



Data Sheet

Customer:

Part No:

CL-BIT1615RGB-02(BLACK)

Sample No:

Description:

Outdoor Display RGB

Item No:

Customer			
Check	Inspection	Approval	Date

1615 Package Top LED

Features

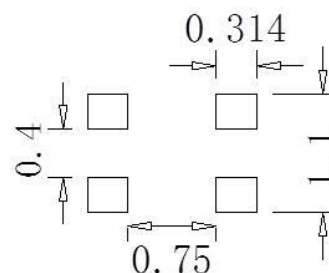
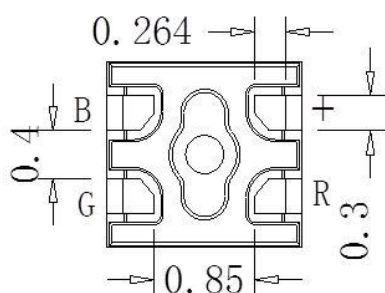
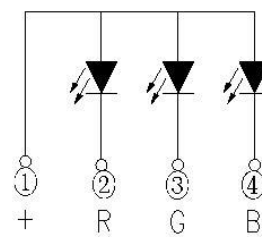
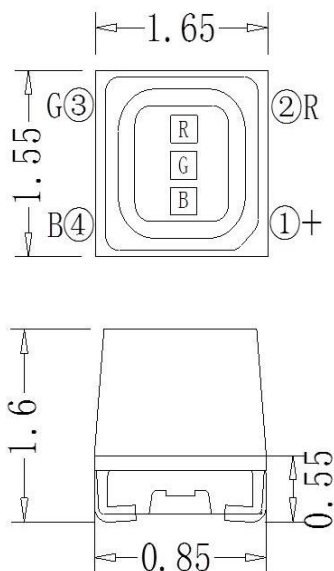
- .1615 package.
- .Full-color type.
- .Compatible with infrared and vapor phase reflow solder process.
- .Package:24000pcs/reel
- .Epoxy resin



Applications

- . Outdoor display screen.

Package Dimensions



Soldering patterns

Note:Tolerances unless mentioned $\pm 0.05\text{mm}$. Unit = mm

Electro-Optical Characteristics (Ta=25°C)

Symbol		Parameter	Min.	Typ.	Max.	Unit	Condition
I _v	R	Luminous Intensity	300	450	600	mcd	I _F =15mA
	G		500	750	900		I _F =8mA
	B		70	95	120		I _F =5mA
V _F	R	Forward Voltage	1.6	-----	2.4	V	I _F =15mA
	G		2.4	-----	3.4		I _F =8mA
	B		2.4	-----	3.4		I _F =5mA
Wd	R	Dominant Wavelength	617		625	nm	I _F =15mA
	G		515		535		I _F =8mA
	B		460		475		I _F =5mA
2θ1/2		Viewing angle	-----	110	-----	deg	I _F =15mA
I _R		Reverse Current	-----	-----	1	uA	V _R =5V (DC)

Note:

- 1.Tolerance of Luminous Intensity: ±10%
2. Tolerance of Dominant Wavelength: ±1nm
3. Tolerance of Forward Voltage: ±0.1V

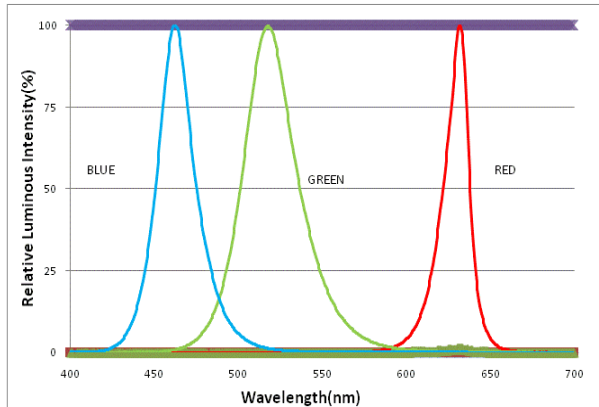
Absolute Maximum Ratings (Ta=25°C)

Symbol	Parameter	Value	Unit
P _d	Power Dissipation	R:50 G:65 B:65	mW
V _R	Reverse Voltage	5	V
I _F	Forward Current	R:20 G:20 B:20	mA
I _{FP}	Peak Forward Current (Duty 1/10 @1KHz)	R:100 G:100 B:100	mA
T _j	Junction Temperature	110	°C
ESD	Electrostatic Discharge(HBM)	R:2000 G:1000 B:1000	V
T _{opr}	Operating Temperature	-30~ +85	°C
T _{Stg}	Storage Temperature	-40~ +100	°C
T _{Sol}	Soldering Temperature	260	°C

