

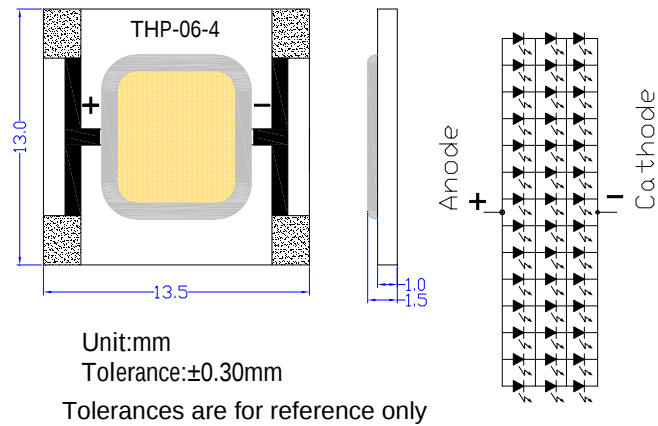
■ Features

- High-power LED
- Long lifetime operation
- Based on ceramic substrate to achieve long operating life
- Typical luminous flux performance 360lm@600mA
- 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	700	mA
Pulse Forward Current*2	I_{FP}	1400	mA
Reverse Voltage	V_R	15	V
Power Dissipation*1	P_D	6,840	mW
Operating Temperature	T_{opr}	-30 ~ +85	
Storage Temperature	T_{stg}	-40 ~ +100	
Lead Soldering Temperature	T_{sol}	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

■ Electrical -Optical Characteristics

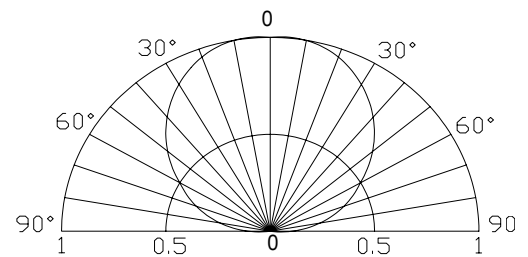
(Ta=25 °C)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
DC Forward Voltage	V_F	$I_F=600mA$	9.0	10.2	11.4	V
DC Reverse Current	I_R	$V_R=15V$	-	-	100	μA
Luminous Flux	Φ_v	$I_F=600mA$	320	360	-	lm
Color Temperature	CCT	$I_F=600mA$	-	3000	-	K
Chromaticity Coordinates*	x	$I_F=600mA$	-	0.45	-	
	y	$I_F=600mA$	-	0.41	-	
50% Power Angle	$2\theta_{1/2}$	$I_F=600mA$	-	120	-	deg

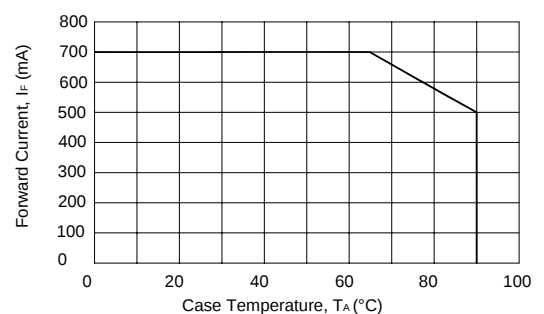
Note: Don't drive at rated current more than 5s without heat sink for High Power series.

