

1. Features

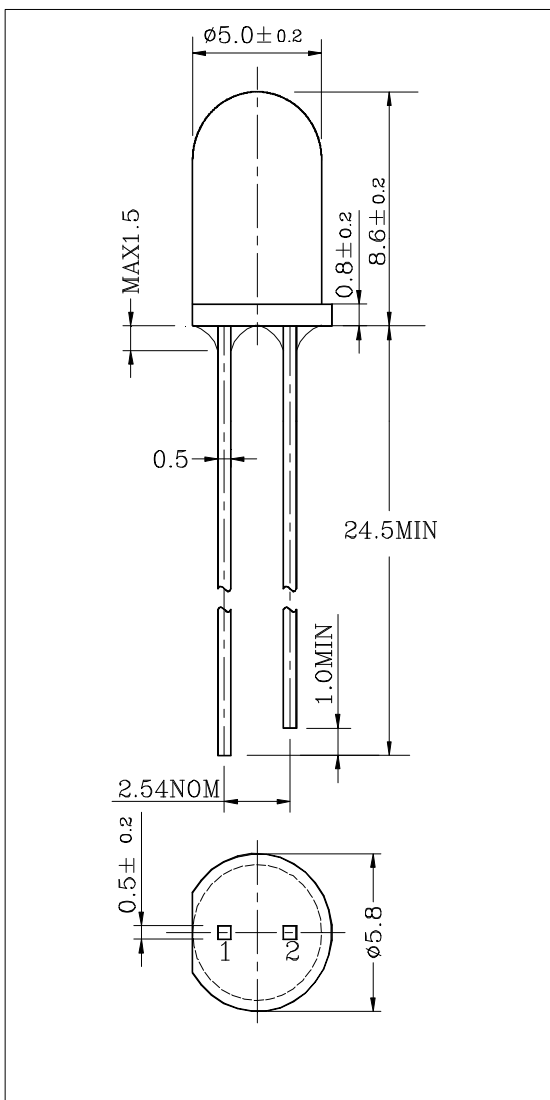
- ▶ Very highly efficient GaAs Chip.
- ▶ High reliability.
- ▶ High pulse handling capability.
- ▶ Good spectral match to silicon photo detectors.

2. Applications

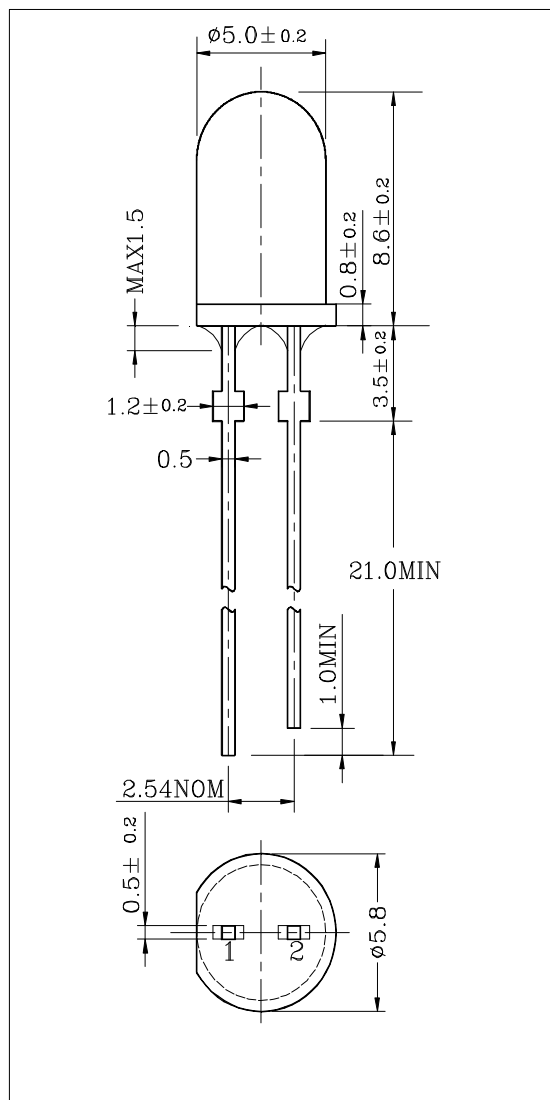
- ▶ IR remote control for HIFI and TV sets, video tape recorders, dimmers.
- ▶ Light-reflection switches(max.500kHz).

