Data Sheet

Customer: _____

Part No: CLT3811

Sample No: _____

Description: 3Ø Lamp Photo Transister

Item No: _____

Customer			
Check	Inspection	Approval	Date

CLT3811

1.Features

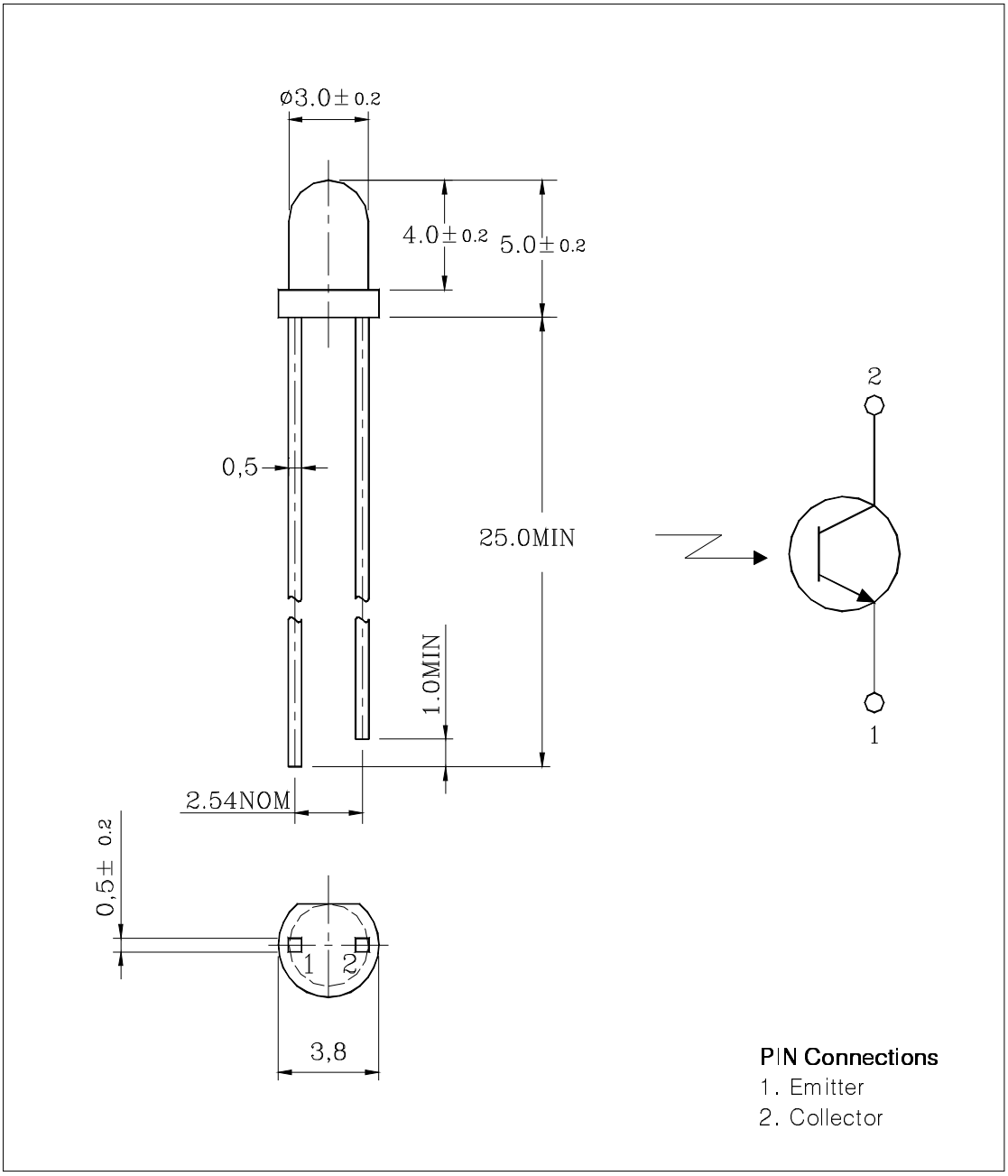
- ϕ3mm(T-1) all plastic mold type
- Visible light cut-off type

