

Features

- . High reliability
- . High radiant intensity
- . Peak wavelength $\lambda_p=850\text{nm}$
- . 2.54mm Lead spacing
- . Low forward voltage
- . The product itself will remain within RoHS compliant version.

Descriptions

- . YuanYue's Infrared Emitting Diode is a high intensity diode, molded in a water clear plastic package.
- . The device is spectrally matched with phototransistor, photodiode and infrared receiver module.

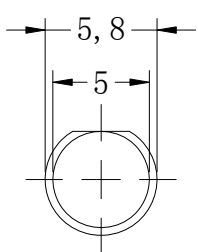
Applications

- . Free air transmission system
- . Opto electronic switch
- . Infrared applied system
- . Smoke detector

Device Selection Guide

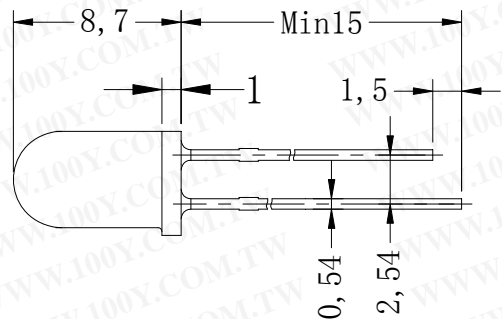
LED Part No.	Chip Material	Lens Color
YY-IRP5012C2	GaAlAs	Water clear

Package Dimensions



Remark:

1. Unit:mm
2. The key DIM tolerance less than $\pm 0.1\text{mm}$



Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Continuous Forward Current	I _F	50	mA
Peak Forward Current	I _{FP}	1	A
Reverse Voltage	V _R	5	V
Operating Temperature	T _{opr}	-40 ~ +85	°C
Storage Temperature	T _{stg}	-40 ~ +85	°C
Soldering Temperature	T _{sol}	260	°C
Power Dissipation at 25°C Free Air Temperature	P _d	90	mW

Notes: *1: I_{FP} Conditions--Pulse Width \leq 100 μ s and Duty \leq 1%.

*2: Soldering time \leq 5 seconds.

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Radiant Intensity	I _E	I _F =20mA	7.8	15	--	mW/sr
Radiant Intensity	I _E	I _F =100mA Pulse Width \leq 100 μ s ,Duty \leq 1%	--	140	--	mW/sr
Radiant Intensity	I _E	I _F =1A Pulse Width \leq 100 μ s ,Duty \leq 1%	--	950	--	mW/sr
Peak Wavelength	λ_p	I _F =20mA	--	850	--	nm
Spectral Bandwidth	$\Delta\lambda$	I _F =20mA	--	45	--	nm
Forward	V _F	I _F =20mA	--	1.45	1.60	V
Forward	V _F	I _F =100mA Pulse Width \leq 100 μ s ,Duty \leq 1%	--	1.60	1.8	V
Forward Voltage	V _F	I _F =1A Pulse Width \leq 100 μ s ,Duty \leq 1%	--	4.1	5.25	V
Reverse Current	I _R	V _R =5V	--	--	10	μ A
View Angle	2 θ 1/2	I _F =20mA	--	15	--	deg

Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs. Ambient Temperature

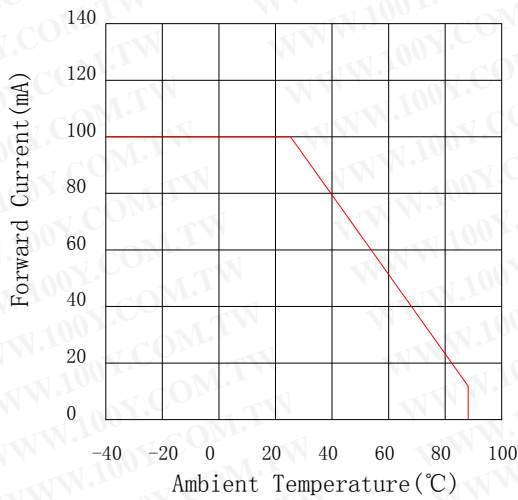


Fig.2 Spectral Distribution

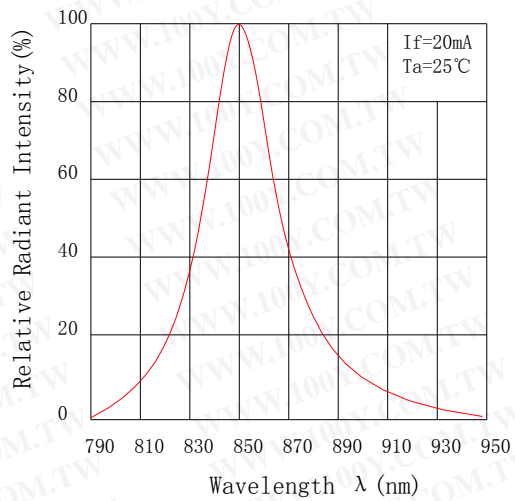


Fig.3 Peak Emission Wavelength Ambient Temperature

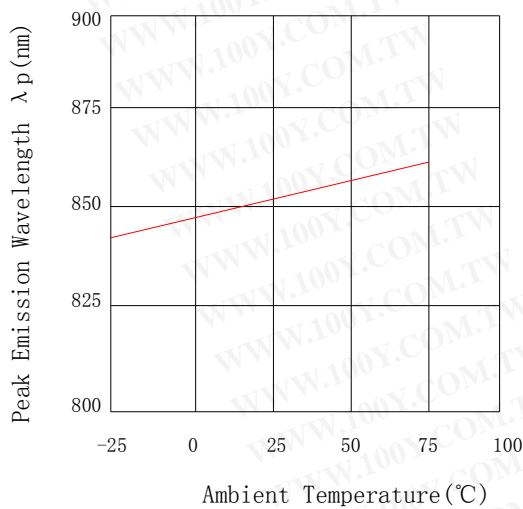
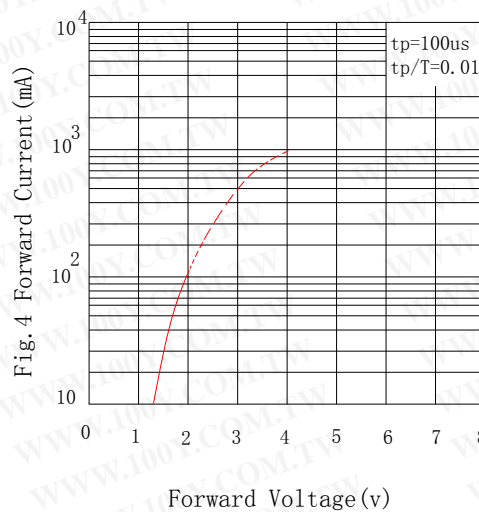


Fig.4 Forward Current vs Forward Voltage



Typical Electro-Optical Characteristics Curves

Fig. 5 Relative Intensity vs Forward Current

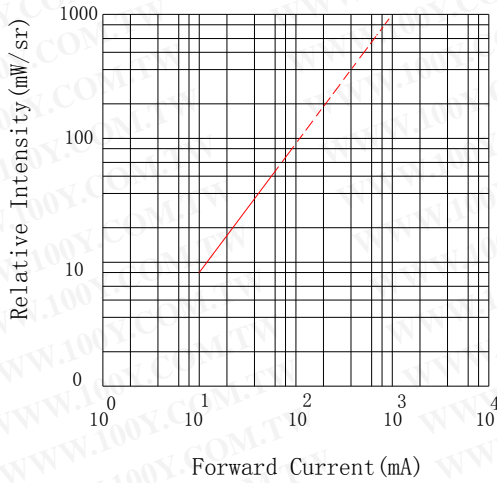


Fig. 6 Relative Radiant Intensity vs Angular Displacement

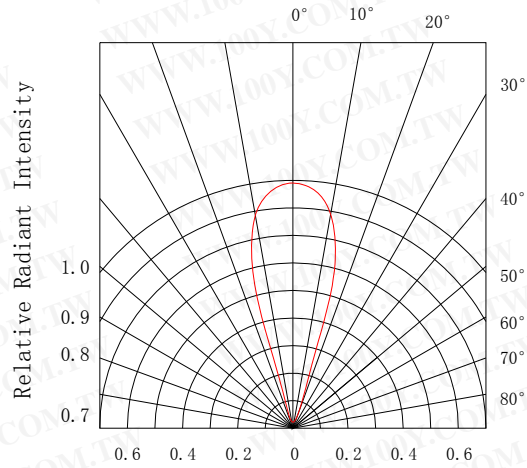


Fig. 7 Relative Intensity vs Ambient Temperature (°C)

