PRODUCT SPECIFICATION

ModelNo: YBR-43FMRGB-A8686

Description:

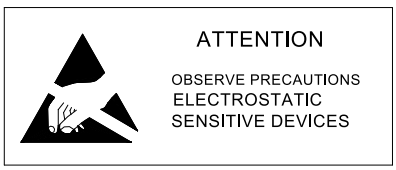
◆4.0*6.5mm Standard Type

◆Emitting color： Red Green Blue

◆No Stopper

CUSTOMER APPROVED SIGNATURES	APPEOVED BY	CHECKED BY	PREPARED BY





CZINELIGHT

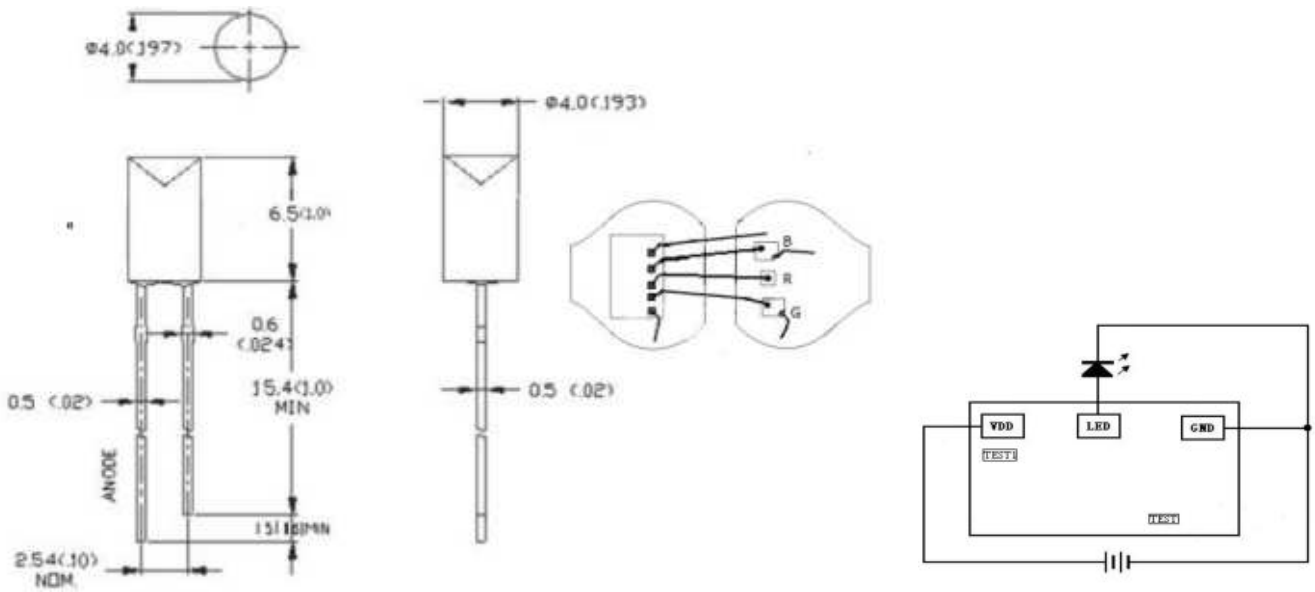
◆**Features:**

- 4mm concave LED Lamps
- Emitting Color:Red、Green、Blue
- Lens Color:White Diffused
- Mertial:InGaN/AIGalnP
- Low power consumption
- Excellent product quality and reliability
- Lesd-free device

◆Application:

- Electronic sings and signals
- Bright ambient lighting conditions
- Backlight
- General purpose indicatiors

Package Dimensions:



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◆Absolute Maximum Ratings at TA=25°C:

