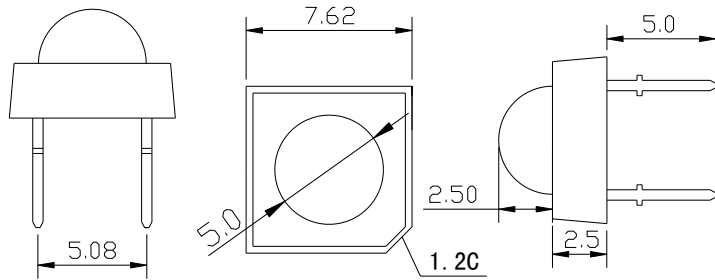
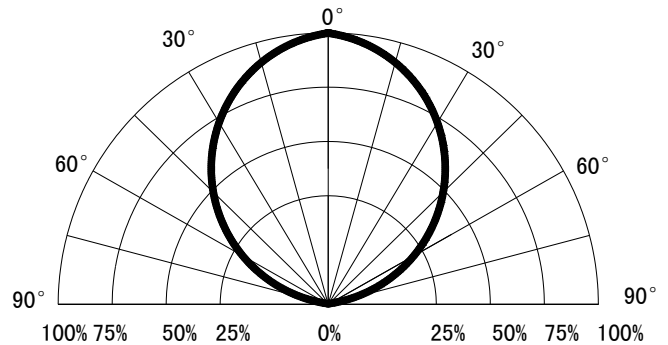


■ Package Dimensions



■ Far field Pattern



Notes:

1. All dimensions in mm tolerance is $\pm 0.2\text{mm}$ unless otherwise noted.
2. An epoxy meniscus may extend about 1.5mm down the leads.
3. Burr around bottom of epoxy may be 0.5mm max.

Relative Luminous Intensity vs. Radiation Angle

■ Descriptions

PART NO	Chip		Lens Color
	Material	Emitted Color	
5MM 食人鱼红色	InGaN/GaN	RED	WATER CLEAR

■ Absolute Maximum Ratings (Ta = 25°C)

Items	Symbol	Absolute maximum Rating	Unit
Forward Current(DC)	I_F	20	mA
Peak Forward Current*	I_{FP}	60	mA
Reverse Voltage	V_R	5	V
Operation Temperature	T_{opr}	-40 ~ +95	°C
Storage Temperature	T_{stg}	-40 ~ +100	°C
Lead Soldering Temperature	T_{sol}	Max.260°C for 5 sec Max. (3mm from the base of the epoxy bulb)	

*Pulse width $\leq 0.1\text{msec}$ duty $\leq 1/10$

■ Typical Electrical & Optical Characteristics (Ta = 25°C)

Items	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Dissipation	PD	$I_F = 20\text{mA}$	---	64	---	mW
Forward Voltage	V_F	$I_F = 20\text{mA}$	1.9	---	2.1	V
Reverse Current	I_R	$V_R = 5\text{V}$	---	---	5	μA
Dominant Wavelength	λ_D	$I_F = 20\text{mA}$	620	---	630	nm
Luminous Intensity	I_V	$I_F = 20\text{mA}$	1000	-----	1200	mcd
50% Power Angle	$2\theta_{1/2}$	$I_F = 20\text{mA}$	---	90	---	Deg

■ Typical Electrical/Optical Characteristics Curves
(Ta=25 ° Unless Otherwise Noted)

