# SE-HPOS-5W
# High Power 5W Pure White Long Life

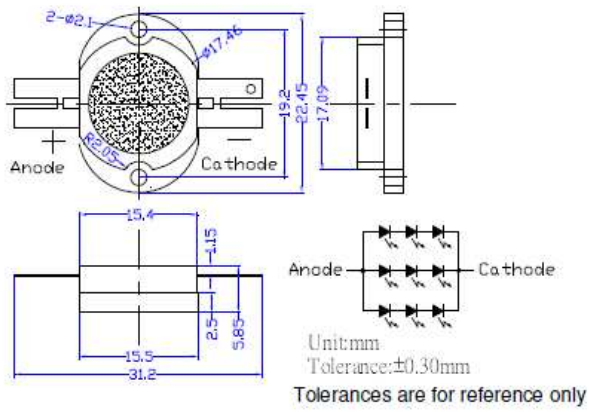
## ■ Features

- High-power LED
- Long lifetime operation
- Typical viewing angle : 140deg
- RoHS compliant
- Possible to attach to heat sink directly without using print circuit board.

## ■ Applications

- Indoor & outdoor lighting
- Stage lighting
- Reading lamps
- Display cases, furniture illumination, marker
- Architectural illumination
- Spotlights

## ■Outline Dimension




Tolerances are for reference only

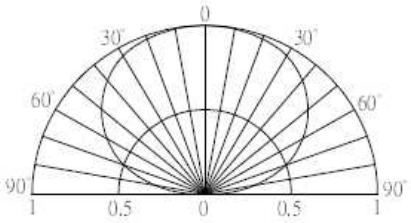
## ■Absolute Maximum Rating (Ta=25℃)

| Item | Symbol | Value | Unit |
|---|---|---|---|
| DC Forward Current *1 | $I_F$ | 600 | mA |
| Pulse Forward Current*2 | $I_{FP}$ | 1,000 | mA |
| Reverse Voltage | $V_R$ | 15 | V |
| Power Dissipation*1 | $P_D$ | 6,840 | mW |
| Operating Temperature | Topr | -30 ~ +85 | ℃ |
| Storage Temperature | Tstg | -40~ +100 | ℃ |
| Lead Soldering Temperature | Tsol | 260℃/5sec | - |

*1, Power dissipation and forward current are the value when the module temperature is set lower than the rating by using an adequate heat sink.

*2, Pulse width Max.10ms Duty ratio max 1/10

## ■Directivity




## ■Electrical -Optical Characteristics (Ta=25℃)

| Item | Symbol | Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| DC Forward Voltage | $V_F$ | $I_F$=500mA | 8.7 | 10 | 11.4 | V |
| DC Reverse Current | $I_R$ | $V_R$=15V | - | - | 30 | μA |
| Luminous Flux | Φv | $I_F$=500mA | 350 | 410 | - | lm |
| Color Temperature | CCT | $I_F$=500mA | - | 6500 | - | K |
| Chromaticity Coordinates* | x | $I_F$=500mA | - | 0.31 | - | |
| | y | $I_F$=500mA | - | 0.34 | - | |
| 50% Power Angle | $2\theta_{1/2}$ | $I_F$=500mA | - | 140 | - | deg |

Note: Don't drive at rated current more than 5s without heat sink for High Power series.

* Tolerance of chromaticity coordinates is ±10% , * Tolerance of Luminous Flux is ±20%

SE-HPOS-5W
High Power 5W Pure White Long Life

## ■Heat design

The following pictures show some measurements of mounted 5W Led on the heat sink for each board A and B (See Fig 1) with using thermograph to make an observation about heat distribution. Each boards is tested at various current conditions.
As a result, LED needs larger heat sink as much as possible to reduce its own case temperature.

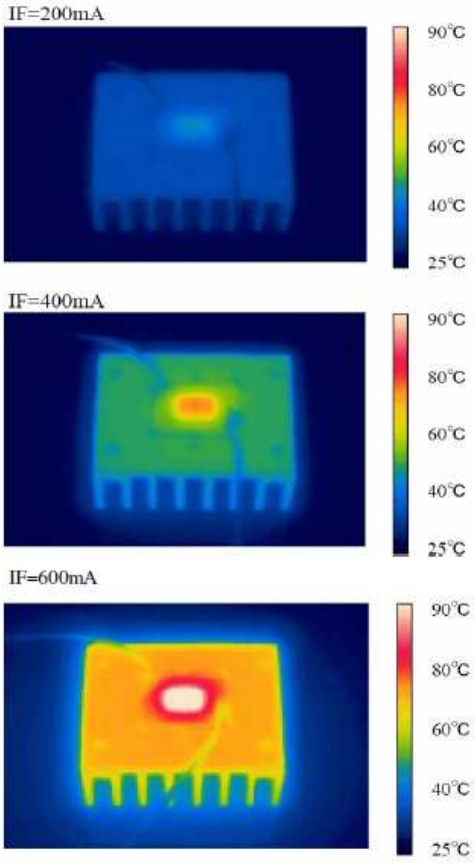
**Fig. 1 Configuration pattern examples for board assembly**

| Board | LED power | Material | Surface area (㎟) Min. |
|---|---|---|---|
| A | 5W | Al | 10,300 |
| B | 10W | Al | 20,600 |
| C | 25W | Al | 51,500 |
| D | 50W | Al | 103,000 |
| E | 100W | Al | 206,000 |
| F | 200W | Al | 412,000 |
| G | 300W | Al | 618,000 |

Above tested LED device is attached with adhesive sheet to the heatsink.

For reference's sake, Tj absolute maximum rating is defined at 115℃ as a prerequisite on design process of 5W LED.

**<Fig.2> Board A (surface area=10,300㎟)**




**<Fig.3> Board B (surface area=20,600㎟)**