



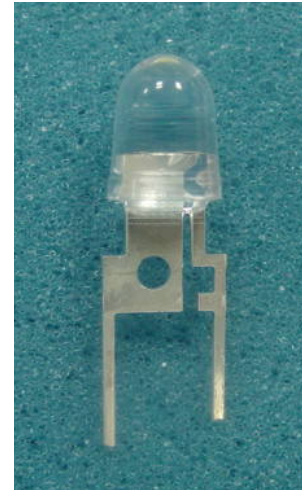
# Technical Data Sheet

## High Power Lamp

### EHP-5393/SUR01-P01

#### Features

- Popular 10 mm package.
- View angle: 25° .
- High light flux output
- Soldering methods: Dip soldering.
- Optical efficiency: 42 lm/W
- Thermal resistance (junction to leadframe): 13K/W
- The product itself will remain within RoHS compliant version.
- ESD-withstand voltage: up to 4KV



#### Descriptions

- The series is specially designed for applications requiring higher brightness.
- The LED lamps are available with different colors, intensities, epoxy colors, etc.

#### Applications

- Flashlight
- Sunshine light.
- Advertising Signs.
- Back lighting.

#### Device Selection Guide

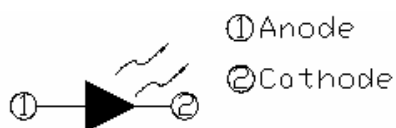
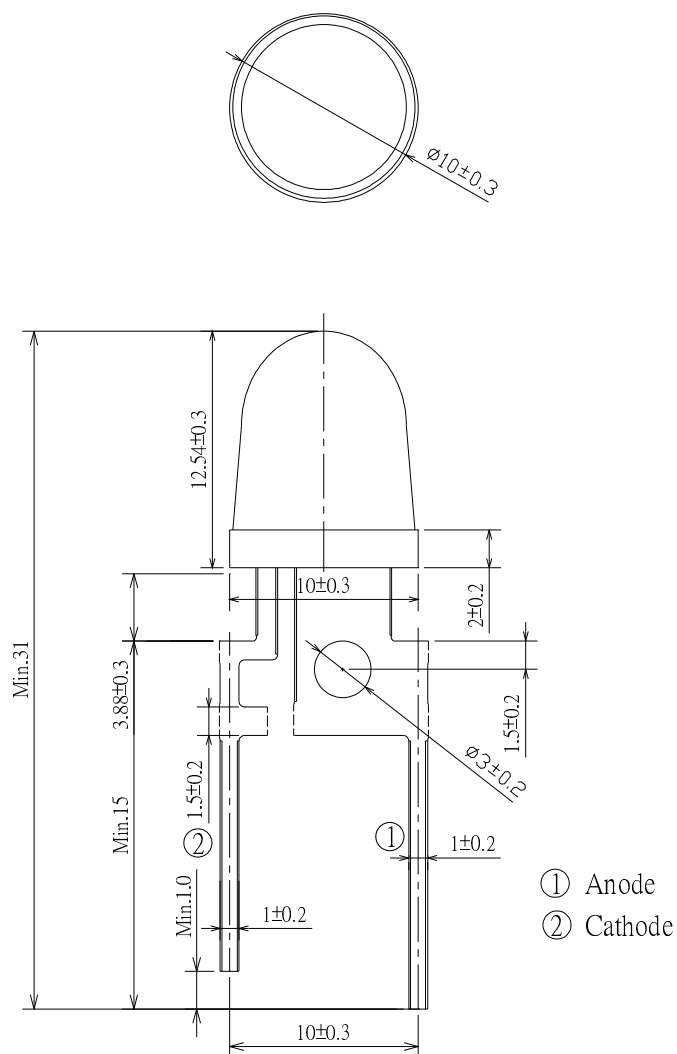
| LED Part No.       | Chip     |               | Lens Color  |
|--------------------|----------|---------------|-------------|
|                    | Material | Emitted Color |             |
| EHP-5393/SUR01-P01 | AlGaInP  | Brilliant Red | Water Clear |

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## Package Dimensions



### Notes:

- Other dimensions are in millimeters, tolerance is 0.25mm except being specified.
- Protruded resin under flange is 1.5mm Max LED.
- Bare copper alloy is exposed at tie-bar portion after cutting.



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#### **Absolute Maximum Rating ( $T_a=25^{\circ}\text{C}$ )**

| Parameter                                  | Symbol        | Absolute Maximum Rating | Unit               |
|--------------------------------------------|---------------|-------------------------|--------------------|
| Forward Current                            | $I_F$         | 385                     | mA                 |
| Thermal resistance (junction to leadframe) | $R_{th(j-l)}$ | 13                      | K/W                |
| Operating Temperature                      | $T_{opr}$     | -40 ~ +85               | $^{\circ}\text{C}$ |
| Storage Temperature                        | $T_{stg}$     | -40 ~ +100              | $^{\circ}\text{C}$ |
| Electrostatic Discharge                    | ESD           | 4K                      | V                  |
| Soldering Temperature                      | $T_{sol}$     | 260                     | $^{\circ}\text{C}$ |
| Power Dissipation                          | $P_d$         | 1.3                     | W                  |
| Reverse Voltage                            | $V_R$         | 5                       | V                  |
| Zener Reverse Current                      | $I_Z$         | 100                     | mA                 |

Notes: Soldering time  $\leq 5$  seconds.

