Data Sheet

Customer: _____

Part No: CL-BIT3216DBW-10K-04

Sample No: _____

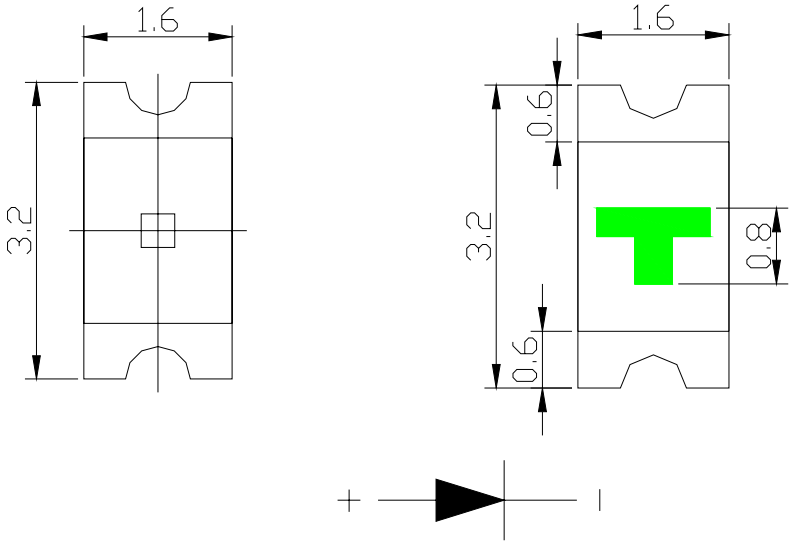
Description: _____

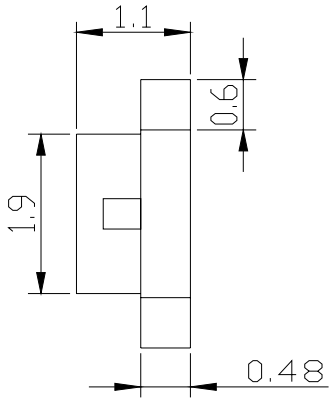
Item No: _____

Customer			
Check	Inspection	Approval	Date

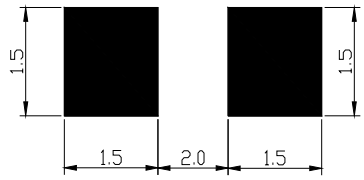
Description： Flat LED

Package Dimensions





● Paecommended Soldering Pattern



Colloid	Material	Color
Yellow phosphor	InGaN	Cool White

Remarks：

1. All dimensions are in millimeters

2. Tolerance of + or - 0.25mm 0.010 in. (unless otherwise noted)

Absolute Maximum Rating Value Temperature at 25℃

Parameters	Maximum Rating	Units
Power	40	mW
Pulse Forward Current	60	mA
Forward Current	20	mA
Reverse Voltage	5	V

Optical Parameters Temperature at 25℃

Parameter	Symbols	Min	Typical	Max	Units	Testing Conditions
Luminous Flux	Φ	---	---	---	Lm	IF=20mA
Luminous Intensity	Iv	500	---	700	Mcd	IF=20mA
Viewing Angle	2θ1/2	---	120	---	Deg	IF=20mA
Chromaticity Coordinates	X	---	0.2700	---	---	IF=20mA
	Y	---	0.2659	---	---	IF=20mA
Color Temperature	Tc	---	11000	---	K	IF=20mA
Color Rendering Index	CRI	70	---	---	Ra	IF=20mA
Forward voltage	VF	2.8	---	3.6	V	IF=20mA
Reverse Current	IR	---	---	10	uA	VR=5V

Remarks：

1．Light-emitting brightness is according to human eye simulation of the induction curve of luminous intensity in line with the CIE (International Light Committee Organization)。

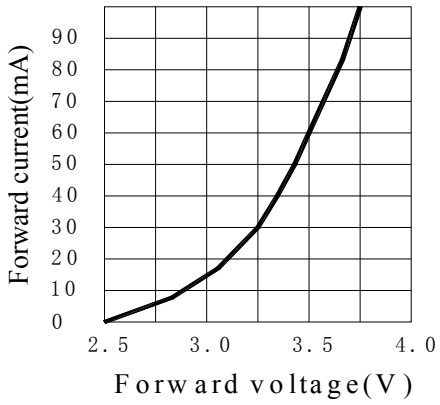
2. 1/2 angle is from optical centerline at the luminous intensity is 1/2 the optical centerline value。