3. Package Dimensions

Unit : mm



W87I5315-C



W87I5315-C(B)

PIN Connections

1. Anode
2. Cathode

4. Absolute maximum ratings

Ta=25℃

Item	Symbol	Ratings	Unit
Forward Current	I_F	100	mA
Pulse Forward Current *1	I_{FP}	1	A
Power Dissipation	P_D	180	mW
Reverse Voltage	V_R	5	V
Operating Temperature	T_{opr}	-30~85	℃
Storage Temperature	T_{stg}	-30~100	℃
Soldering Temperature *2	T_{sol}	260±5℃	℃

*1. Pulse Width=0.1msec, Duty ratio = 1/16

*2. 5 sec at location 2.0mm away from the base of the epoxy bulb.

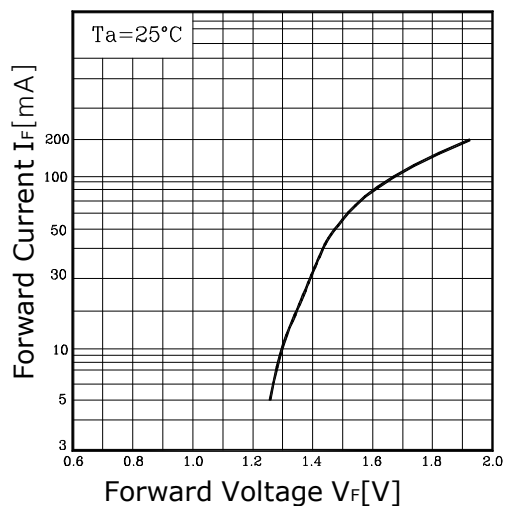
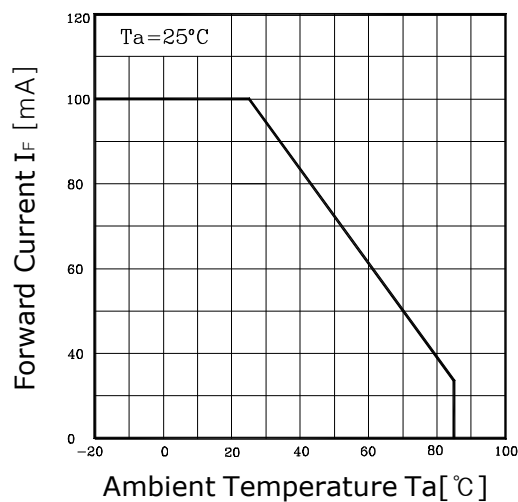
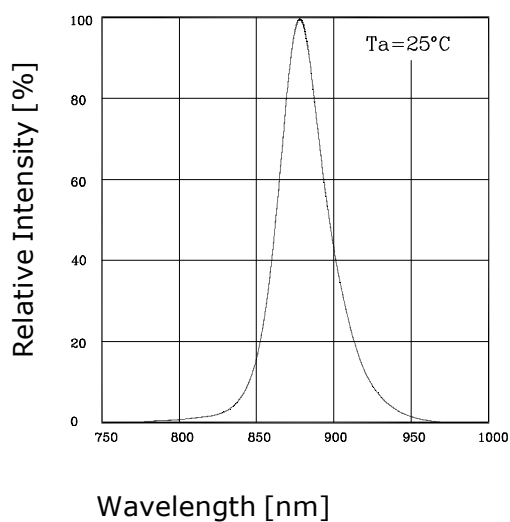
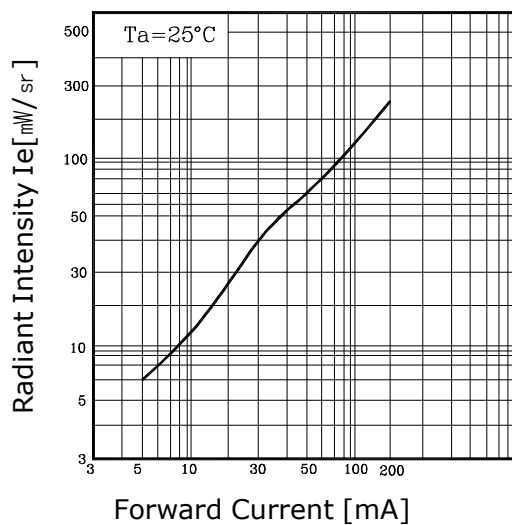
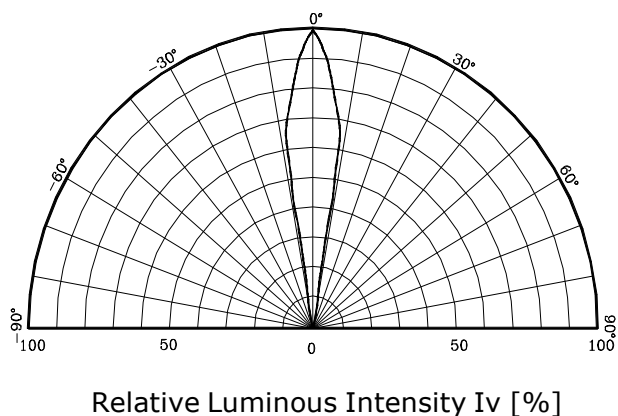
5. Electrical Characteristics