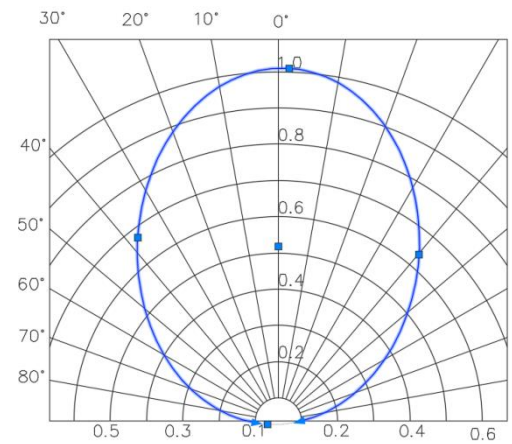
Note:Pulse Width≤0.1ms,Duty≤1/10

Electro-Optical Characteristics Curves

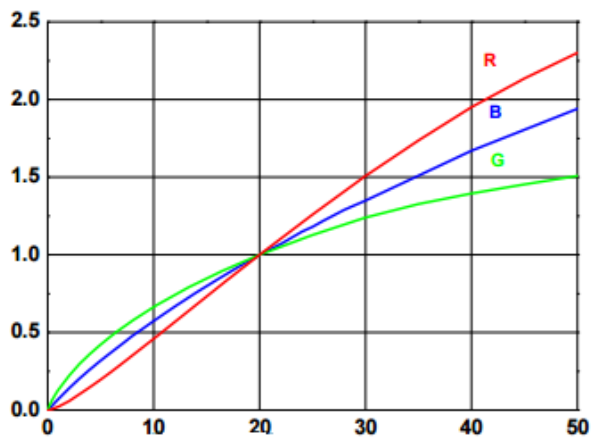
Spectrum Distribution



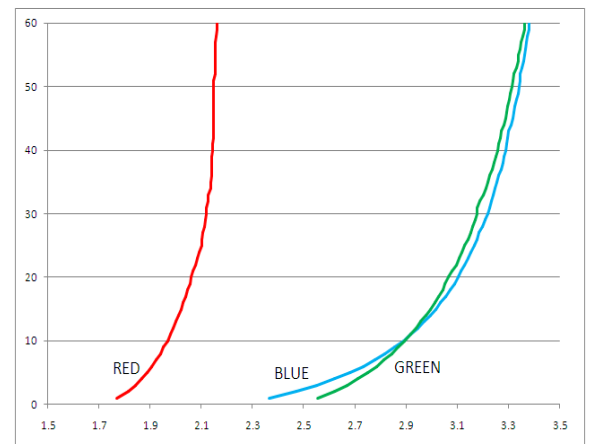
Radiation Diagram



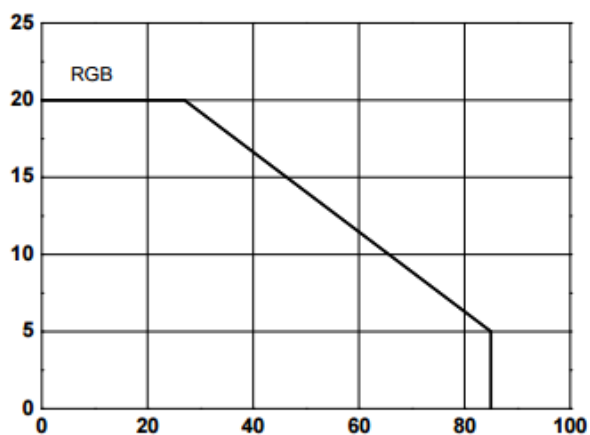
Relative Luminous Intensity vs. Forward Current



