

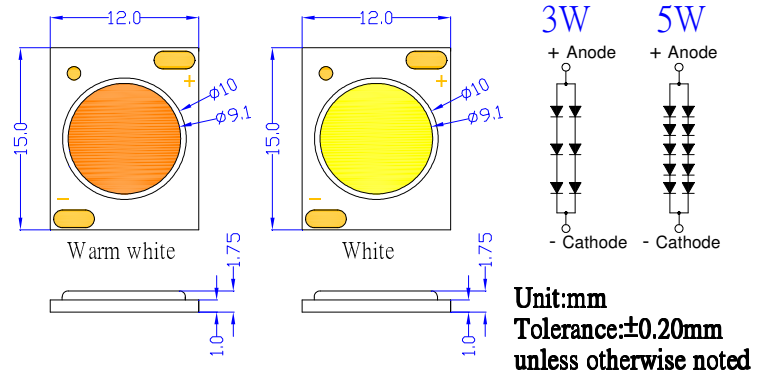
■Features

- Highest Luminous Flux
- Super Energy Efficiency
- Long Lifetime Operation
- Superior UV Resistance

■Applications

- Small Area Illuminations
- Back Lighting
- Other Lighting
- Indoor Lighting

■Outline Dimension



■Absolute Maximum Rating


(Ta=25°C)


Item	Sym bol	Value		Unit
		3W	5W	
DC Forward Current	I _F	400	400	mA
Pulse Forward Current*	I _{FP}	600	600	mA
Reverse Voltage	V _R	15	25	V
Power Dissipation	P _D	4,560	7600	mW
Operating Temperature	T _{opr}	-30 ~ +85		°C
Storage Temperature	T _{stg}	-40~ +100		°C
Manual Soldering Temperature	T _{sol}	350°C/5sec		-

*Pulse width Max 0.1ms, Duty ratio max 1/10

■Electrical -Optical Characteristics

(Ta=25°C)

3W	Part Number	Color			V _F (V)			I _R (μA)	Φ v(lm)*			CCT(K)			2θ1/2(deg)
					Min.	Typ.	Max.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Typ.
					I _F =300mA			V _R =15V	I _F =300mA						
	OSW41215E1E-2B3C	White	W		9	10.2	11.4	20	260	300	-	5500-7500			140
OSM51215E1E-2B3C	Warm white	M		9	10.2	11.4	20	230	260		2800-3200			140	

5W	Part Number	Color			V _F (V)			I _R (μA)	Φ v(lm)*			CCT(K)			2θ1/2(deg)
					Min.	Typ.	Max.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Typ.
					I _F =300mA			V _R =25V	I _F =300mA						
	OSW41215E1E-2B5C	White	W		15	17	19	20	460	500	-	5500-7500			140
	OSM51215E1E-2B5C	Warm white	W		15	17	19	20	430	460		2800-3200			140

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

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

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

■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	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

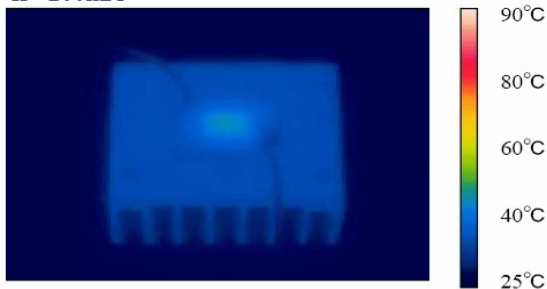
Above tested LED device is attached with adhesive sheet to the heatsink.