Ta=25℃

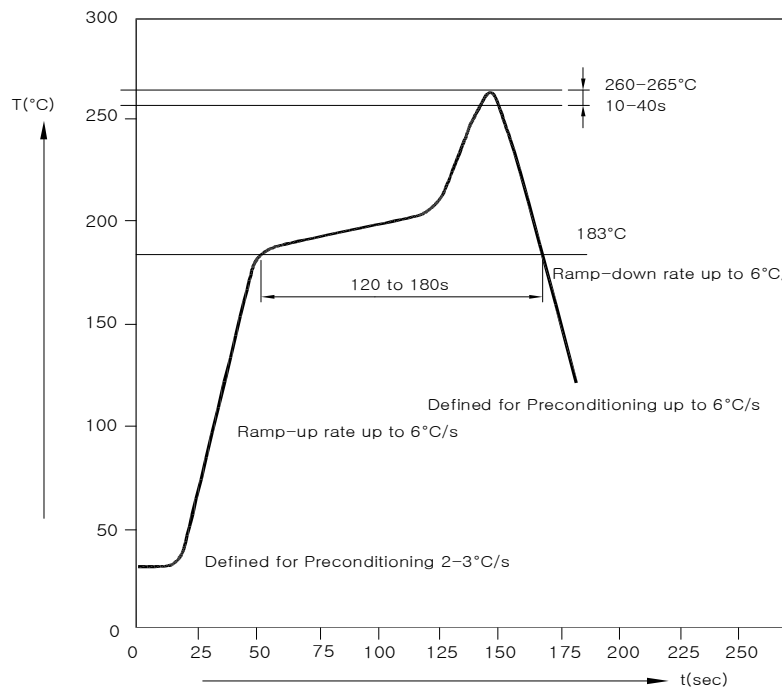
Item	Symbol	Test Condition	Min	Typ	Max	Unit
Forward Voltage	V_F	$I_F = 50\text{mA}$	-	1.5	1.7	V
Reverse Current	I_R	$V_R = 5[\text{V}]$	-	-	10	μA
Radiant Intensity *3	I_e	$I_F = 50\text{mA}$	56	-	80	mW/sr
			-	-	-	
			80	-	110	
Peak Wavelength	λ_P	$I_F = 50\text{mA}$	-	876	-	nm
Spectrum Radiation Band width	$\Delta\lambda$	$I_F = 50\text{mA}$	-	42	-	nm
Viewing Angle	$\theta_{1/2}$	$I_F = 50\text{mA}$	-	±20	-	deg

*3. This Value includes ±20% tolerance caused by Luminous Intensity measurement method of Ciel Light Co.LTD

