

**Features**

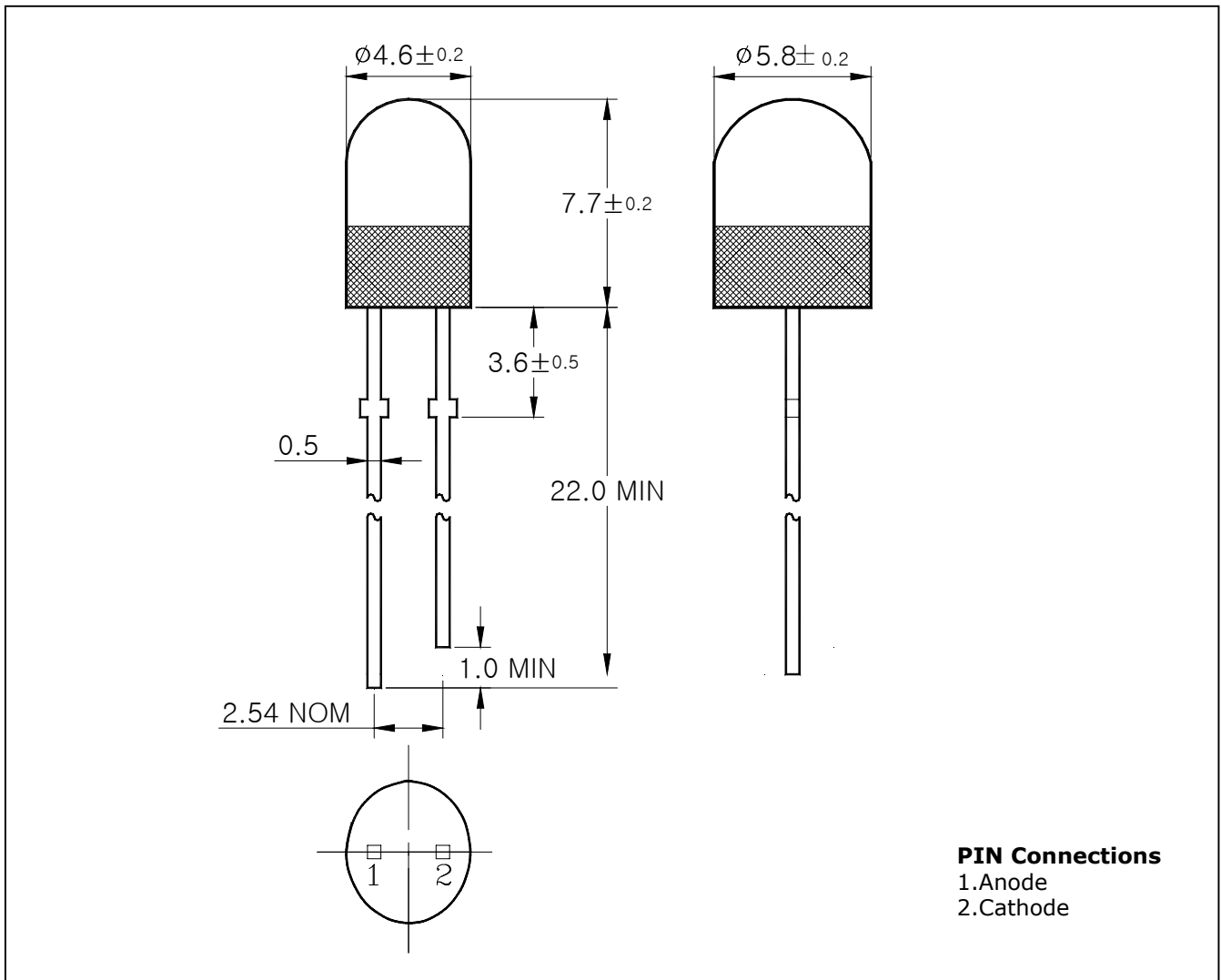
- Red colored transparency lens type
- Ellipse type(X=4.6mm, Y=5.8mm)
- Ultra luminosity
- Flangeless package
- High power LEDs
- Oval shape
- Lens Color : Red
- View Angle : 70 ° / 34 °

**Application**

- Full color displays
- Message boards
- Variable message signs(VMS)

**Outline Dimensions**

unit : mm

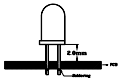


## Absolute maximum ratings

Characteristic	Symbol	Ratings	Unit
Power Dissipation	$P_D$	110	mW
Forward Current	$I_F$	40	mA
*1Peak Forward Current	$I_{FP}$	65	mA
Reverse Voltage	$V_R$	4	V
Operating Temperature	$T_{opr}$	-20 ~ 85	°C
Storage Temperature	$T_{stg}$	-25 ~ 100	°C
*2Soldering Temperature	$T_{sol}$	260°C for 5 seconds	

\*1.Duty ratio = 1/16, Pulse width = 0.1ms

\*2.Keep the distance more than 2.0mm from PCB to the bottom of LED package



## Electrical Characteristics

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	$V_F$	$I_F = 20\text{mA}$	1.6	2.1	2.5	V
Luminous Intensity	$I_V$	$I_F = 20\text{mA}$	68	155	350	mcd
Peak Wavelength	$\lambda_P$	$I_F = 20\text{mA}$	-	660	-	nm
Spectrum Bandwidth	$\Delta \lambda$	$I_F = 20\text{mA}$	-	20	-	nm
Reverse Current	$I_R$	$V_R = 4\text{V}$	-	-	10	uA
Half Angle	$\theta_{1/2}$	$I_F = 20\text{mA}$	-	$\pm 17$	-	deg
			-	$\pm 35$	-	