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	℃
Storage Temperature	T_{stg}	-30~100	℃
*1 Soldering Temperature	T_{sol}	260℃ 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_{CEO}=10V, E_e=0	-	0.05	0.5	μA
*1 Light Current		I_{CEL}	V_{CE}=5V, E_e≒1mW/㎠	2	-	4	mA
				4	-	7	
				7	-	10	
				10	-	12	
Current-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C=0.5mA, E_e≒1mW/㎠	-	0.2	-	V
Switching Time	Rise Time	t_r	V_{CC}=10V, I_C=1mA R_1=100Ω	-	2.5	-	μs
	Fall Time	t_f			3.8		
Spectral Sensitivity		λ	-	750~1050			nm
Peak Sensitivity Wavelength		λ_P	-	-	880	-	nm

*1. Tolerance = ±30%

5.Characteristic Diagrams (typical)

Fig.1 I_{CEL} – E_e

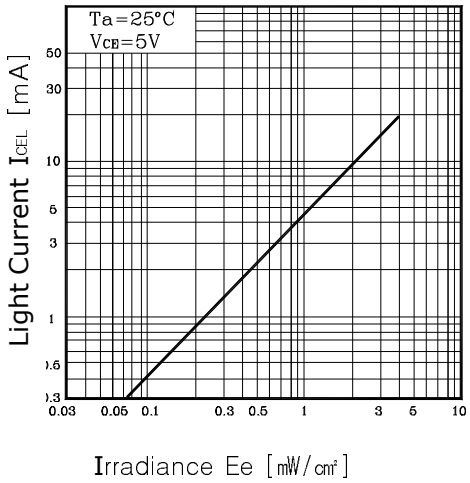


Fig.2 I_{CEL} – V_{CE}

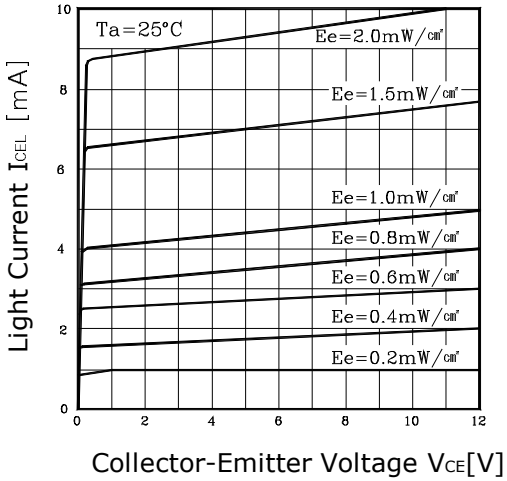


Fig.3 P_D – Ta

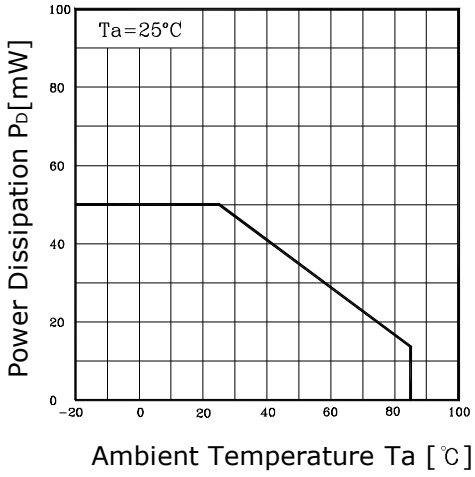


Fig.4 I_{CEO} – Ta

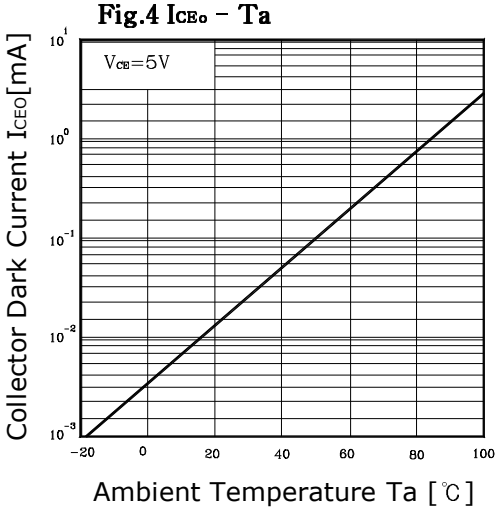


Fig.5 Spectrum Sensitivity

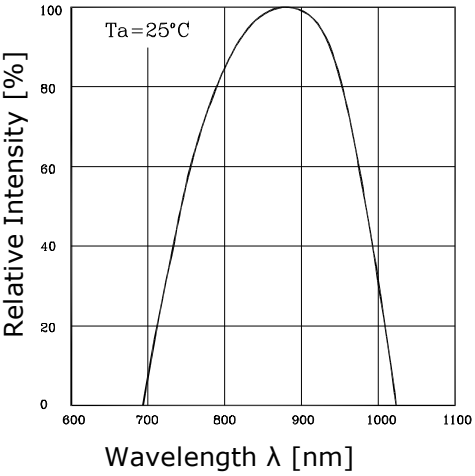
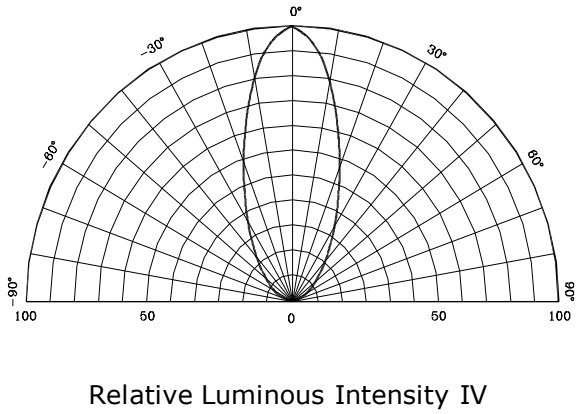


Fig.6 Sensitivity Diagram



6-1. Soldering counditions

(1) The LEDs can be soldered in place using the reflow soldering method.

Ciellight does not make any guarantee on the LEDs after they have been assembled using the dip soldering method.

(2) Recommended soldering conditions

Reflow Soldering			Hand Soldering	