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

■ Directivity

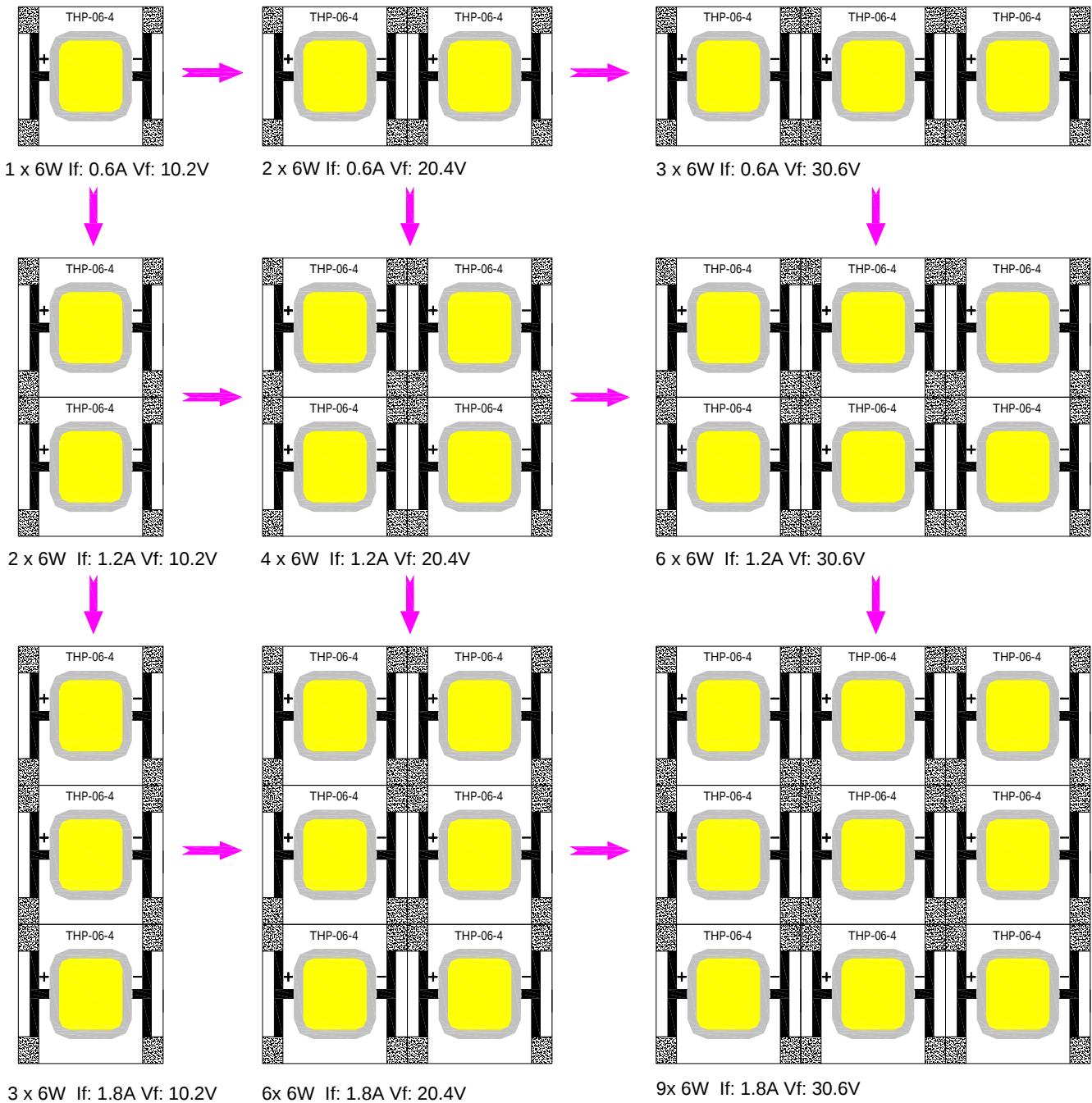


<Fig.a> Forward Current Derating Curve



■ Customer DIY

Customers can refer to the following do DIY



Customer DIY

■ 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

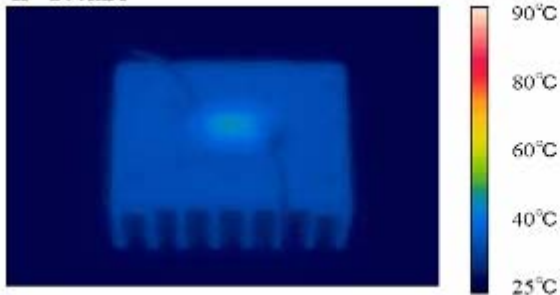
Board	LED power	Material	Surface area (mm ²) Min.
A	5W	Al	20,600
B	10W	Al	41,200
C	25W	Al	103,000
D	50W	Al	206,000
E	100W	Al	412,000
F	200W	Al	824,000
G	300W	Al	1236,000

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

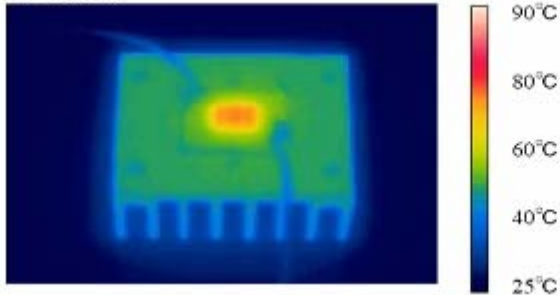
For reference's sake, Tj absolute maximum rating is defined at 115 as a prerequisite on design process of 5W LED.