\*3.  $\theta_{1/2}$  is the off-axis angle where the luminous intensity is 1/2 the peak intensity

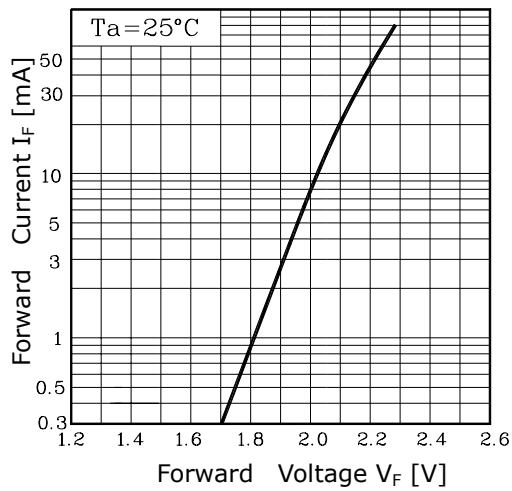
\*4. Luminous Intensity Maximum tolerance for each Grade Classification limit is  $\pm 18\%$

\*4. Luminous Intensity classification

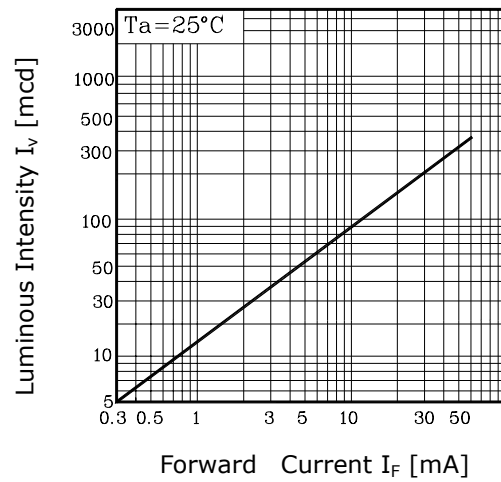
K	L	M	N
68~100	100~155	155~230	230~350

## Characteristic Diagrams

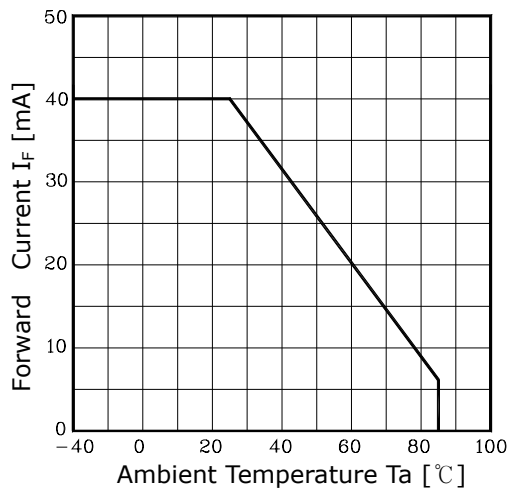
**Fig. 1**  $I_F - V_F$



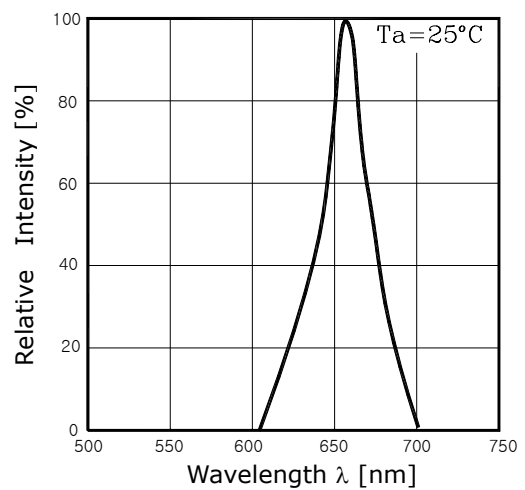
**Fig. 2**  $I_V - I_F$



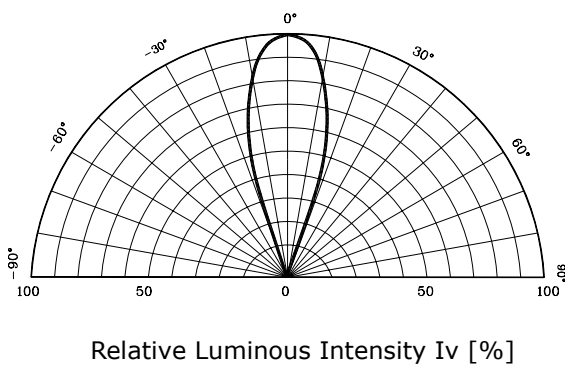
**Fig. 3**  $I_F - T_a$



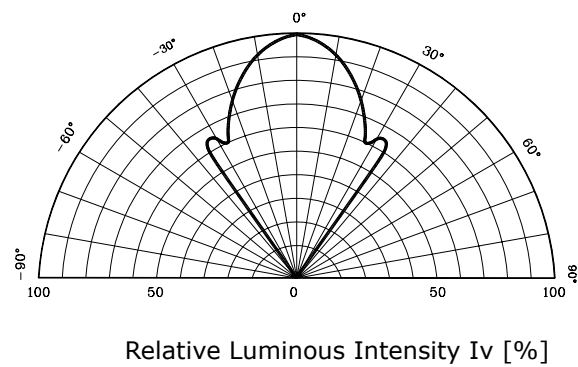
**Fig. 4** Spectrum Distribution



**Fig. 5-1** Radiation Diagram(X)



**Fig. 5-2** Radiation Diagram(Y)



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