#### **Electro-Optical Characteristics ( $T_a=25^{\circ}\text{C}$ )**

| Parameter             | Symbol          | Min. | Typ. | Max. | Unit          | Condition          |
|-----------------------|-----------------|------|------|------|---------------|--------------------|
| Total Flux            | Flux            | 27   | 35   | 45   | lm            | $I_F=350\text{mA}$ |
| Peak Wavelength       | $\lambda_p$     | --   | 632  | --   | nm            |                    |
| Dominant Wavelength   | $\lambda_d$     | 620  | 624  | 628  | nm            |                    |
| Viewing Angle         | $2\theta_{1/2}$ | --   | 25   | --   | deg           |                    |
| Forward Voltage       | $V_F$           | 2.0  | 2.4  | 3.0  | V             |                    |
| Reverse Current       | $I_R$           | --   | --   | 10   | $\mu\text{A}$ | $V_R=5\text{V}$    |
| Zener Reverse Voltage | $V_Z$           | 5.2  | --   | --   | V             | $I_Z=5\text{mA}$   |



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#### Rank Combination ( $I_F=350\text{mA}$ )

| Rank       | R1    | R2    | R3    |
|------------|-------|-------|-------|
| Total Flux | 27~33 | 33~39 | 39~45 |

\*Measurement Uncertainty of Total Flux:  $\pm 15\%$  Unit:lm

#### Forward Voltage Combination (V at 350mA)

| Rank            | 2       | 3       | 4       | 5       | 6       |
|-----------------|---------|---------|---------|---------|---------|
| Forward Voltage | 2.0~2.2 | 2.2~2.4 | 2.4~2.6 | 2.6~2.8 | 2.8~3.0 |

\*Measurement Uncertainty of Forward Voltage:  $\pm 0.1\text{V}$  Unit:V

#### Color Combination ( at 350mA)

| Rank                | 1       | 2       |
|---------------------|---------|---------|
| Dominant Wavelength | 620~624 | 624~628 |

\*Measurement Uncertainty of Dominant Wavelength  $\pm 1.0\text{nm}$

Unit:nm

\*The quantity ratio of the ranks is decided by EVERLIGHT.

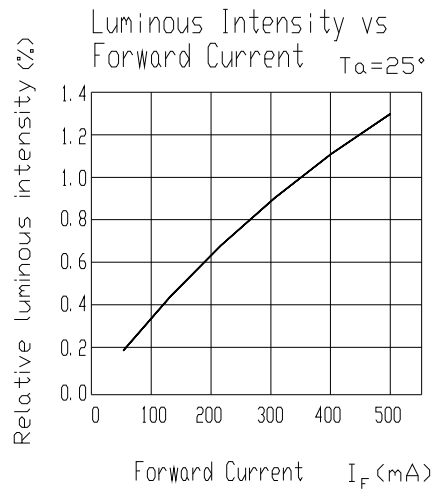
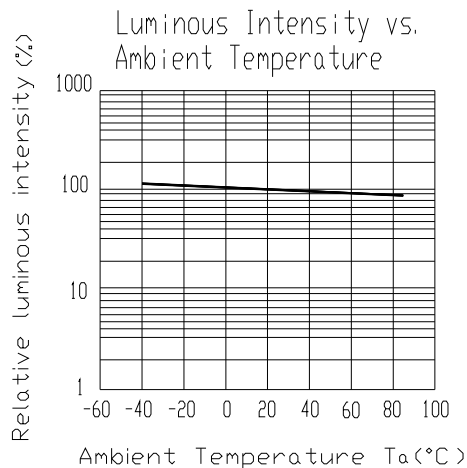
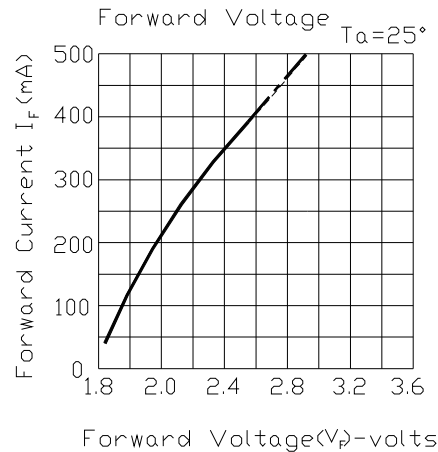
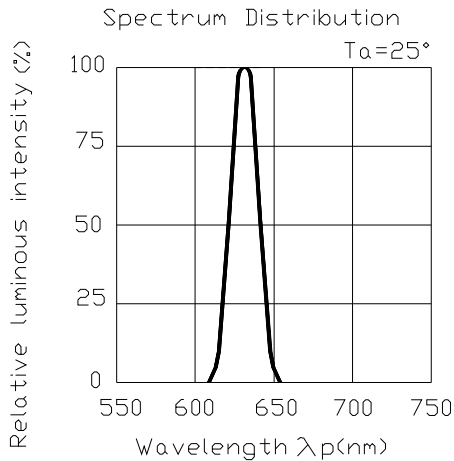


