

LED LAMP SPECIFICATION

| Drawn by | Checked by | Approved by |
|----------|------------|-------------|
| | | |
| | | |

Rev. 0.0



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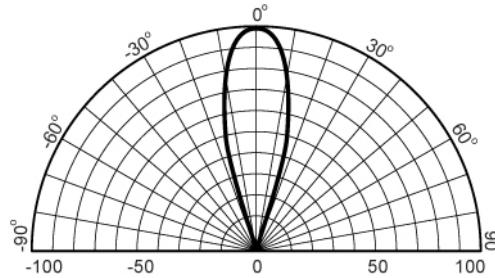


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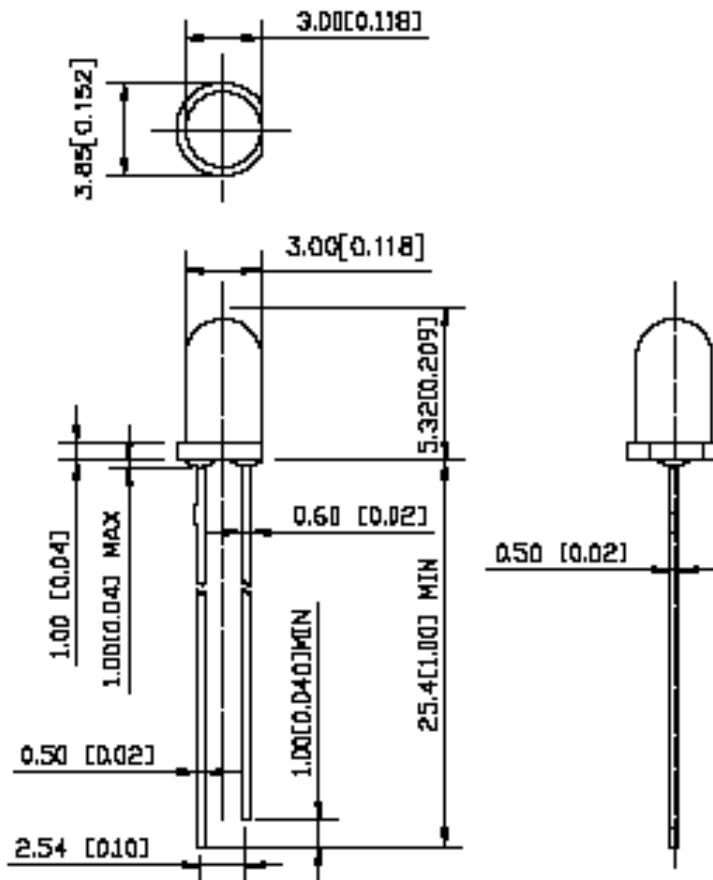
ULP-HDR31A-30

1. Features

- 3mm round No flange type lamp.
- TS AlGaInP/GaP Super bright Red.
- Viewing angle 30°.
- Water clear epoxy-molding type.
- High reliability and long life.
- High luminous intensity.
- Lead free(RoHs compliant).



2. Dimension



Unit: mm[inches]

Tolerance : ±0.25mm [0.01]



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3. Absolute maximum ratings (Ta=25°C)

| Parameter | Sym | Rating | Unit |
|-------------------|------|-------------|------|
| Forward Current | IF | 30 | mA |
| Reverse Voltage | VR | 5 | V |
| Power Dissipation | PD | 69 | mW |
| Operation Temp | Topg | -30 ~ + 85 | °C |
| Storage Temp | Tstg | -40 ~ + 100 | °C |

4. Optoelectronic characteristics (Ta=25°C)

| Parameter | Sym | Condition | Min | Typ | Max | Unit |
|----------------------|-----|--------------|------|-----|------|------|
| Forward Voltage | VF | IF = 20mA | 1.90 | | 2.30 | V |
| Reverse Current | IR | VR = 3V | | 10 | | μA |
| Luminous Intensity | L | IF = 20mA | 1500 | | 2000 | mcd |
| Dominant wave length | λd | " | 620 | | 630 | nm |
| Line half width | Δλ | " | | 35 | | nm |
| Capacitance | Co | Vo=0, f=1MHz | | 50 | | pF |
| Response time | T | " | | 250 | | nsec |

5. Soldering conditions

Soldering Temp ≤ 260°C
 Soldering Time ≥ 5 sec at location 3.0mm away from the base of the epoxy bulb.



