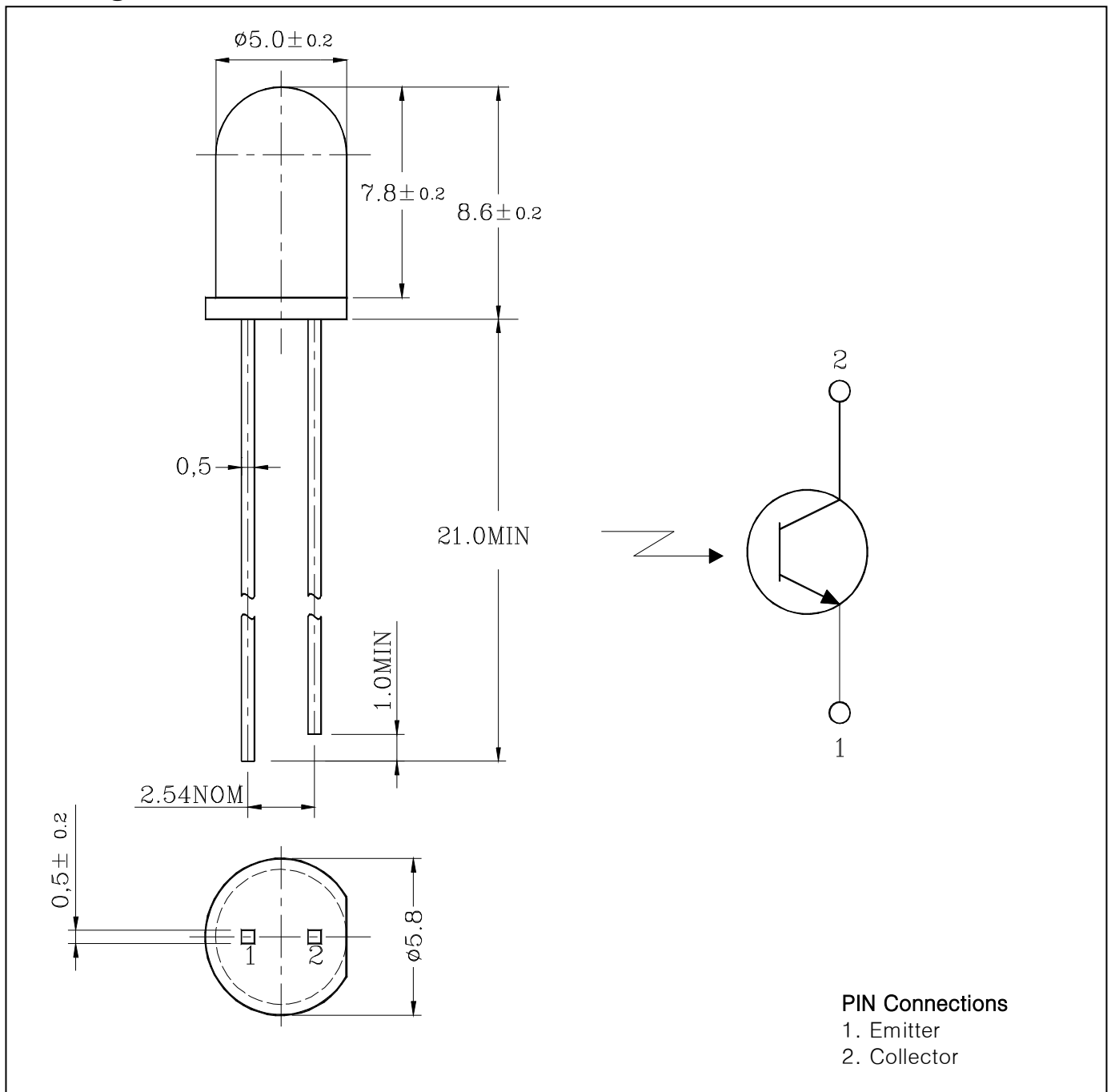


1. Features

- ▶ Lensed for high sensitivity
- ▶ $\phi 5\text{mm}$ all plastic mold type
- ▶ High reliability and stable characteristics
- ▶ Visible light cut-off type