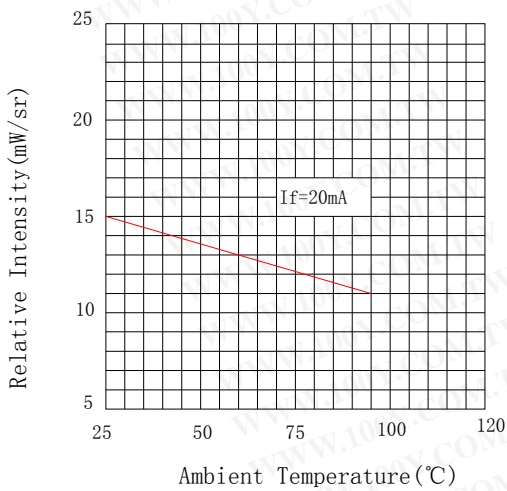
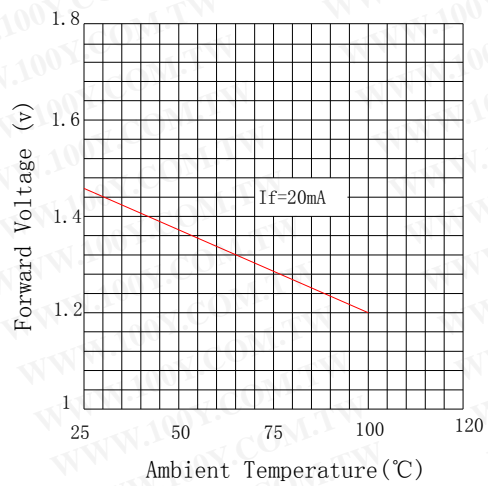


Fig. 8 Forward Voltage vs Ambient Temperature (°C)



Packing Quantity Specification

1. 1000PCS/Bag

Instructions

1. Lead Forming

- During lead formation, the leads should be bent at a point at least 3mm from the base of the epoxy bulb.
- Lead forming should be done before soldering.
- Avoid stressing the LED package during leads forming. The stress to the base may damage the LED's characteristics or it may break the LEDs.
- Cut the LED leadframes at room temperature. Cutting the leadframes at high temperatures may cause failure of the LEDs.
- When mounting the LEDs onto a PCB, the PCB holes must be aligned exactly with the lead position of the LED. If the LEDs are mounted with stress at the leads, it causes deterioration of the epoxy resin and this will degrade the LEDs.

2. Storage

- The LEDs should be stored at 30°C or less and 70%RH or less after being shipped from YuanYue and the storage life limits are 3 months. If the LEDs are stored for 3 months or more, they can be stored for a year in a sealed container with a nitrogen atmosphere and moisture absorbent material.
- Please avoid rapid transitions in ambient temperature, especially, in high humidity environments where condensation can occur.

3. Soldering

- Careful attention should be paid during soldering. When soldering, leave more than 3mm from solder joint to epoxy bulb, and soldering beyond the base of the tie bar is recommended.
- Recommended soldering conditions:

Hand Soldering		DIP Soldering	
Temp. at tip of iron	300 °C Max. (60W Max.)	Preheat temp.	100°C Max. (60 sec Max.)
Soldering time	3 sec Max.	Bath temp. & time	260 Max., 5 sec Max
Distance	3mm Min.(From solder joint to epoxy bulb)	Distance	3mm Min. (From solder joint to epoxy bulb)

Notes

- Above specification may be changed without notice, YuanYue will reserve authority on material change for above specification.
- When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. YuanYue assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
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