

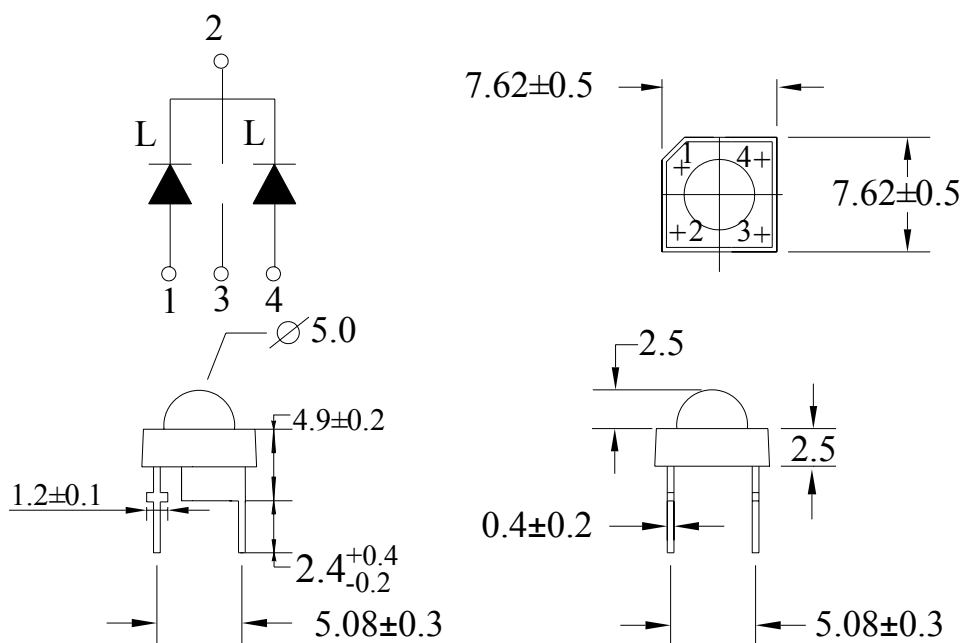
# SPECIFICATION

*PART NO. : MT4P060-WR-A*

HIGH POWER LED



## Package Dimensions



### Notes:

1. All dimensions are in mm.
2. Tolerance is  $\pm 0.25$ mm unless otherwise noted.

## Description

Part No.	LED Chip		Lens Color
	Material	Emitting Color	
MT4P060-WR-A	InGaN/Sapphire	Warm White	Water Clear

## Absolute Maximum Ratings at Ta=25

Parameter	Symbol	Rating	Unit
Power Dissipation	P <sub>D</sub>	108	mW
Reverse Voltage	V <sub>R</sub>	5	V
D.C. Forward Current	I <sub>f</sub>	30	mA
Peak Current(1/10Duty Cycle,0.1ms Pulse Width.)	I <sub>f</sub> (Peak)	100	mA
Operating Temperature Range	T <sub>opr.</sub>	-40 to +100	
Storage Temperature Range	T <sub>stg.</sub>	-40 to +100	
Soldering Temperature (1.6mm from body)	T <sub>slid.</sub>	Dip Soldering: 260 for 5 sec. Hand Soldering: 350 for 3 sec.	
Electric Static Discharge Threshold (HBM)	ESD	6000	V

The value are based on 1 die performance.

## Electrical and Optical Characteristics:

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Luminous Flux 2		v	If=20mA 1	9.0	10.0		lm
Forward Voltage 1		Vf	If=20mA 1		3.2	3.6	V
Correlated Colour Temperature 2	32	CCT	If=20mA 1	3200	-	3300	°K
	33			3300	-	3400	
	34			3400	-	3500	
	35			3500	-	3600	
	36			3600	-	3700	
	37			3700	-	3800	
Reverse Current 1		Ir	Vr=5V 1			50	μA
Color Rendering Index (Ra)	CCT: 3200-3500	CRI	If=20mA 1	68			
	CCT: 3500-3800			72			
Viewing Angle 2		2 1/2	If=20mA 1		60		deg

Notes: 1.The datas tested by IS tester.

2. Customer's special requirements are also welcome.

3. 1 For each die

4. 2 When all LED dies are operated simultaneously..

## Typical Electrical/Optical Characteristic Curves

(25 Ambient Temperature Unless Otherwise Noted)