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

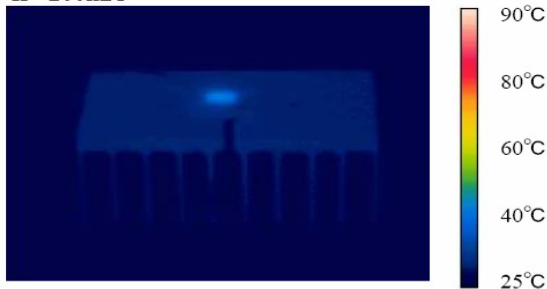
<Fig.2> Board A (surface area=10,300mm²)

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

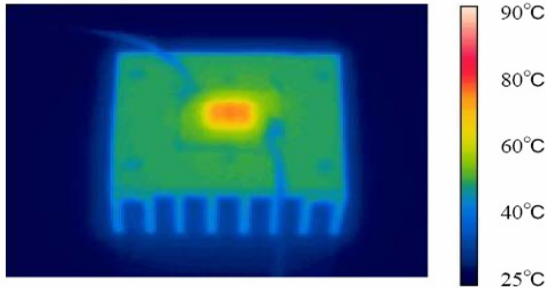
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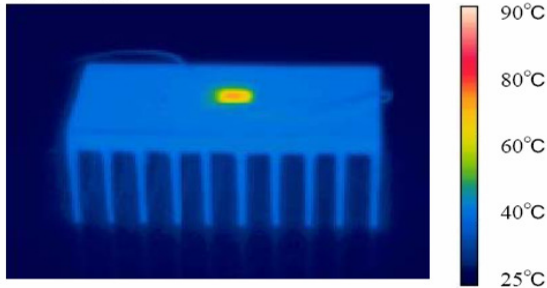
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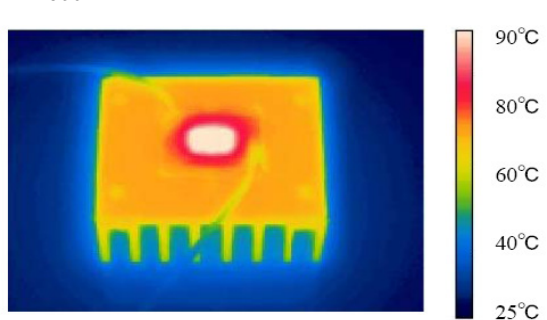
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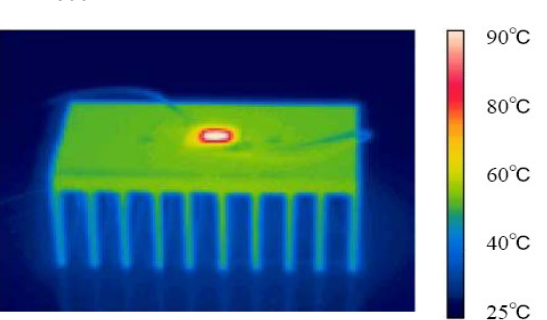
