

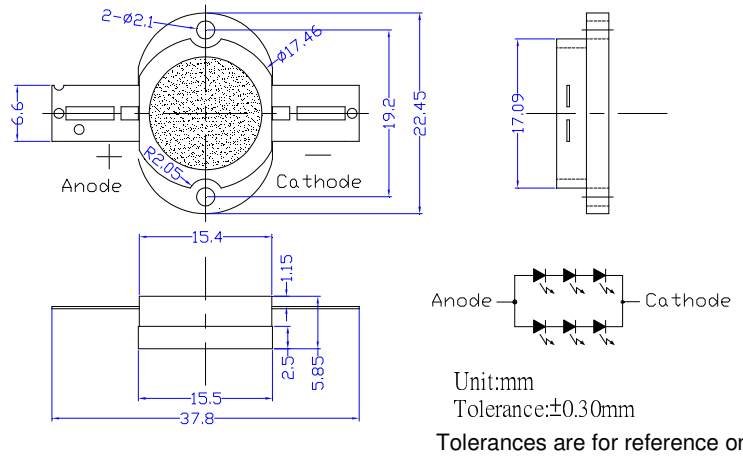
■ **Features**

- 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**

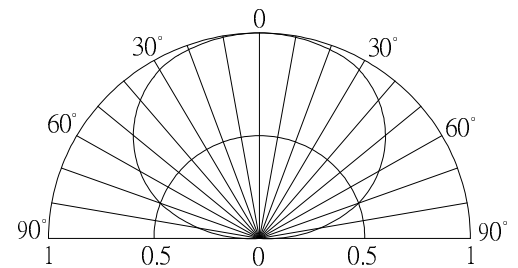


■ **Absolute Maximum Rating**

(Ta=25°C)

| 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 | T _{opr} | -30 ~ +85 | °C |
| Storage Temperature | T _{stg} | -40~ +100 | °C |
| Lead Soldering Temperature | T _{sol} | 260°C/5sec | - |

■ **Directivity**



#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

■ **Electrical -Optical Characteristics**

(Ta=25°C)

| Item | Symbol | Condition | Min. | Typ. | Max. | Unit |
|----------------------------|-------------------|-----------------------|------|------|------|------|
| DC Forward Voltage*1 | V _F | I _F =500mA | 8.7 | 10 | 11.4 | V |
| DC Reverse Current | I _R | V _R =15V | - | - | 30 | μA |
| Luminous Flux*2 | Φ _v | I _F =500mA | 300 | 370 | - | lm |
| Color Temperature | CCT | I _F =500mA | - | 3000 | - | K |
| Chromaticity Coordinates*3 | x | I _F =500mA | - | 0.45 | - | |
| | y | I _F =500mA | - | 0.41 | - | |
| 50% Power Angle | 2θ _{1/2} | I _F =500mA | - | 140 | - | deg |

*1 Tolerance of measurements of forward voltage is ±0.1V

*2 Tolerance of measurements of luminous flux is ±15%

*3 Tolerance of measurements of chromaticity coordinate is ±10%

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

■ 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 (mm ²) Min. |
|-------|-----------|----------|--------------------------------------|
| A | 5W | Al | 20,600 |
| B | 10W | Al | 41,200 |
| C | 25W | Al | 103,000 |
| D | 50W | Al | 206,000 |
| E | 100W | Al | 412,000 |
| F | 200W | Al | 824,000 |
| G | 300W | Al | 1236,000 |

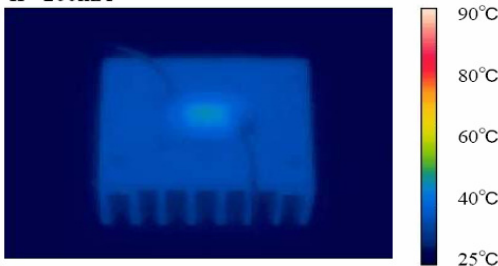
Above tested LED device is attached with adhesive sheet to the heatsink.

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

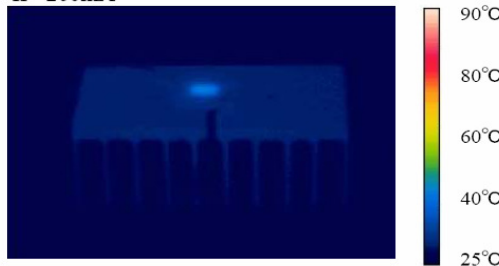
<Fig.2> Board A (surface area=10,300mm²)

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

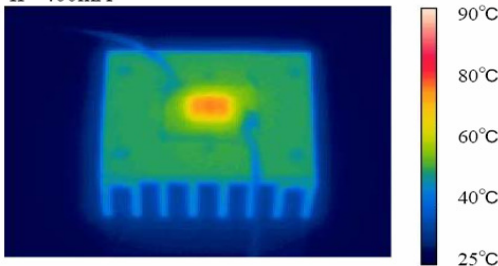
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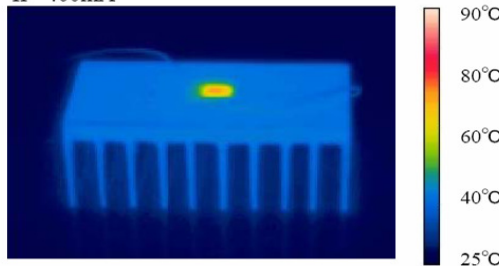
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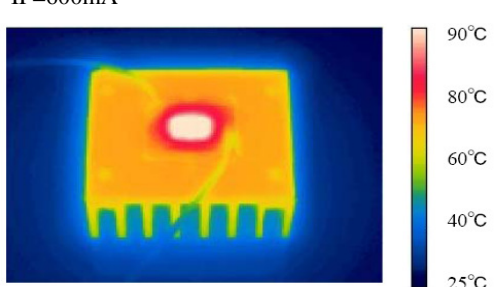
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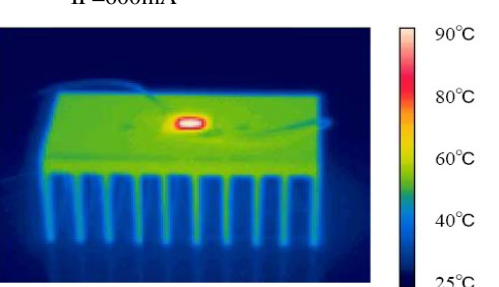
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IF=600mA



IF=600mA



■ Heat Design → Design Flow Chart