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

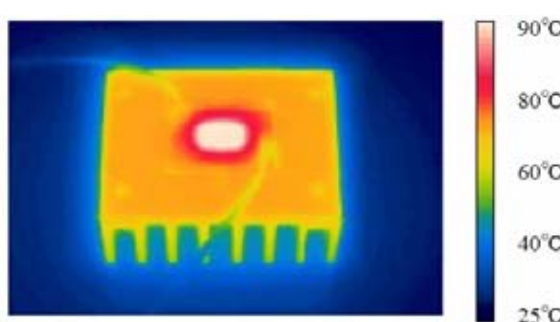
IF=200mA



IF=400mA



IF=600mA

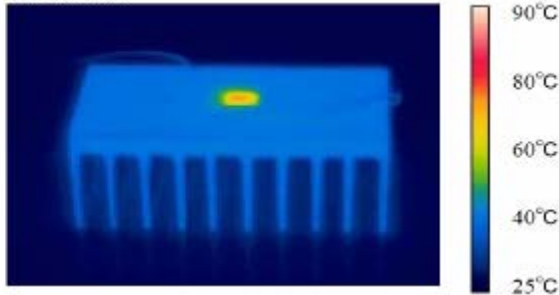


<Fig.3> Board B (surface area=20,600mm²)