2. Package Dimensions

Unit : mm



3. Absolute maximum ratings

Characteristic	Symbol	Ratings	Unit
Collector-Emitter Voltage	V_{CEO}	35	V
Emitter-Collector Voltage	V_{ECO}	6	V
Collector Current	I_C	20	mA
Collector Power Dissipation	P_D	75	mW
Operating Temperature	T_{opr}	-25~85	°C
Storage Temperature	T_{stg}	-30~100	°C
*1 Soldering Temperature	T_{sol}	260 °C for 5 seconds	

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

4. Electrical Characteristics

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Current Dark Current	I_{CEO}	$V_{CE0}=10V, E_e=0$	–	0.05	0.5	μA
*1 Light Current	I_{CEL}	$V_{CE}=5V, E_e \doteq 1mW/cm^2$	4	–	7	mA
			7	–	10	
			10	–	12	
Current-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=0.5mA, E_e \doteq 1mW/cm^2$	–	0.2	–	V
Switching Time	Rise Time	$V_{CC}=10V, I_C=1mA$ $R_1=100\Omega$	–	2.5	–	μs
	Fall Time			3.8		
Spectral Sensitivity	λ	–	750~1050			nm
Peak Sensitivity Wavelength	λ_P	–	–	880	–	nm
Half angle	$\theta_{1/2}$	$I_F=20mA$	–	± 20	–	deg

*1. Tolerance = $\pm 30\%$

5.Characteristic Diagrams (typical)