	Lead Solder	Lead-free Solder		
Pre-Heat	120~150℃	180~200℃	Temperature	350℃ Max.
Pre-Heat Time	120sec Max.	120sec Max.	Soldering Time	3sec Max.
Peak Temperature	240℃ Max.	260℃ Max.		(one time only)
Soldering Time	5sec Max.	5sec Max.		
Condition	refer to profile ①	refer to profile ②		

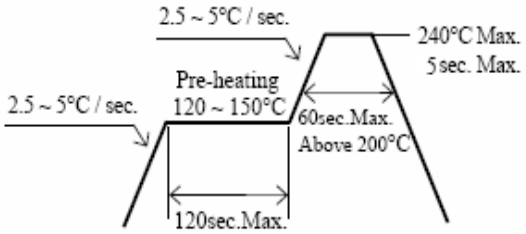
* Although the recommended soldering conditions are specified in the above table, reflow soldering at the lowest possible temperature is desirable for the LEDs.

* A rapid-rate process is not recommended for cooling the LEDs down from the peak temperature.

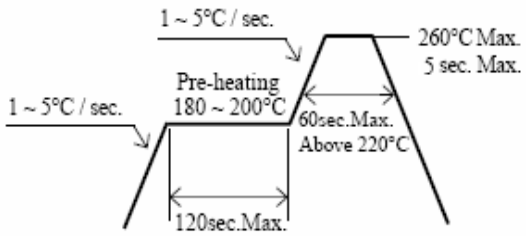
[Temperature-Profile (surface of circuit board)]

Use the conditions shown to the following figures.

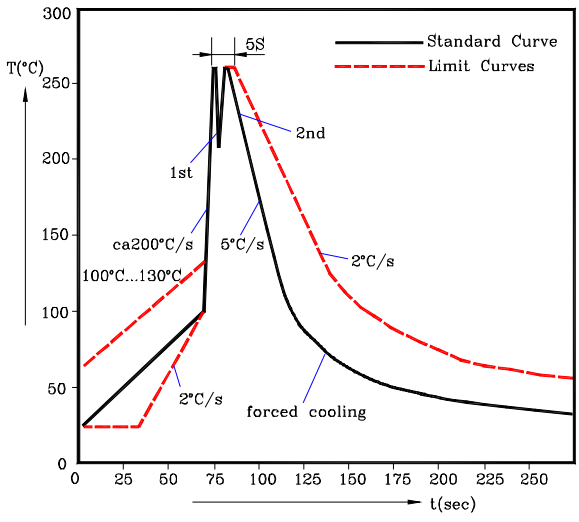
<① : Lead Solder>



<② : Lead-free Solder>



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. Ciellight 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.

7-5. While the device is operational across the temperature range, functionality will with temperature. Specifications are stated only.

7-6. Stresses beyond those listed under "absolute maximum ratings" may causepermanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under "recommended operating conditions" is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

8. Warranty period : One year after delivery.