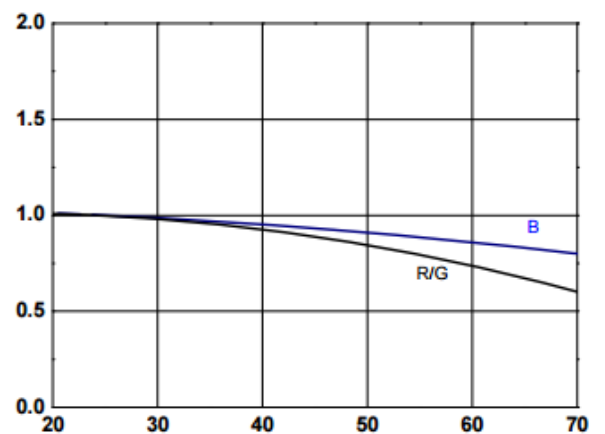
Forward Current vs. Forward Voltage



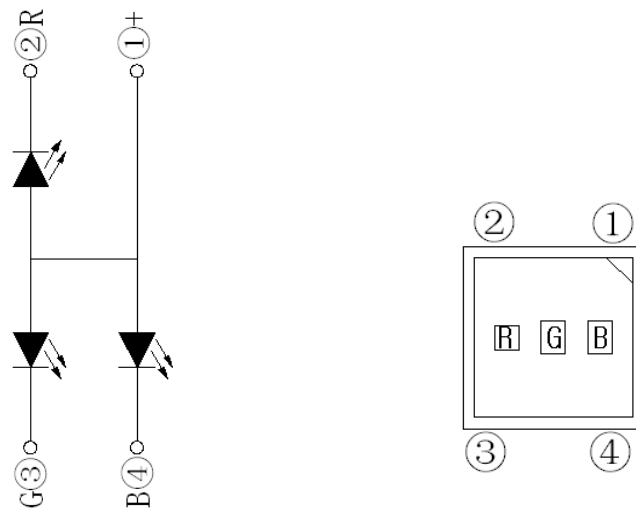
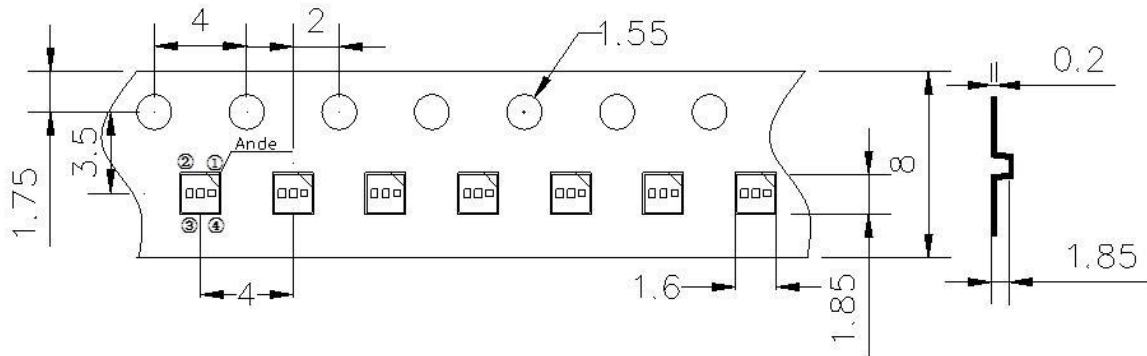
Forward Current vs. Ambient Temp.



Luminous Intensity vs Ambient Temp.



**Carrier Tape Dimensions: Loaded Quantity24000pcs each package
(single volume / 12 k)**

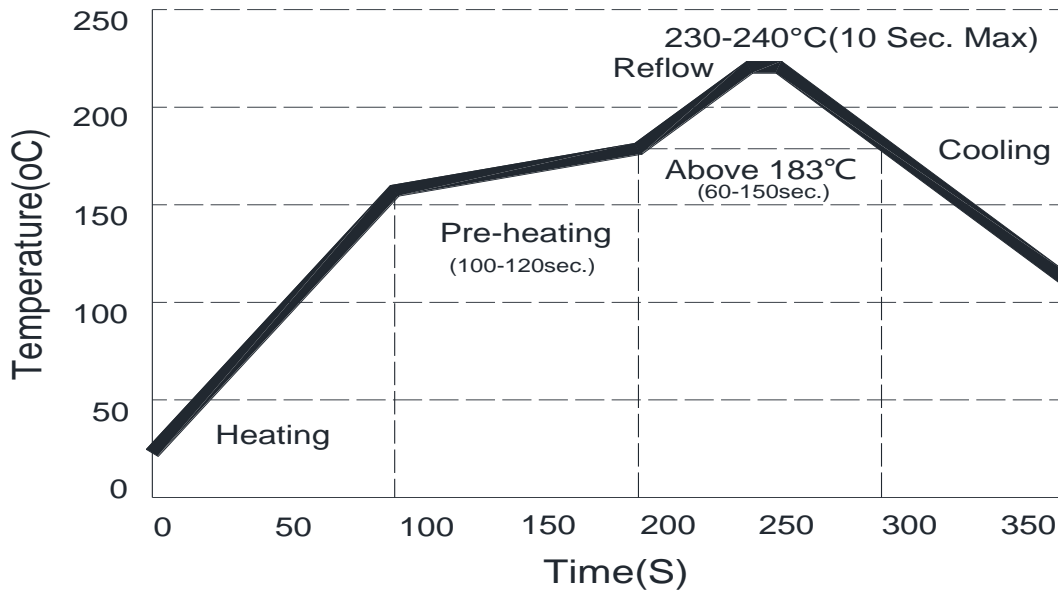


Note:

1. Dimensions are in millimeters.
2. Tolerances unless mentioned are $\pm 0.1\text{mm}$

Soldering Condition:

1. Pb-free solder temperature profile



2. Reflow soldering should not be done more than two times.
3. When soldering, do not put stress on the LEDs during heating.
4. After completion of welding, do not force curve circuit board, after being products wet down to room temperature, and then to other operations.
5. When repairing, The heating temperature control within 240°C, and the heating time control within 30s (If the temperature is too high or time is too long, LED will be permanent damaged)
6. If manual soldering is used, the use of a soldering iron less than 25W is recommended. The temperature of the iron must be kept below 315°C, with soldering time within 3 seconds and each Electrode can be only soldered at one time.

