

## 1. Features

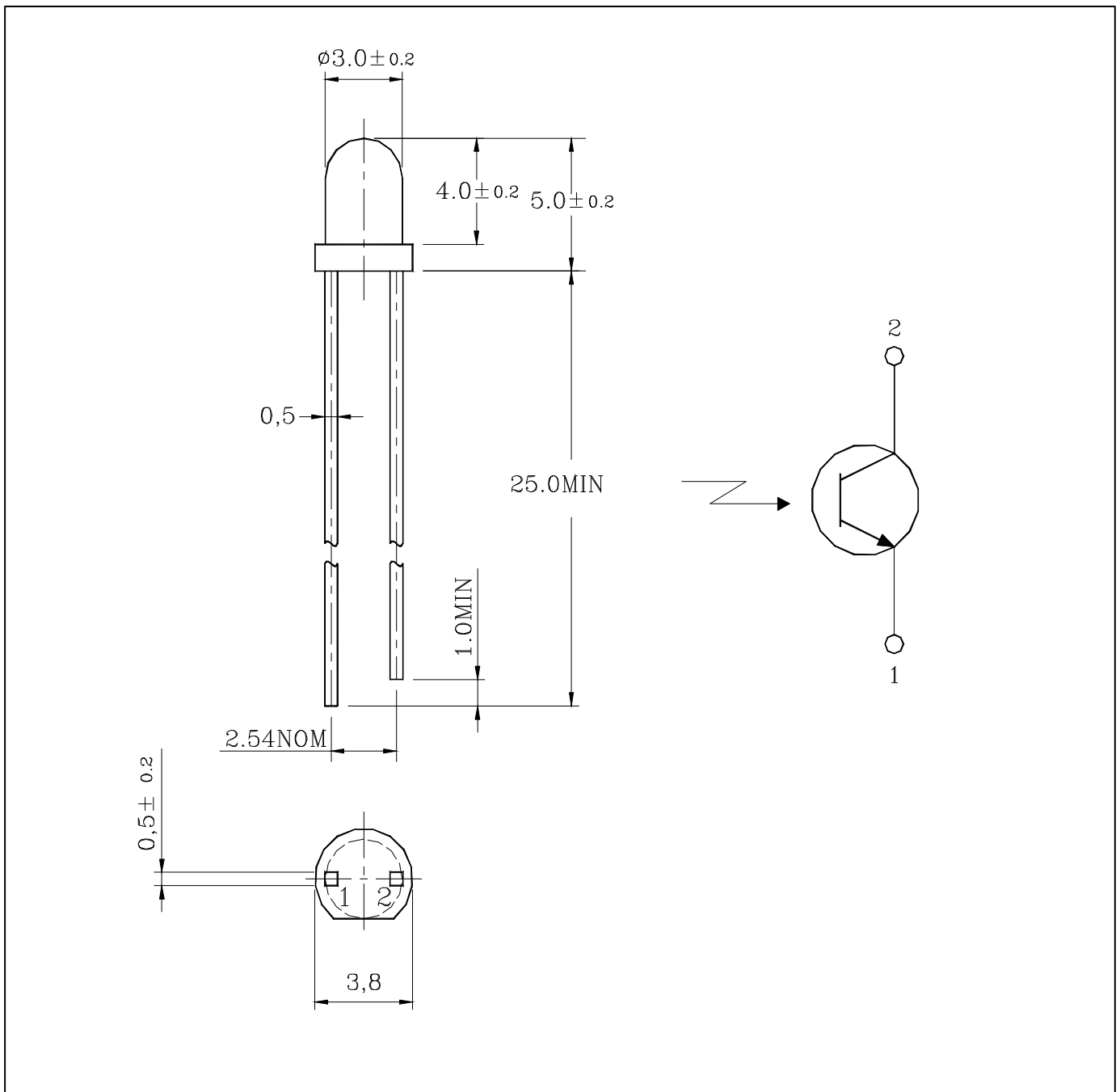
- ▶  $\phi 3\text{mm}$ (T-1) all plastic mold type
- ▶ Colorless transparency lens