Fig.1 I_{CEL} - E_e

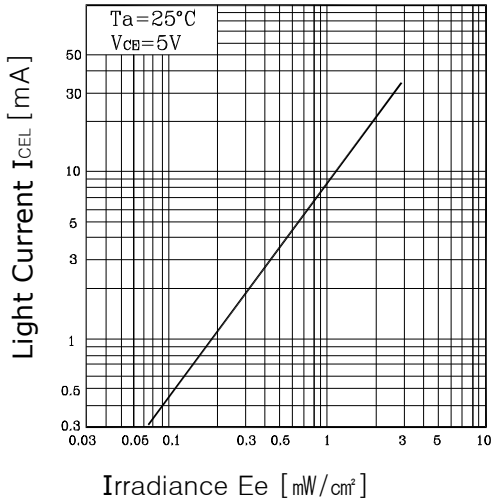


Fig.2 I_{CEL} - V_{CE}

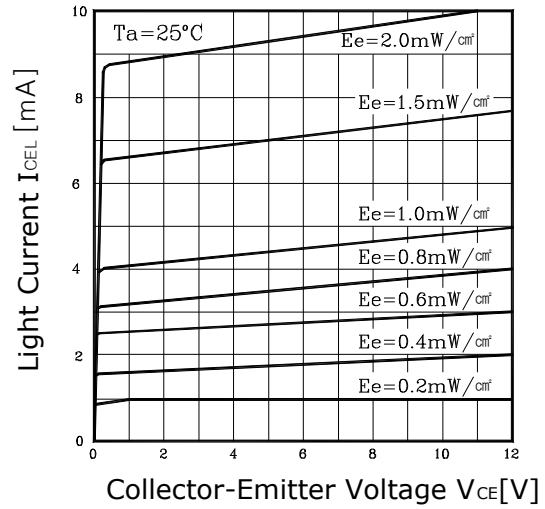


Fig.3 P_D - T_a

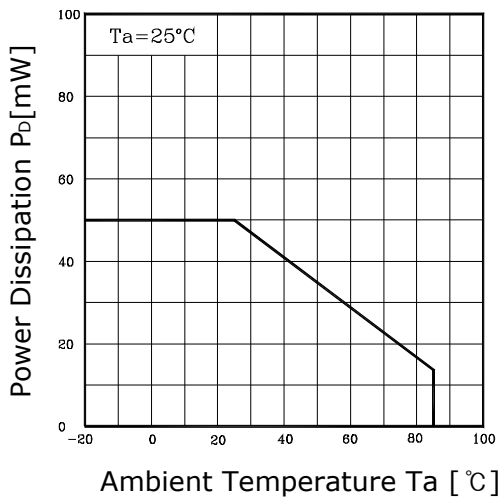


Fig.4 I_{CE0} - T_a

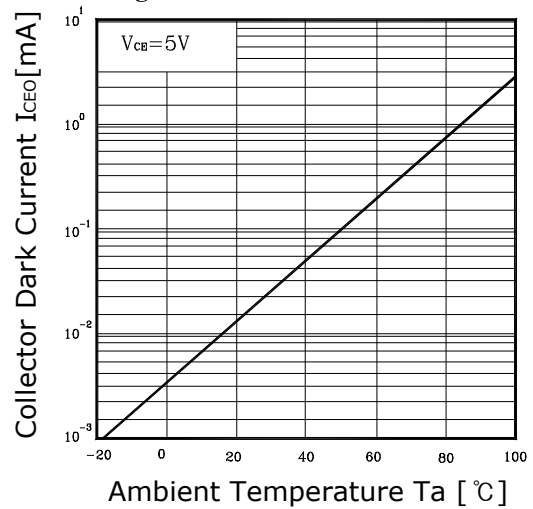


Fig.5 Spectrum Sensitivity

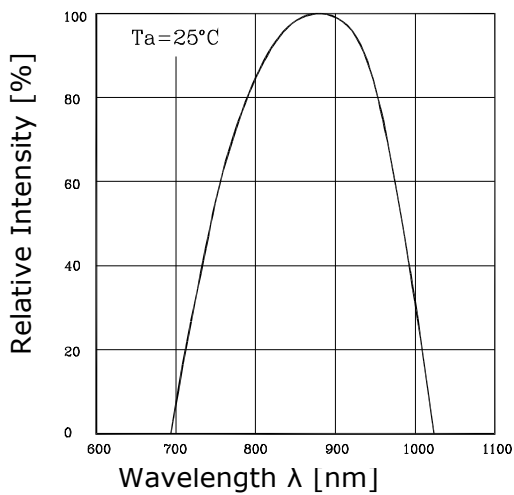
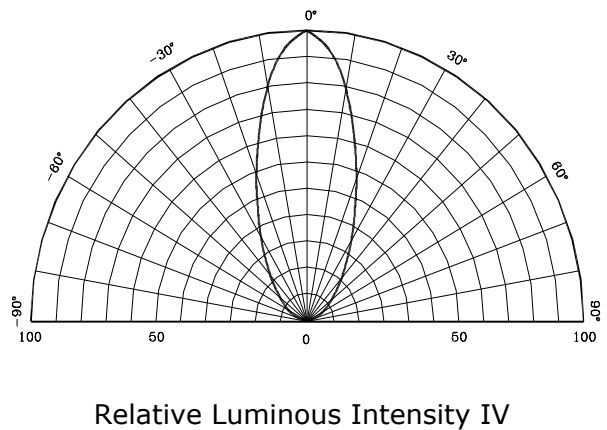
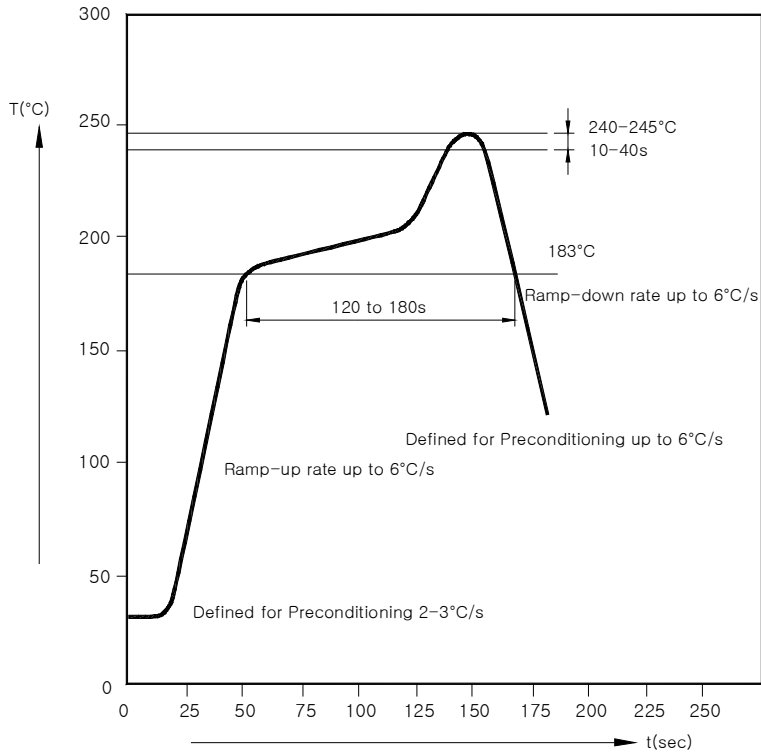


