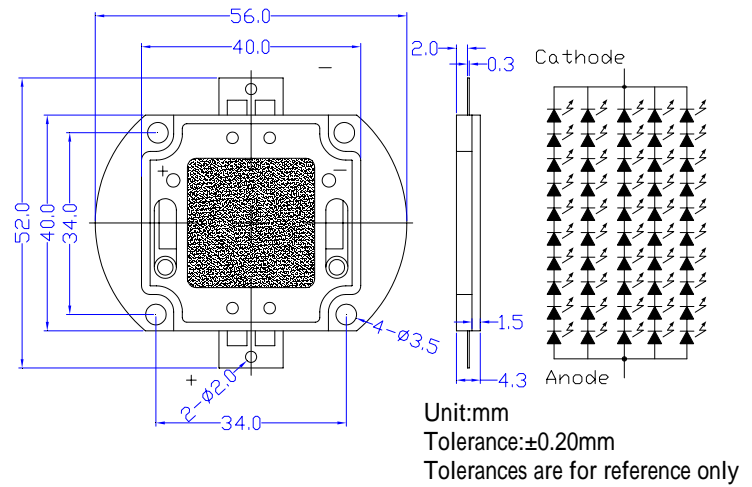


**■ Features**

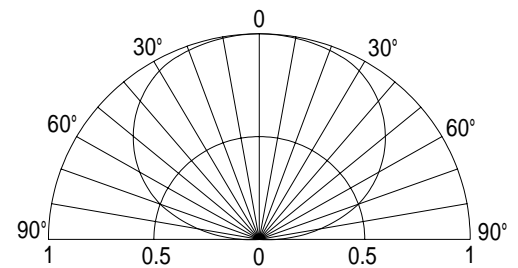
- High-power LED
- Long lifetime operation
- Typical viewing angle : 140deg
- RoHS compliant
- Possible to attach to heat sink directly without using print circuit board.

**■ Applications**

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

**■ Outline Dimension**

**■ Absolute Maximum Rating**
**(Ta=25 )**

| Item                       | Symbol    | Value     | Unit |
|----------------------------|-----------|-----------|------|
| DC Forward Current *1      | $I_F$     | 3,500     | mA   |
| Pulse Forward Current*2    | $I_{FP}$  | 4,000     | mA   |
| Reverse Voltage            | $V_R$     | 50        | V    |
| Power Dissipation*1        | $P_D$     | 157,500   | mW   |
| Operating Temperature      | $T_{opr}$ | -30 ~ +85 |      |
| Storage Temperature        | $T_{stg}$ | -40~ +100 |      |
| Lead Soldering Temperature | $T_{sol}$ | 260 /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 )**

| Item                      | Symbol          | Condition    | Min. | Typ. | Max. | Unit    |
|---------------------------|-----------------|--------------|------|------|------|---------|
| DC Forward Voltage        | $V_F$           | $I_F=3000mA$ | 35   | 38   | 45   | V       |
| DC Reverse Current        | $I_R$           | $V_R=50V$    | -    | -    | 100  | $\mu A$ |
| Luminous Flux             | $\nu$           | $I_F=3000mA$ | 4900 | 6500 | -    | lm      |
| Color Temperature         | CCT             | $I_F=3000mA$ | -    | 3000 | -    | K       |
| Chromaticity Coordinates* | x               | $I_F=3000mA$ | -    | 0.45 | -    |         |
|                           | y               | $I_F=3000mA$ | -    | 0.41 | -    |         |
| 50% Power Angle           | $2\theta_{1/2}$ | $I_F=3000mA$ | -    | 140  | -    | deg     |

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

\* Tolerance of chromaticity coordinates is  $\pm 10\%$  , \* Tolerance of Luminous Flux is  $\pm 20\%$

### 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.

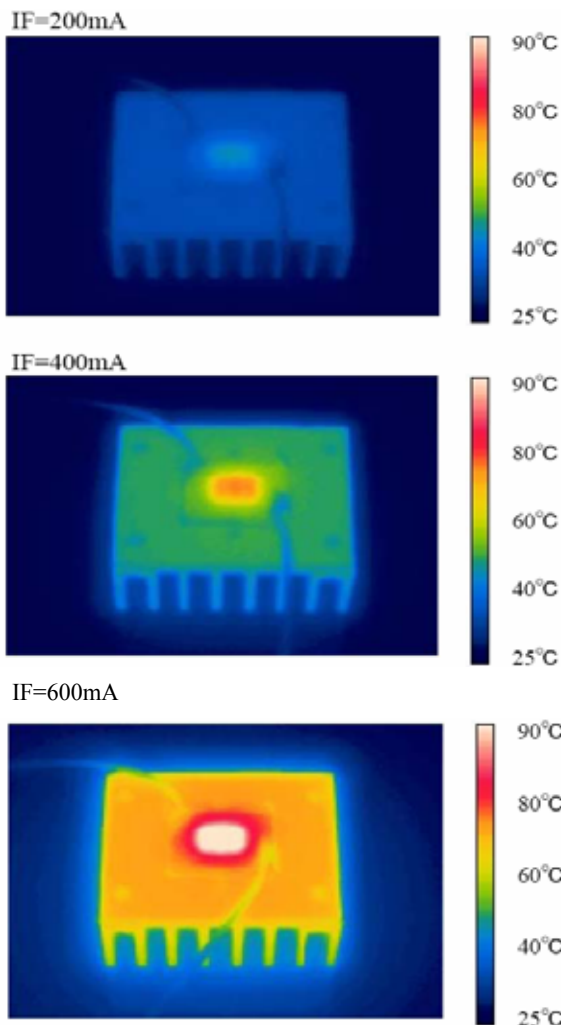
**Fig. 1 Configuration pattern examples for board assembly**

| Board | LED power | Material | Surface area (mm <sup>2</sup> ) 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, T<sub>j</sub> absolute maximum rating is defined at 115 °C as a prerequisite on design process of 5W LED.

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



**<Fig.3> Board B (surface area=20,600mm<sup>2</sup>)**