Cleaning:

1. It is recommended to use clean cloth dipped in alcohol (anhydrous ethanol) for wiping, after soldering, and not excessive force, should be controlled at 50 degrees below.
2. Ultrasonic cleaning can be used, but the average power is not more than 300W.

Storage

- 1.The product is packaged in anti-static aluminium foil bag with desiccant and humidity card.
- 2.Storage environment: All the products should be stored in the environment of temperature $10^{\circ}\text{C}\sim 30^{\circ}\text{C}$ and humidity $\leq 60\%$ RH before foiled bags open and need to be baked before SMT , Baking conditions are as follows :

类别	烘烤温度	烘烤时间
≤ 2 个月	70 ± 5	12H
2-6 个月	70 ± 5	18H
超 6 个月	70 ± 5	24H

- 3.Please baked for 24 hours at $70^{\circ}\text{C}\pm 5^{\circ}\text{C}$ If the humidity card fail or excess storage time.
- 4.Once opened, please in $10^{\circ}\text{C} \sim 30^{\circ}\text{C}$, humidity $\leq 60\%$ RH environment use, and finish the patch in 8 h, such as using the environment is beyond the scope of regulation and patch products, more than 8 h time please to bake dehumidification, conditions: $70^{\circ}\text{C}\pm 5^{\circ}\text{C}$ x8h.

Electrostatic protection

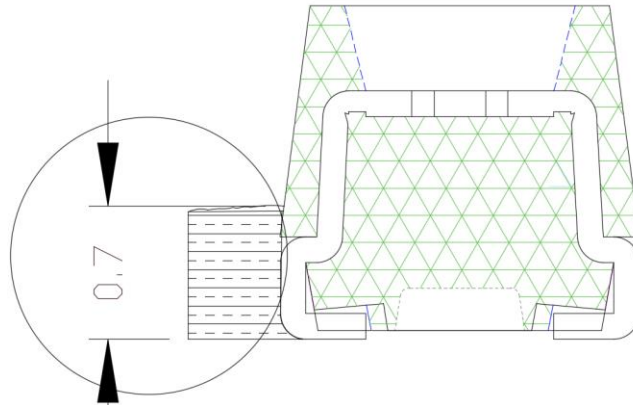
1. Electrostatic machining process, so as to prevent product damage suggestion: use electrostatic bracelet, anti-static working clothes/shoes/working gloves, and anti-static floor and anti-static tools
2. All related equipment should be correct answer the volunteers take effective electrostatic prevention measures

Circuit design

1. The LEDs should be operated with forward bias. The driving circuit must be designed so that the LEDs are not subjected to forward or reverse voltage while it is off. If reverse voltage is continuously applied to the LEDs, it may cause migration resulting in LED damage

2. The reverse voltage is recommended to be below 1.5v
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Recommendation for glue filling:filling height must be higher than or equal to 0.7mm



Reliability Test

The particles meet the following reliability test

NO	Item		Condition	Reference standard	Quantity	Determine
1	LED	TS	150°C storage 5min ; shift : 10s ; -65°C storage 5min 300cycle	JESD22-A113F	22	Not dead lamp
2		TC	100°C storage 15min ; shift : 5min ; -40°C storage 15min 300cycle	JESD22-A104C	22	Not dead lamp
3		HT	Temp. : 100°C	JEITA ED-4701 200 201	22	1.Iv 衰减 Avg ≤30% (1000H) 单个≤50% ; 2.VF 初始值± 10% (1000H) ; 3.IR≤10uA。
4		LT	Temp. : -40°C	JEITA ED-4701 200 202	22	
5		Life	Temp. : 25°C	Internal standard	22	
6		HTHH	Temp. : 85°C ; Humidity 85%RH	JEITA ED-4701 100 103	22	
7		HT	Temp. : 70°C IF : R@15mA/G@8mA/B@5mA	Internal standard	22	
8		HTHH	Temp. : 85°C ; Humidity 85%RH IF : R@15mA/G@8mA/B@5mA	Internal standard	22	
9		Red ink (25°C)	Red ink : alcohol=1:1 soak 24H	Internal standard	50	Functional areas are impermeable