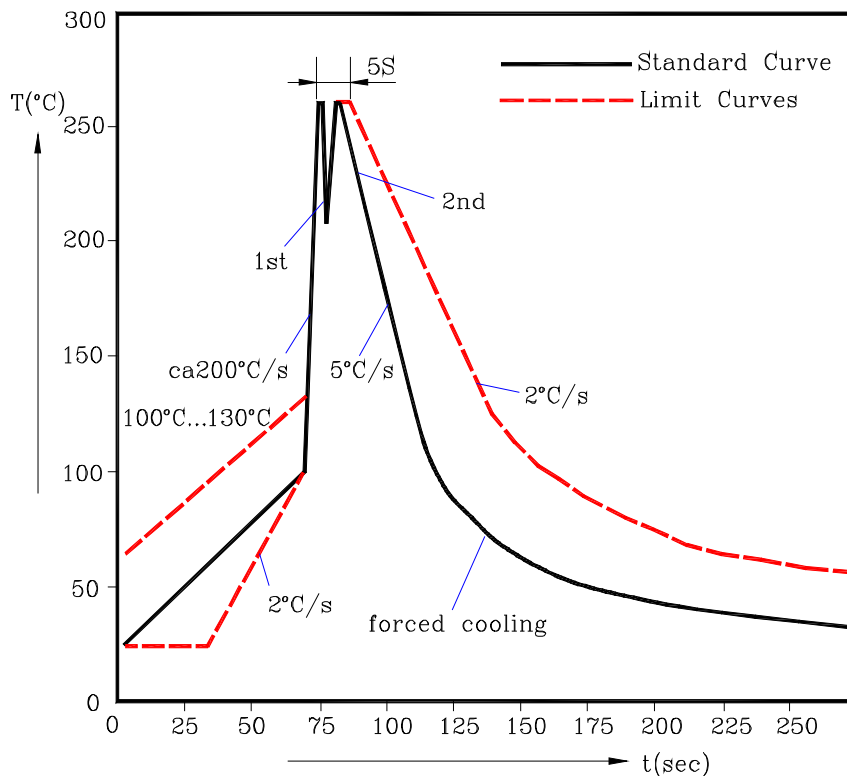
Fig.6 Sensitivity Diagram



6-1. Reflow Soldering



6-2. TTW Soldering



7. Caution on usage

- 7-1. Static electricity and surge will damage the LEDs. It is recommended to take measures to prevent ESD problem (for example, grounding equipment and the human body, using grounded soldering iron and so on).
- 7-2. Be careful never to exceed, even momentarily, the absolute maximum ratings specified in the data sheet.
- 7-3. Ciel Light will not be held responsible for any damage to the user that may result from accidents or any other reasons during operation of the user's unit if use to exceed the absolute maximum ratings, or not keep the matters that demand special attention.
- 7-4. Store and use where there is no corrosive gas.

8. Warranty period : One year after delivery of goods.