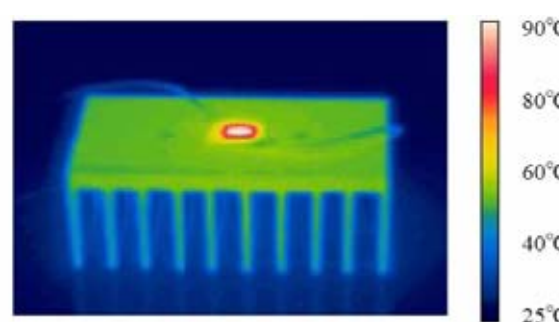
IF=200mA



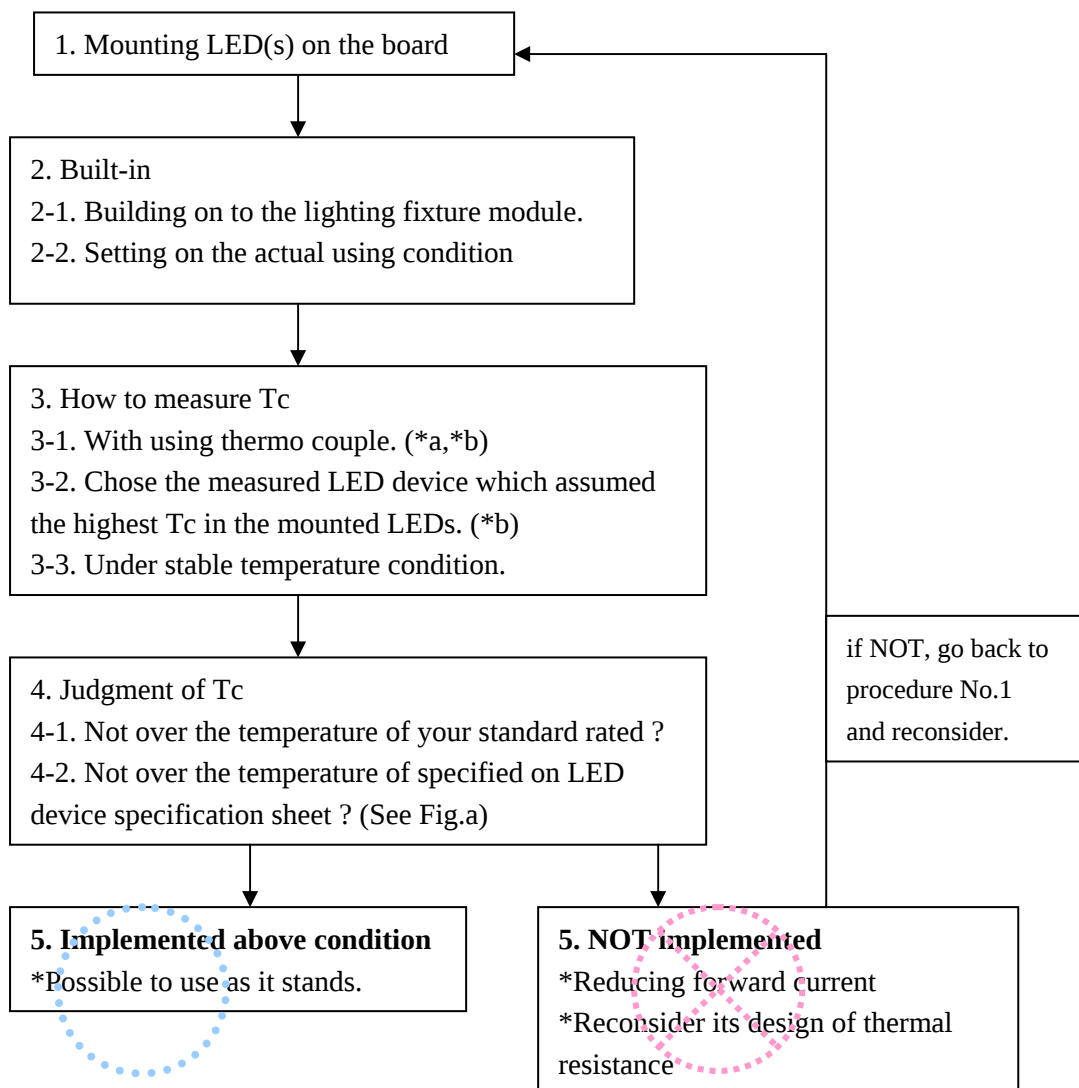
IF=400mA



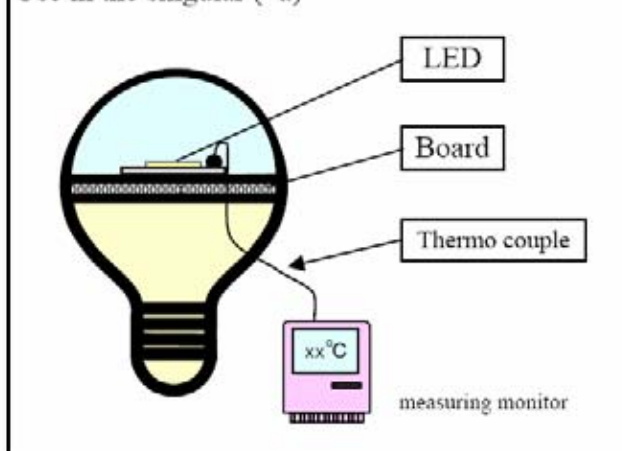
IF=600mA



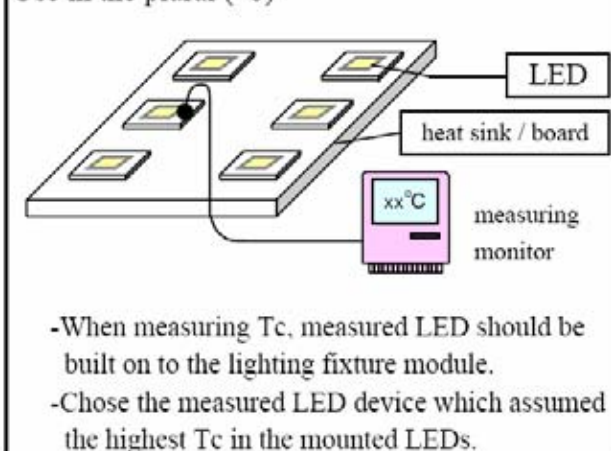
■ Heat design → Design flow chart



Use in the singular (*a)



Use in the plural (*b)



■ **Handling** → **Manually handling**

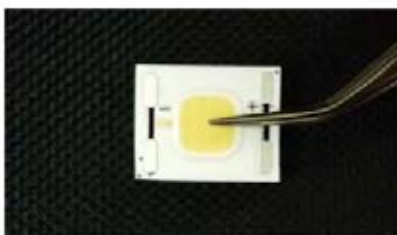
Use tweezers to catch hold of LEDs at the base substrate part. Do not touch the lens with the tweezers and fingers. Do not press on the lens.



Correct



Wrong



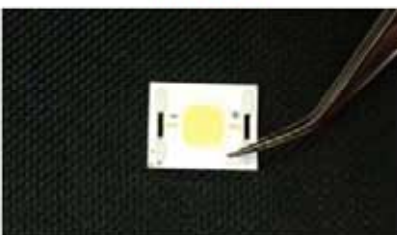
Do not touch the yellow emission resin part.



Correct



Wrong



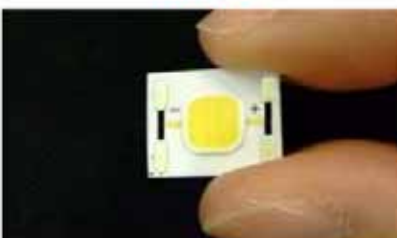
Do not touch both electrodes.



Correct



Wrong



Do not touch with naked finger. Strongly recommended to use a fingertip.