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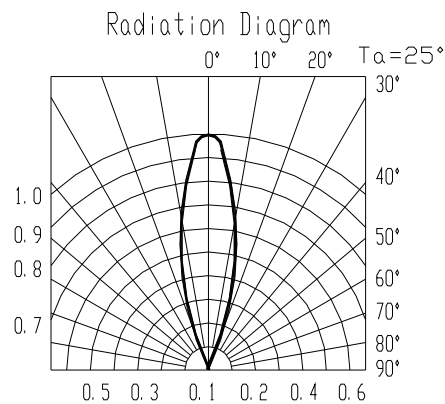
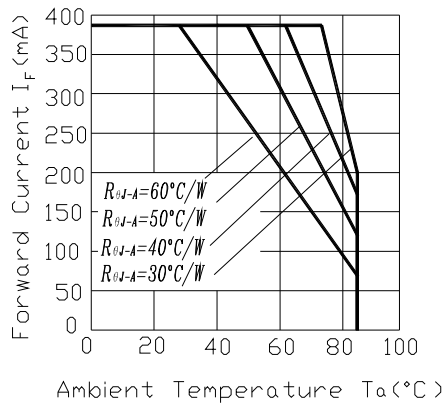
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**EHP-5393/SUR01-P01**

### Typical Electro-Optical Characteristics Curves



Forward Current Derating Curve





## Technical Data Sheet

### High Power Lamp

**EHP-5393/SUR01-P01**

#### Packing Quantity Specification

1.100PCS/1Bag , 5Bags/1Box

2.10Boxes/1Carton

#### Label Form Specification

|                      |      |
|----------------------|------|
| <div>EVERLIGHT</div> |      |
| CPN:                 |      |
| P/N:                 |      |
|                      | RoHS |
| EHP-5393/SUR01-P01   |      |
| QTY :                | CAT: |
|                      | HUE: |
| LOT NO :             | REF: |
|                      |      |
| MADE IN TAIWAN       |      |

CPN: Customer's Production Number

P/N : Production Number

QTY: Packing Quantity

CAT: Ranks of Total Flux and Forward Voltage

HUE: Ranks of Dominant Wavelength

REF: Reference

LOT No: Lot Number

MADE IN TAIWAN: Production Place

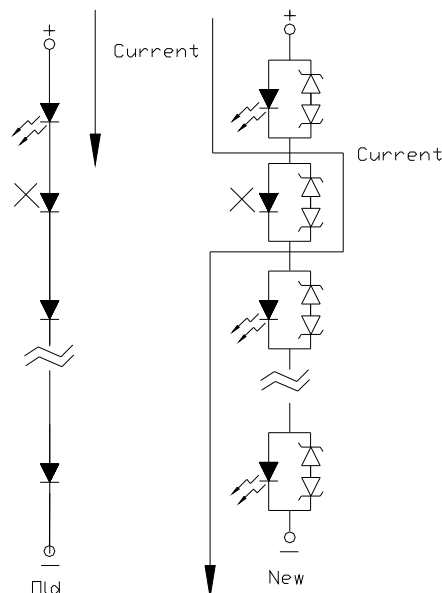
## Technical Data Sheet

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#### Notes

1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
3. These specification sheets include materials protected under copyright of EVERLIGHT corporation. Please don't reproduce or cause anyone to reproduce them without EVERLIGHT's consent.
4. 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  $V_z$ .
5. When the LED is connected using serial circuit, if either piece of LED is no light up but current can't 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.





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6. If the emitter is operated, consider using metal heat sink with the lowest possible thermal resistance. We do not recommend lighting the emitter for more than a few seconds without an additional heat sink. For the thermal performance using a flat heat sink, allow an exposed surface area of about 25mm<sup>2</sup> at least.

#### 7. Soldering Condition

Careful attention should be paid during soldering. When soldering, leave more than 3mm from solder joint to case, and soldering beyond the base of the tie bar is recommended.

Avoiding applying any stress to the lead frame while the LEDs are at high temperature particularly when soldering.

Recommended soldering conditions:

| Hand Soldering       |                                     | DIP Soldering |                          |
|----------------------|-------------------------------------|---------------|--------------------------|
| Temp. at tip of iron | 350°C Max. (30W Max.)               | Preheat temp. | 100°C Max. (60 sec Max.) |
| Soldering time       | 3 sec Max.                          | Bath temp.    | 260 Max.                 |
| Distance             | 3mm Min.(From solder joint to case) | Bath time.    | 5 sec Max.               |
|                      |                                     | Distance      | 3mm Min.                 |

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