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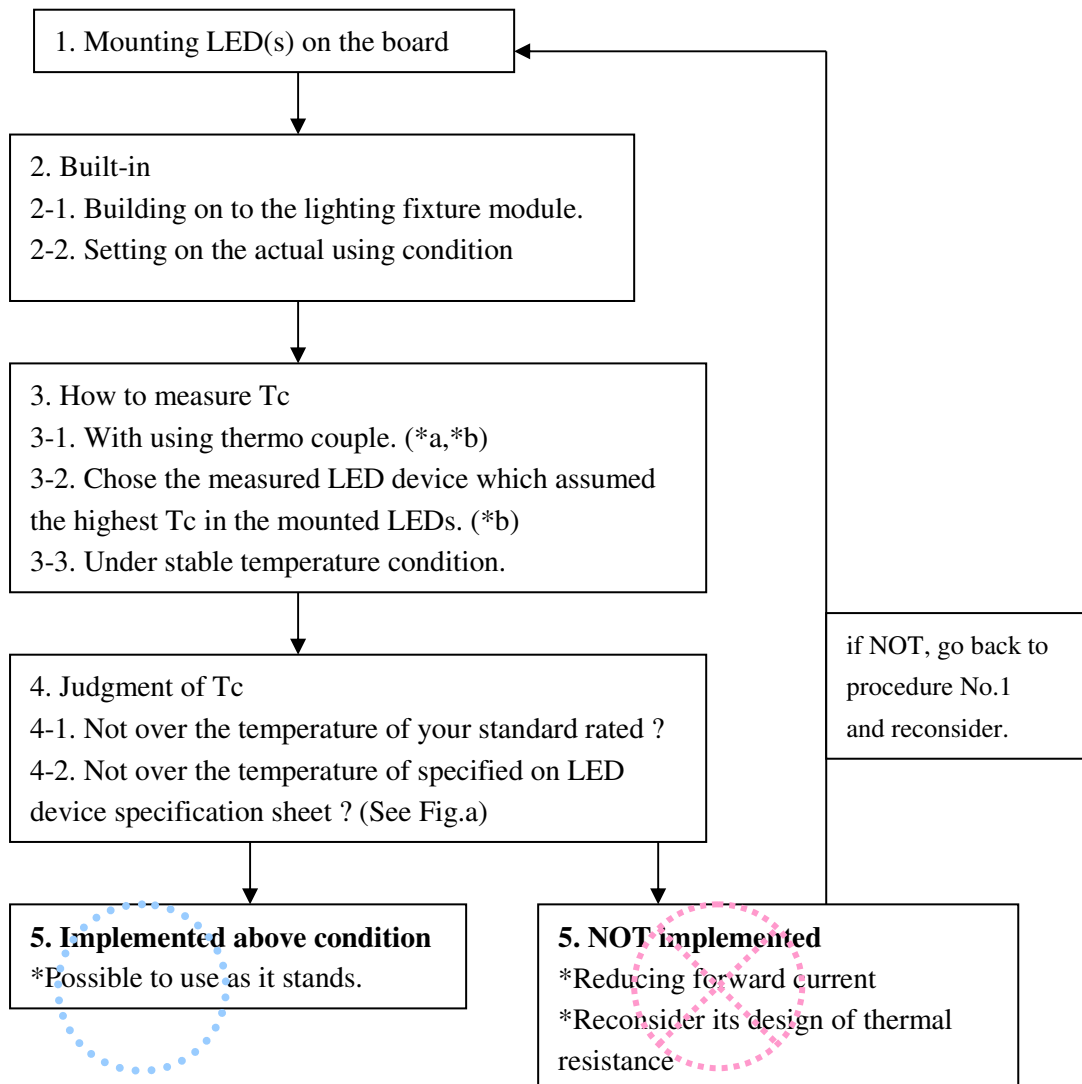
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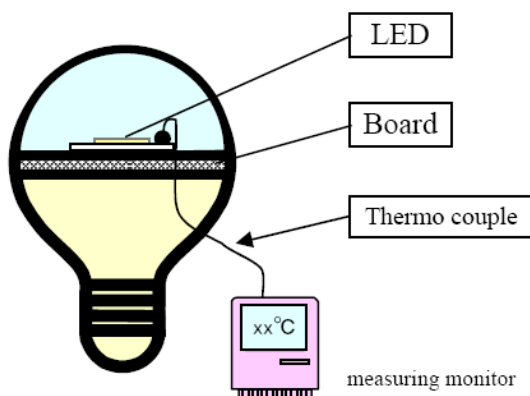
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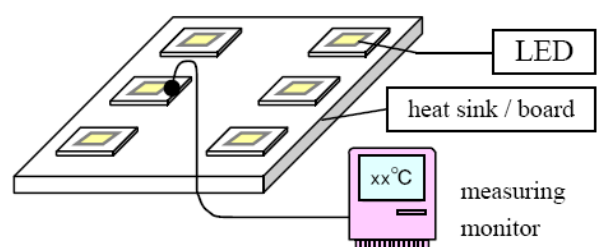
■ Heat design → Design flow chart



Use in the singular (*a)



Use in the plural (*b)



- When measuring Tc, measured LED should be built on to the lighting fixture module.
- Chose the measured LED device which assumed the highest Tc in the mounted LEDs.