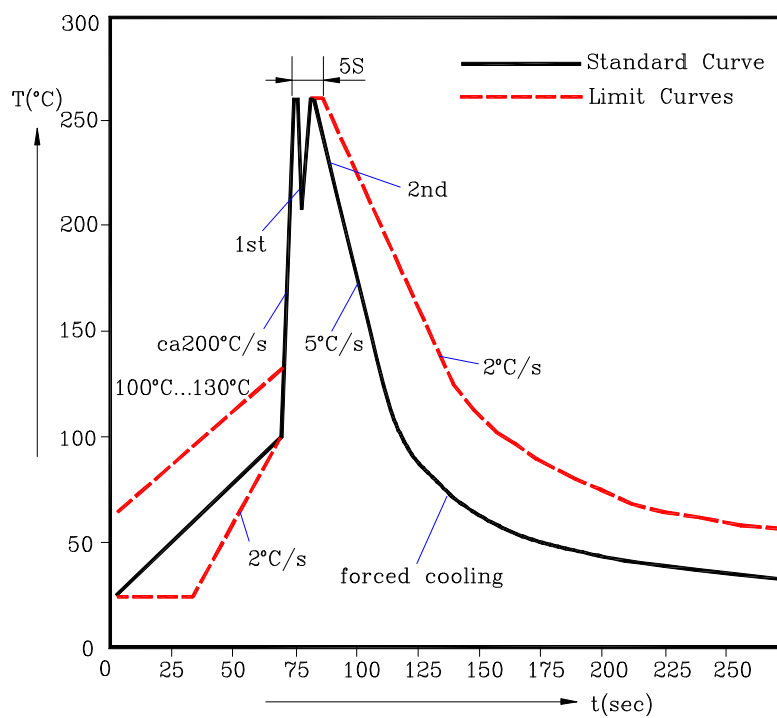
6.Characteristic Diagrams(Typical)

Fig.1 $I_F - V_F$

Fig.2 $I_F - T_a$

Fig.3 Spectrum Distribution

Fig.4 $I_e - I_F$

Fig.5 Radiation Characteristics


7-1. Reflow Soldering



7-2. TTW Soldering



8-1. The Reliability criteria of LED Lamps

Item	Symbol	Test Condition	Limit	
			Min	Max
Forward Voltage	V_F	$I_F=50\text{mA}$	-	U.S.L. $\times 1.1$
Reverse Current	I_R	$V_R=5\text{V}$	-	U.S.L. $\times 2.0$
Luminous Intensity	I_v	$I_F=50\text{mA}$	L.S.L. $\times 0.7$	-

8-2. Results of Reliability Test

NO	Item	Test Condition	Test Hours/ Cycles	Sample Size	Ac/Re
1	Solder Heat	Temp : $260^\circ\text{C}\pm 5^\circ\text{C}$	5 SEC	22 PCS	0/1
2	Temperature Cycle	H : $+100^\circ\text{C}$ 30min 5 min L : -40°C 30min	100 CYCLE	22 PCS	0/1
3	Thermal Shock	H : $+100^\circ\text{C}$ 5min 10 sec L : -40°C 5min	100 CYCLE	22 PCS	0/1
4	High Temperature Storage	Temp : 85°C	1000 HRS	22 PCS	0/1
5	Low Temperature Storage	Temp : -30°C	1000 HRS	22 PCS	0/1
6	Life Test	$T_a=RT$, $I_F = 50\text{ mA}$	1000 HRS	22 PCS	0/1
7	High Temperature / High Humidity	$T_a=85^\circ\text{C}$ / RH=85%	1000 HRS	22 PCS	0/1

9. Caution on usage

- 9-1. 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).
- 9-2. Be careful never to exceed, even momentarily, the absolute maximum ratings specified in the data sheet.
- 9-3. 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.
- 9-4. Store and use where there is no corrosive gas.
- 9-5. While the device is operational across the temperature range, functionality will with temperature. Specifications are stated only.
- 9-6. Stresses beyond those listed under "absolute maximum ratings" may cause permanent 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.

10. Warranty period : One year after delivery.