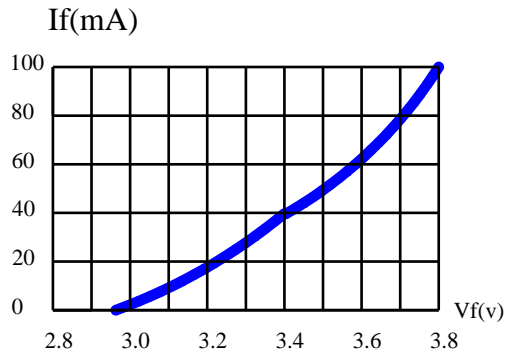


Fig. 1 Forward Current vs Forward Voltage

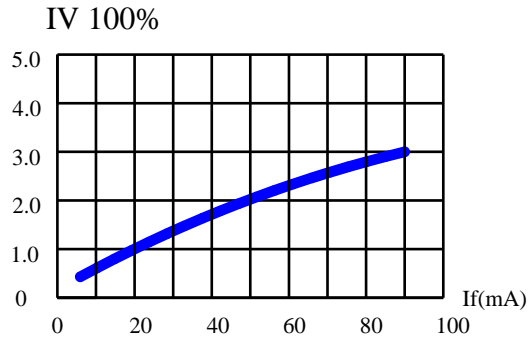


Fig. 2 Relative Luminous Intensity vs Forward Voltage

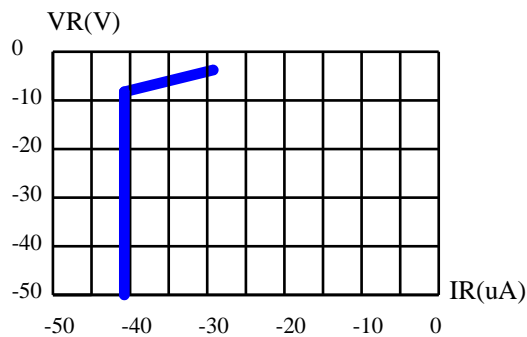


Fig. 3 Reverse Current vs Reverse Voltage

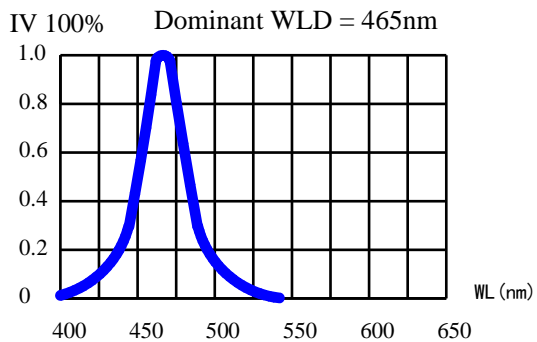


Fig. 4 Relative Luminous Intensity vs Wavelength

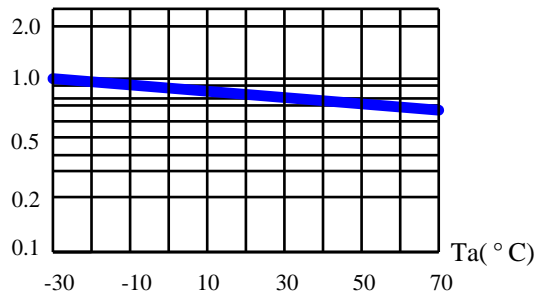


Fig. 5 Relative Luminous Intensity vs Ambient Temperature

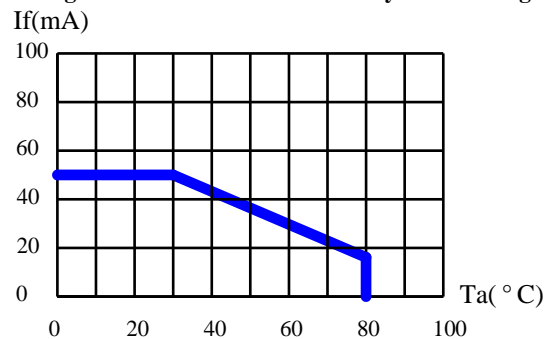


Fig. 6 Maximum Forward Current vs Ambient Temperature

Rank(IF=20mA)	Code		
Luminous Intensity(mcd)	L13	L14	L15
	800-1000	1000-1200	1200-1400
Forward Voltage(V)	V8	V9	V10
	1.9-2.1	2.1-2.3	2.3-2.5
Dominant Wavelength(nm)	B5	B6	B7
	610-620	620-630	630-640

*Tolerance of measurement of forward voltage is $\pm 0.1V$

*Tolerance of measurement of luminous intensity or flux is $\pm 15\%$.

*Tolerance of measurement of dominant wavelength is $\pm 1nm$.

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) Solder dip: Preheat: 90°C max. (Backside of PCB), Within 120 seconds

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

(3) Soldering iron : 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.