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6. Reliability test

1) Result of reliability Test

| Test Item | Test Conditions | Note | Number of Damaged |
|---|--|--------------------|-------------------|
| Steady State Operating Life | Ta = 25℃ IF=20mA | 1000hrs | 0/100 |
| Steady State Operating Life of Low Temperature | Ta=30℃, IF=20mA | 1000hrs | 0/100 |
| Steady State Operating Life of High Temperature | Ta=85℃, IF=20mA | 1000hrs | 0/100 |
| Steady State Operating Life of High Humidity Heat | 60℃, RH=90% IF=20mA | 500hrs | 0/100 |
| Resistance to Soldering Heat | Tsld=260 ± 5℃, 10sec. 3mm from the base of the epoxy bulb | 1 time | 0/100 |
| Solder ability | Tsld=260 ± 5℃, 5sec. (using flux) | 1 time Over 90% | 0/100 |
| Thermal Shock | 0℃ ~ 100℃ 15sec. 15sec. | 100 cycles | 0/100 |
| Temperature Cycle | 40℃ ~ 25℃ ~ 100℃ ~ 25℃ 30min. 5min. 30min. 5min. | 100 cycles | 0/100 |
| Moisture Resistance Cyclic | 25℃ ~ 65℃ ~ 10℃ 90%RH 24hrs / 1cycle | 10 cycles | 0/100 |
| High Temperature Storage | Ta = 100℃, | 1000hrs | 0/100 |
| Temperature Humidity Storage | Ta = 60℃ RH=90% | 1000hrs | 0/100 |
| Low Temperature Storage | Ta = -40℃ | 1000hrs | 0/100 |

2) The reliability criteria of Lamp LED

| Item | Symbol | Test Conditions | Criteria for Judgement. | |
|--------------------|--------|-----------------|-------------------------|-----------------|
| | | | Min. | Max. |
| Forward Voltage | VF | IF=20mA | - | U.S.L. *) X 1.1 |
| Reverse Current | IR | VR=5V | - | U.S.L. *) X 2.0 |
| Luminous Intensity | IV | IF=20mA | L.S.L **) X 0.7 | - |

*) U.S.L. : Upper Standard Level

**) L.S.L. : Lower Standard Level.



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■ Typical Electro-Optical Characteristics Curve:

Fig 1. Forward Current vs. Forward Voltage

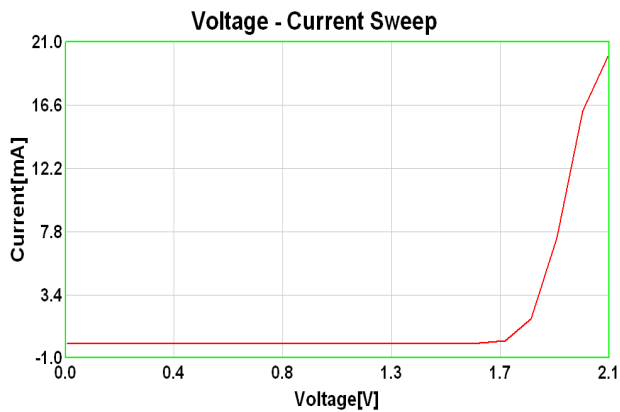


Fig 2. Relative Intensity vs. Forward Current

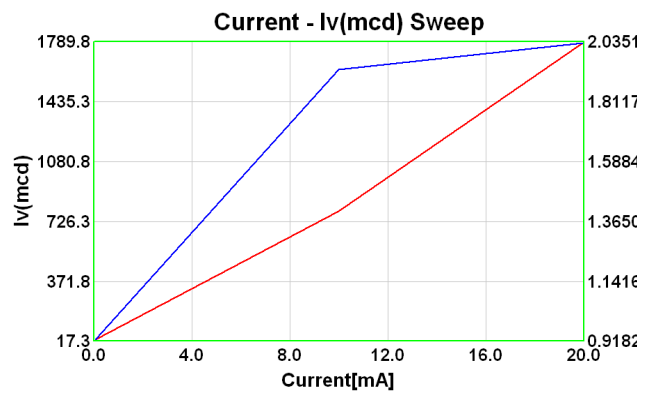


Fig 3. Relative Intensity vs. Wavelength

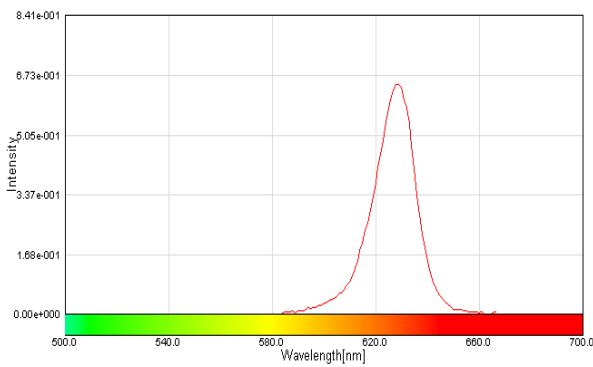


Fig 4. Forward current vs. Temperature