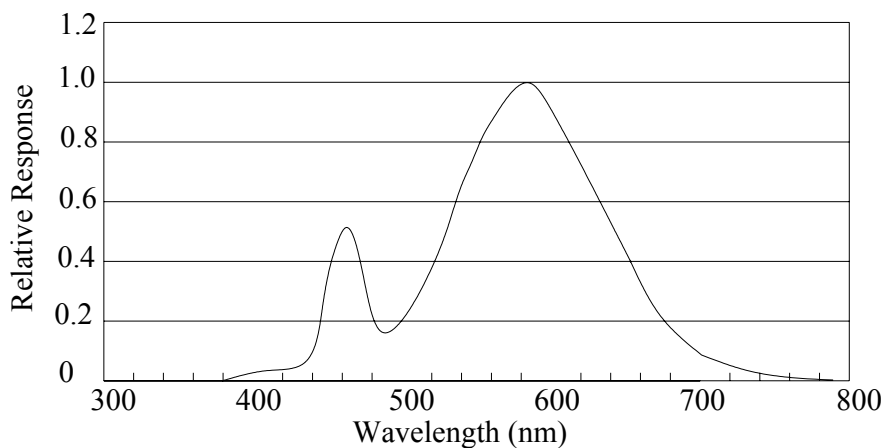
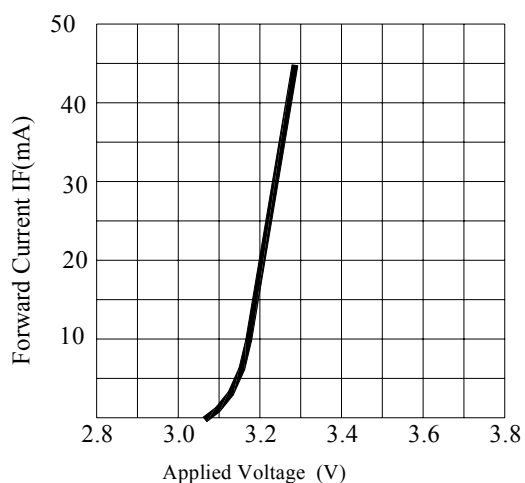
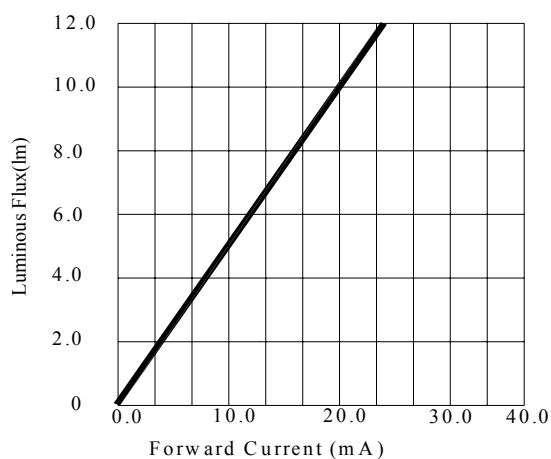


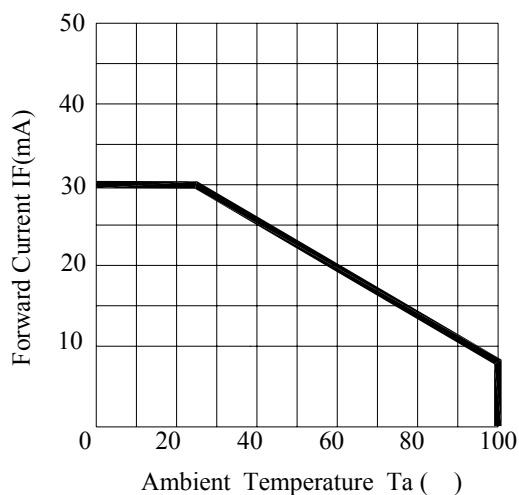
Fig.1 WHITE LED Spectrum VS. WAVELENGTH



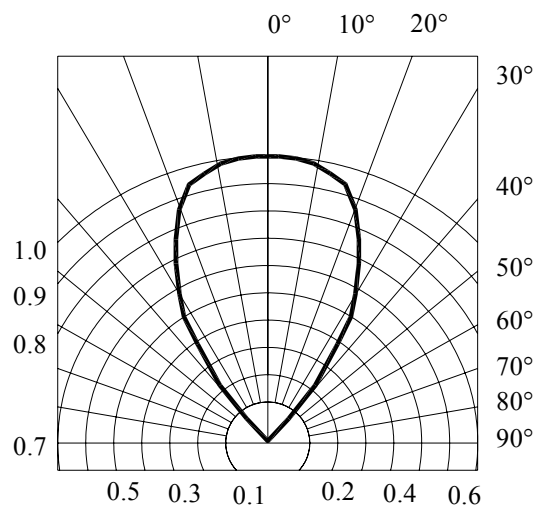
Forward Current VS. Applied Voltage



Forward Current VS. Luminous Intensity



Ambient Temperature VS. Forward Current



Radiation Diagram

## Precautions:

### TAKE NOTE OF THE FOLLOWING IN USE OF LED

#### 1. Temperature in use

Since the light generated inside the LED needs to be emitted to outside efficiently, a resin with high light transparency is used; therefore, additives to improve the heat resistance or moisture resistance (silica gel, etc) which are used for semiconductor products such as transistors cannot be added to the resin.

Consequently, the heat resistant ability of the resin used for LED is usually low; therefore, please be careful on the following during use.

Avoid applying external force, stress, and excessive vibration to the resins and terminals at high temperature. The glass transition temperature of epoxy resin used for the LED is approximately 120-130 °C.

At a temperature exceeding this limit, the coefficient of linear expansion of the resin doubles or more compared to that at normal temperature and the resin is softened.

If external force or stress is applied at that time, it may cause a wire rupture.

#### 2. Soldering

Please be careful on the following at soldering.

After soldering, avoid applying external force, stress, and excessive vibration until the products go to cooling process (normal temperature), <Same for products with terminal leads>

##### (1) Soldering measurements:

Distance between melted solder side to bottom of resin shall be 1.6mm or longer.

##### (2) Dip Soldering:

Pre-heat: 90 °C max. (Backside of PCB), Within 60 seconds.

Solder bath: 260±5 °C (Solder temperature), Within 5 seconds.

##### (3) Hand Soldering : 350 °C max. (Temperature of soldering iron tip), Within 3 seconds

#### 3. Insertion

Pitch of the LED leads and pitch of mounting holes need to be same

#### 4. Others

Since the heat resistant ability of the LED resin is low, SMD components are used on the same PCB, please mount the LED after adhesive baking process for SMD components. In case adhesive baking is done after LED lamp insertion due to a production process reason, make sure not to apply external force, stress, and excessive vibration to the LED and follow the conditions below.

Baking temperature: 120 °C max. Baking time: Within 60 seconds

If soldering is done sequentially after the adhesive baking, please perform the soldering after cooling down the LED to normal temperature.