## 2. Applications

- ▶ VCR, Camcorders
- ▶ Floppy disk drivers
- ▶ Optical detectors

## 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	

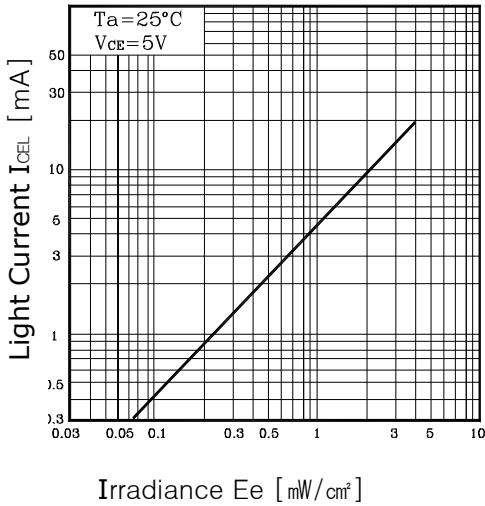
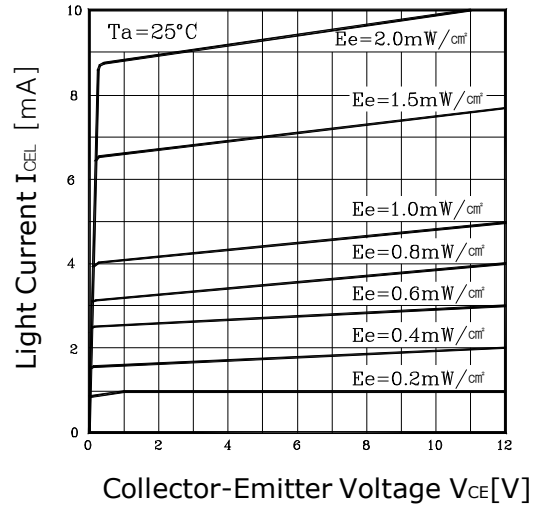
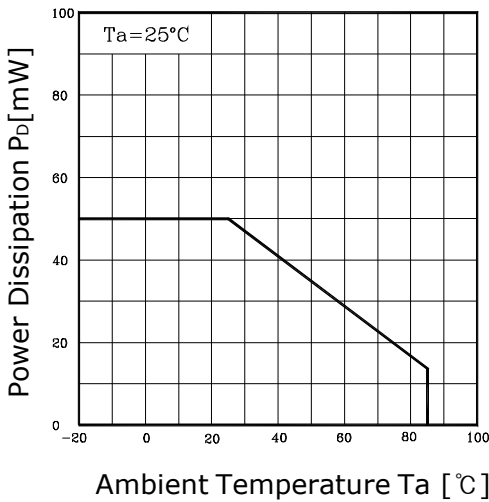
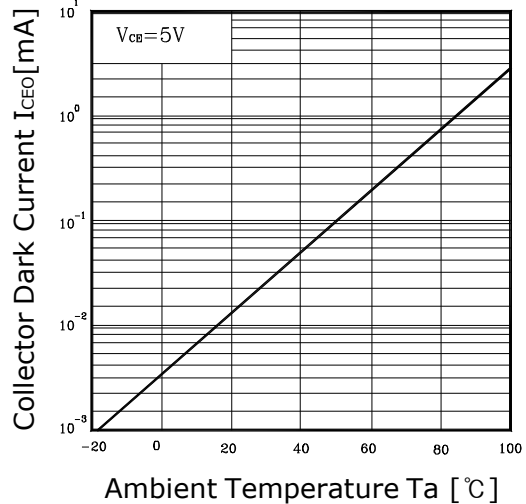
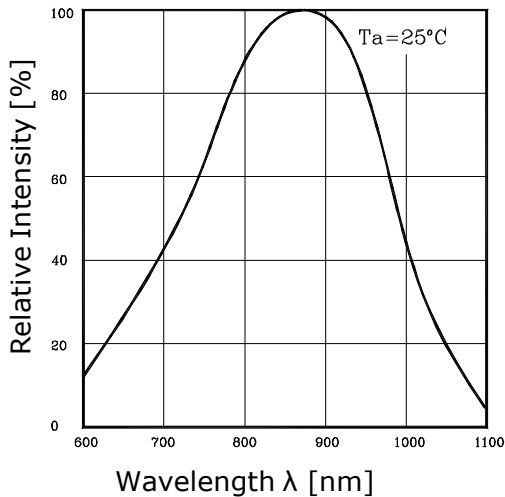
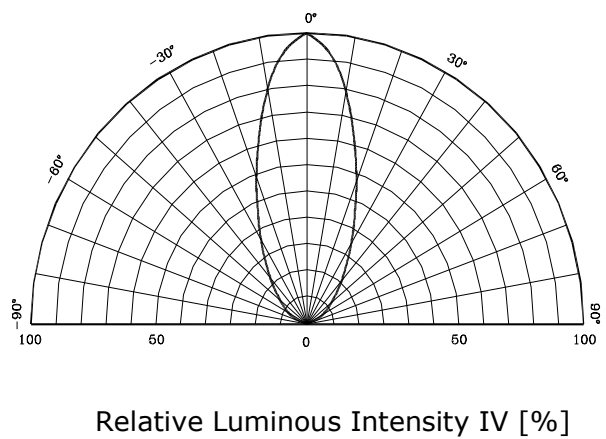
\*1. Keep the distance more than 2.0mm from PCB to the bottom of LED package