Parameter	Symbol	Value			Unit
		Red	Green	Blue	
Power Dissipation	PD	50	80	60	mW
Forward Current	IF	13	13	13	mA
Reverse Voltage	VR	—	3.3	—	V
Operating Temperature	Topr	-20°C To +65°C			
Storage Temperature	Tstg	-20°C To +65°C			
Soldering Temperature*2	Tsol	260°C For 5 Seconds			

Notes:

1. Pulse width0.1ms,Duty cycle1/10.
2. Plese refer to the curve of forward current vs temperature.

◆Electrical / Optical Characteristics at TA=25°C

Parameter		Symbol	Min.	Typ.	Max	Unit	Test Conditions
Forward Voltage	Red	V_F	—	2.0	—	V	IF=14mA
	Green	V_F	—	3.20	—	V	
	Blue	V_F	—	3.20	—	V	
Reverse Current	Red	I_R	—	—	10	μA	VR=5V
	Green	I_R	—	—	10	μA	
	Blue	I_R	—	—	10	μA	
Peak Wavelength	Red	λd	620	622.5	625	nm	IF=14mA
	Green	λd	525	527.5	530	nm	
	Blue	λd	465	467.5	470	nm	
Luminous Intensity	Red	I_V	—	300	—	mcd	IF=14mA
	Green	I_V	—	450	—	mcd	
	Blue	I_V	—	200	—	mcd	
Power Angle		2θ1/2	—	94	—	Deg.	IF=14mA

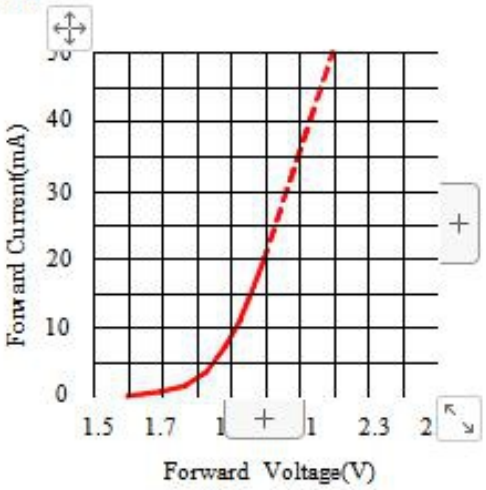
Remark:If special sorting is required(e.g.binning based on forward voltage ,luminous intensity,or dominant wavelength),the typical accuracy ot the sorting process is as follows:

1. Dominant Wavelength:+/-1nm
2. Chromatic Coordinates:+/-0.01
3. Luminous Intensity:+/-15%
4. Forward Voltage:+/-0.1V

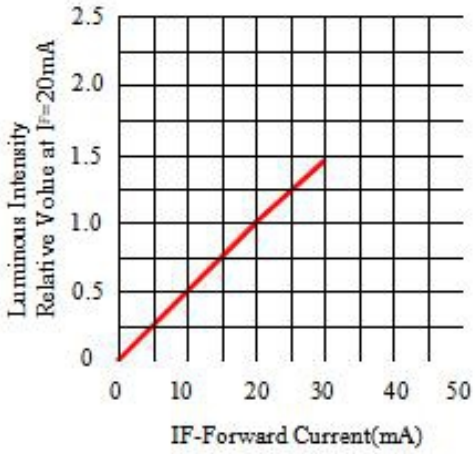
CZINELIGHT

◆Typical Electrical/Optical Characteristics Curves:

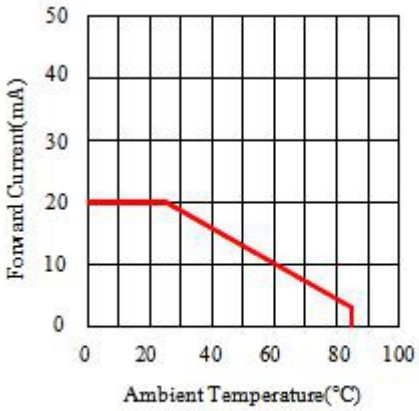
Red



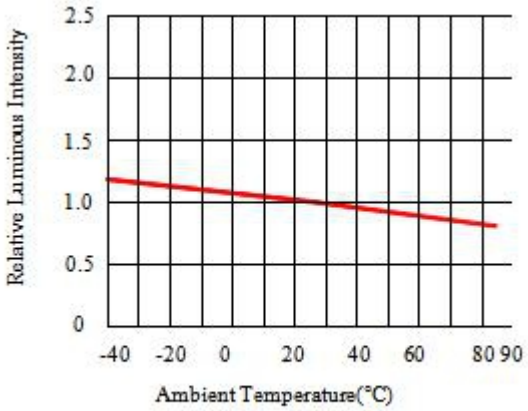
FORWARD CURRENT Vs.
FORWARD VOLTAGE



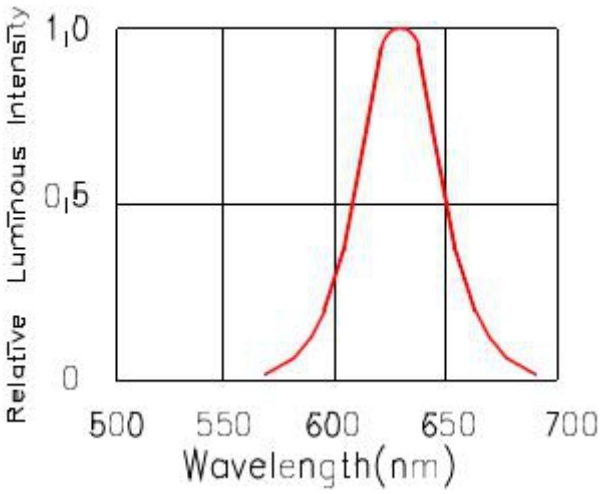
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE



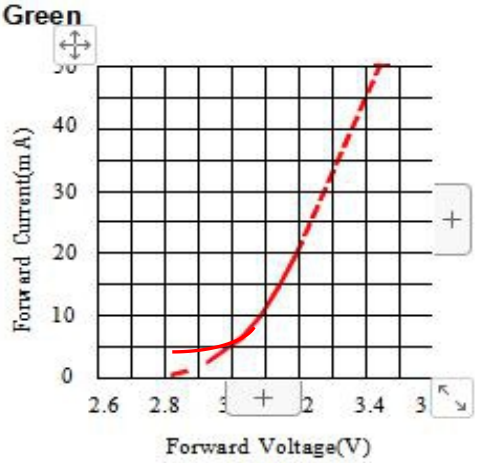
LUMINOUS INTENSITY Vs.
AMBIENT TEMPARATURE



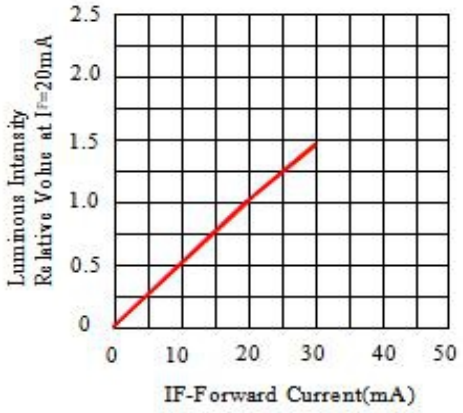
CZINELIGHT

◆Typical Electrical/Optical Characteristics Curves:

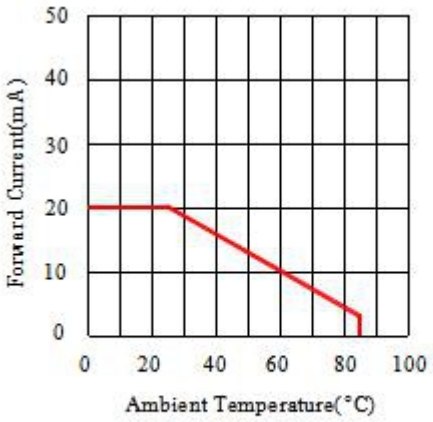
Green



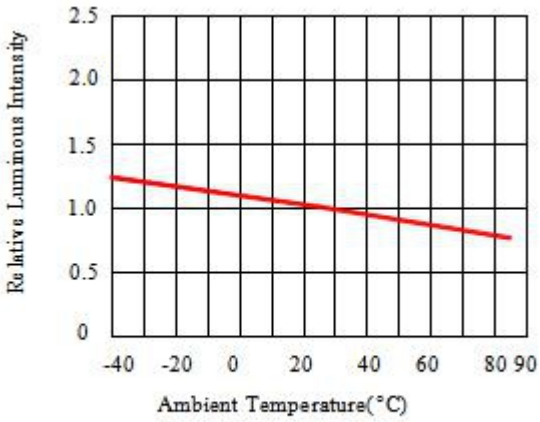
FORWARD CURRENT Vs.
FORWARD VOLTAGE



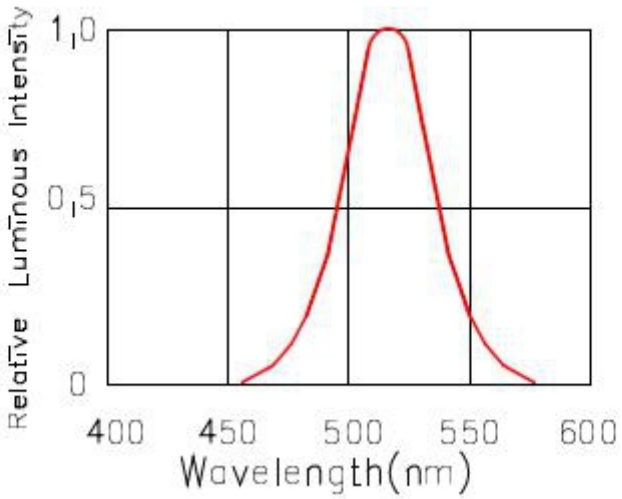
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE



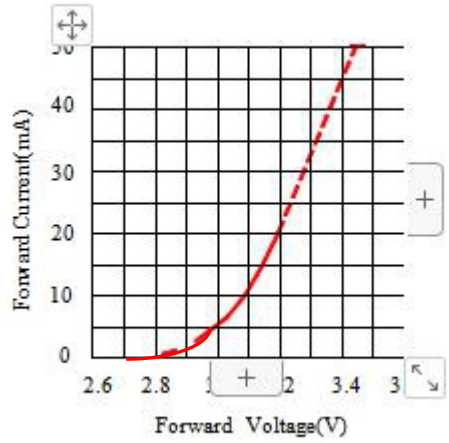
LUMINOUS INTENSITY Vs.
AMBIENT TEMPARATURE



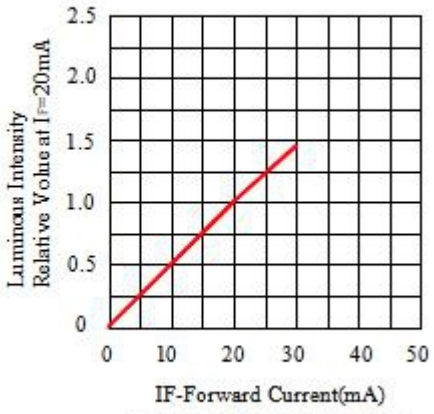
CZINELIGHT

◆Typical Electrical/Optical Characteristics Curves:

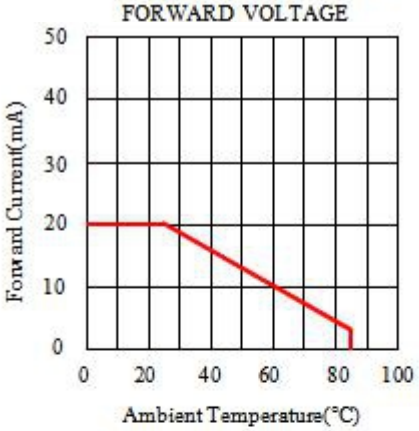
Blue



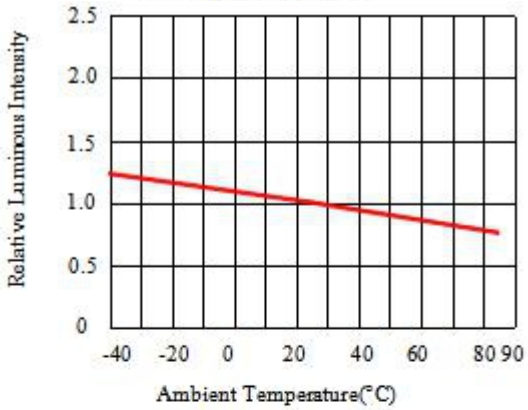
FORWARD CURRENT Vs.
FORWARD VOLTAGE



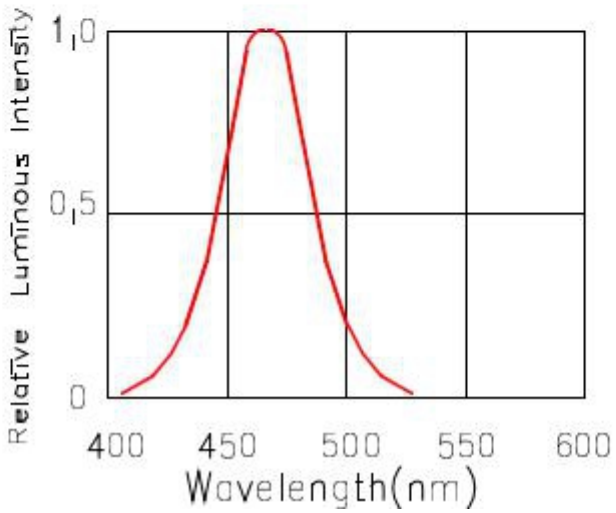
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE



LUMINOUS INTENSITY Vs.
AMBIENT TEMPARATURE



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◆Reliability Test Items and Conditi:

Test Classification	Test Itim	Test Conditions	Test Dura-tion	Sampl e Size	AC/RE
Life Test	Room Temperature DC Operating Life Test	Ta=25°C±5°C , If=14mA	1000hrs	22pc s	0/1
Environment Test	Thermal Shock Test	100°C±5°C 5min ↓↑ -40°C±5°C 5min	100 cycles	22pc s	0/1
	Temperature Cyle Test	100°C±5°C 30min ↓↑5min -40°C±5°C 30min	100 cycles	22pc s	0/1
	High Temperature & High Humidity Test	85°C±5°C /85% RH If=2mA	1000hrs	22pc s	0/1
	High Temperature Stor-age	Ta=100°C±5°C	1000hrs	22pc s	0/1
	Low temperature Storage	Ta=-40°C±5°C	1000hrs	22pc s	0/1
Mechanical Test	Resistance to Soldering Heat	Temp=260°C ±5°C T=5s max	2 times	22pc s	0/1

◆Criteria for Judging the Damage:

Item	Symbol	Condition	Creteria for Judgement	
			MIN	MAX
Forward Voltage	VF(V)	IF-14mA	—	U.S.L*1.1
Reverse Current	IR(uA)	VR=3.3V	—	10uA
Luminous Inten	IV(mcd)	IF=14mA	L.S.L*0.5	—

【Note】1.USL：Upper Specification Level 2.LSL：Lower Specification Level

◆CAUTIONS:

1.Lead Forming & Assembly

- Lead forming or bending must be done before soldering, at normal temperature.
- During lead forming, the leads should be bent at a point at least 3mm from the base of LED lens.
- Do not use the base of the lead frame as a fulcrum during lead forming.
- Avoid bending the leads at the same point more than once.
- During assembly on PCB, use minimum clinch force possible to avoid excessive

CZINELIGHT

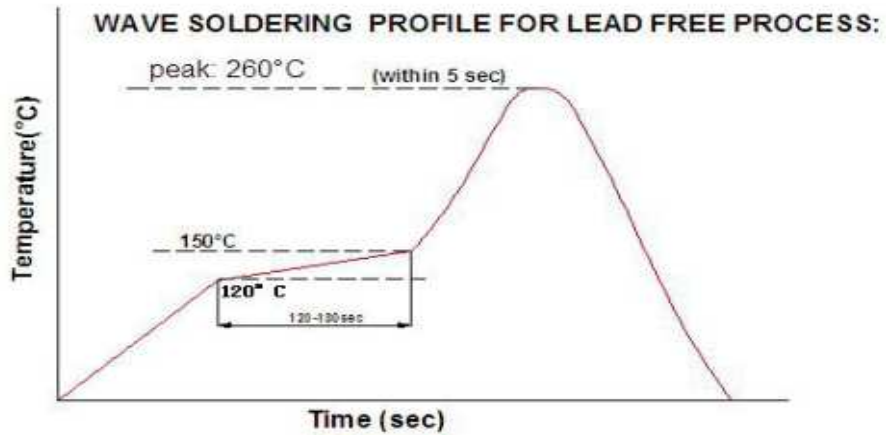
2.LED Mounting Method

The lead pitch of the LED must match the pitch of the mounting holes on the PCB during component placement.Lead-forming may be required to insure the lead pitch matches the hols pitch. .When soldering wire to the LED. Use individual heat- shrink tubing to insulate the exposed leads to prevent accidental coontact short-circuit.

Use stand-offs or spacers to securely position the LED above the PCB.

3.Soldering

1)When soldering, the soldering iron needs to be at least 3mm away from the epoxy edge. After soldering,allow at least 3 minutes for LEDs to cool back to normal temperature.DO not apply any pressure to the epoxy encapsulation or the lead frame during the soldering process.



2)When using soldering iron .please solder once for less than 5 seconds at a maximum Temperature of 300°C.When soldering a row of LED on a PCB. Please do notsolder both Leads of a LED in sequence. (Solder all the positive lead first .then all the negative leads).

3)Do not dip the epoxy encapsulation part of LED into any soldering paste liquid.

4)AWhen attaching electronic parts to a PCB with LEDs .the curing time for the whole PCB Should be less than 60 seconds .at less than a temperature of 120°C.

4.Cleaning:

Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LEDs if necessary.

5.Storage

1)The storage ambient for the LEDs should not exceed 30°Ctemperature or 70% rela- tive humidity.

2)It is recommended that LEDs out of their original packaging are used within three months. For extended storage out of their original packaging, it is recommended that the LEDs be stored in a sealed container with appropriate desiccant or in desiccators with nitrogen ambient.

6.ESD (Electrostatic Discharge)

Static Electricity or power surge will damage the LED.

Suggestions to prevent of ESD damage.

1)All devices, equipment, and machinery must be properly grounded

2)Use a conductive wrist band or anti-electrostatic glove when handling these LEDs.

3)Maintain a humidity level of 50% or higher in production areas.

4)Use anti-static packaging for transportation and storage.

7.Recommended Usage Guidelines

1)Please only use 14mA(Lamp LED) of forward current to drive LEDs whether one LED or multiple LEDs are being used.

2)Sudden surge could damage the LED interior connections.please design circuit with care to no sudden voltage surge or current surge will show when turning the circuit on or off.

3)fter soldering .do not adjust the location of the LED anymore .

◆Revision History:

Rev.No.	Change description	Date	Prepared by	Checked by
A/0	New-made specification			