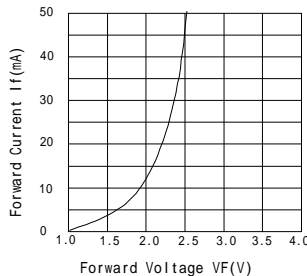
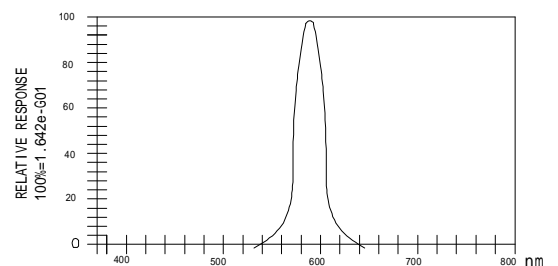
Forward Current vs. Ambient Temperature



Relative Intensity vs. Ambient Temperature



Forward Current vs. Forward Voltage


 Luminous Spectrum ( $T_a=25^{\circ}\text{C}$ ) SPECTRAL RADIANCE


**Soldering:**

## 1. Manual Of Soldering

The temperature of the iron tip should not be higher than 300°C and Soldering within 3 seconds per solder-land is to be observed.

## 2. DIP soldering (Wave Soldering):

Preheating: 120°C~150°C, within 120~180 sec.

Operation heating: 245°C ± 5°C within 5 sec. 260°C (Max)

Gradual Cooling (Avoid quenching).