### 4. Electrical Characteristics

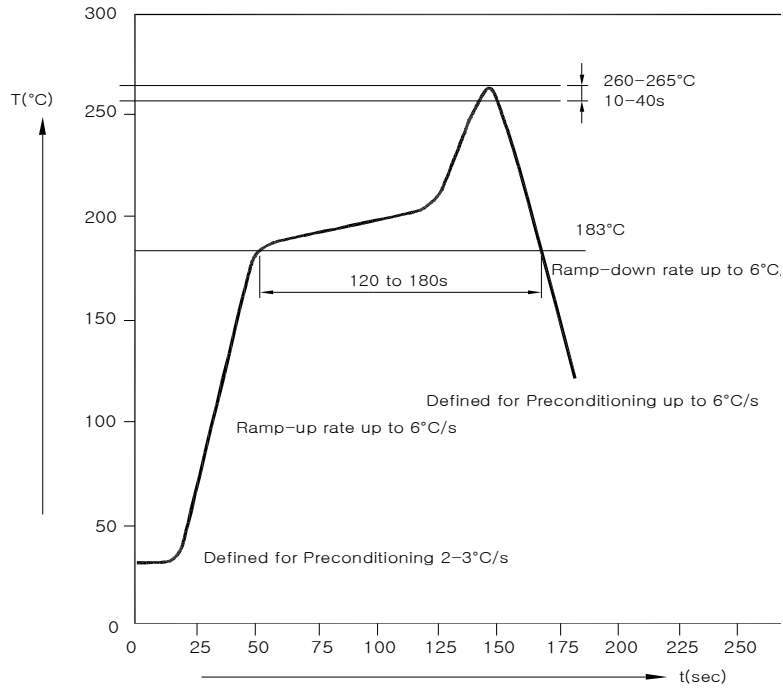
Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Current Dark Current	$I_{CEO}$	$V_{CE0}=10V, E_e=0$	–	0.05	0.5	$\mu A$
*1 Light Current	$I_{CEL}$	$V_{CE}=5V, E_e \doteq 1mW/cm^2$	5	–	10	mA
Current-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=0.5mA, E_e \doteq 1mW/cm^2$	–	0.2	–	V
Switching Time	Rise Time	$V_{CC}=10V, I_C=1mA$ $R_i=100\Omega$	–	2.5	–	$\mu s$
	Fall Time			$t_f$		
Spectral Sensitivity	$\lambda$	–	450~1050			nm
Peak Sensitivity Wavelength	$\lambda_P$	–	–	880	–	nm
Half angle	$\theta_{1/2}$	$I_F=20mA$	–	$\pm 20$	–	deg

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

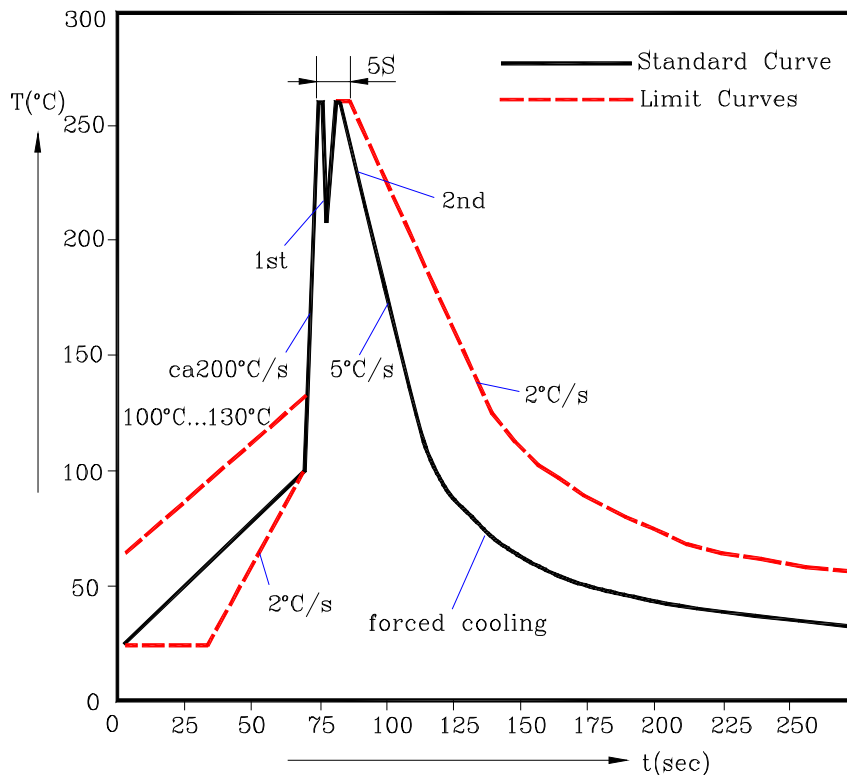
## 5.Characteristic Diagrams

**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.
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