3. Brightness tolerance is guaranteed within plus or minus 10%。

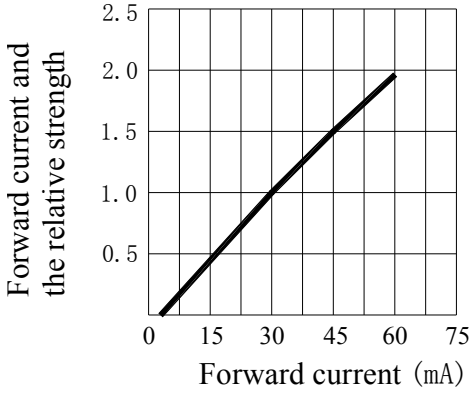
Typical Electrical and Perspective Curve

Unless Otherwise Specified, Ambient Temperature is 25 ℃

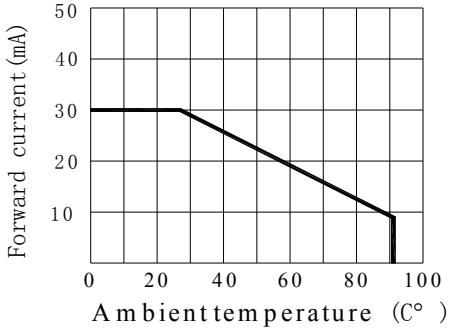
Currentand voltage



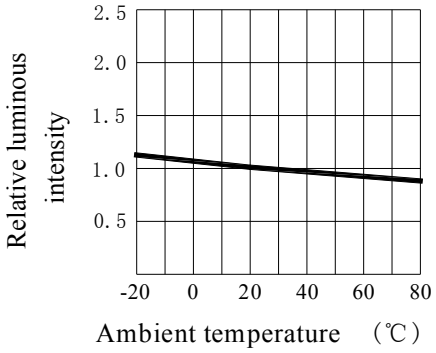
Forward current and the relative strength

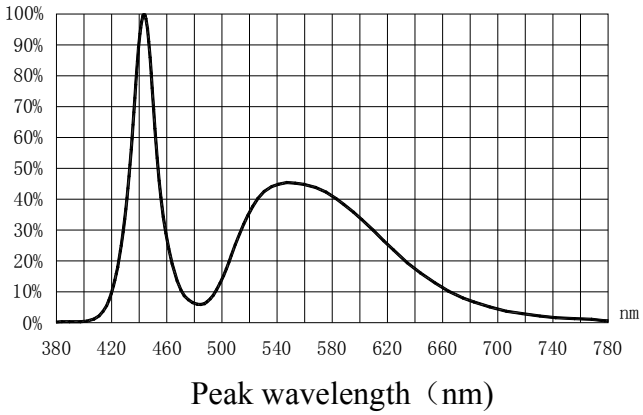


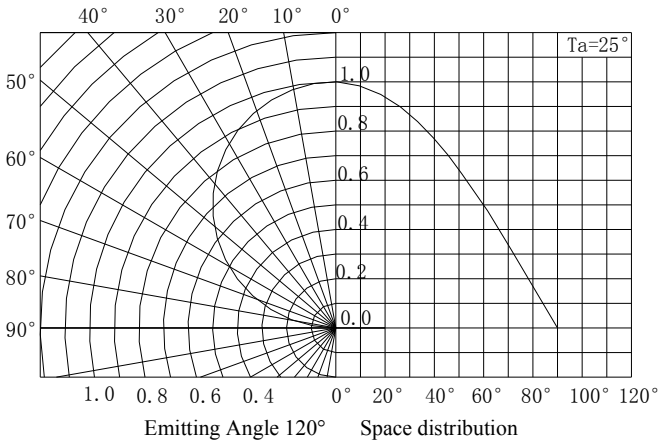
Ambient temperature and forward current



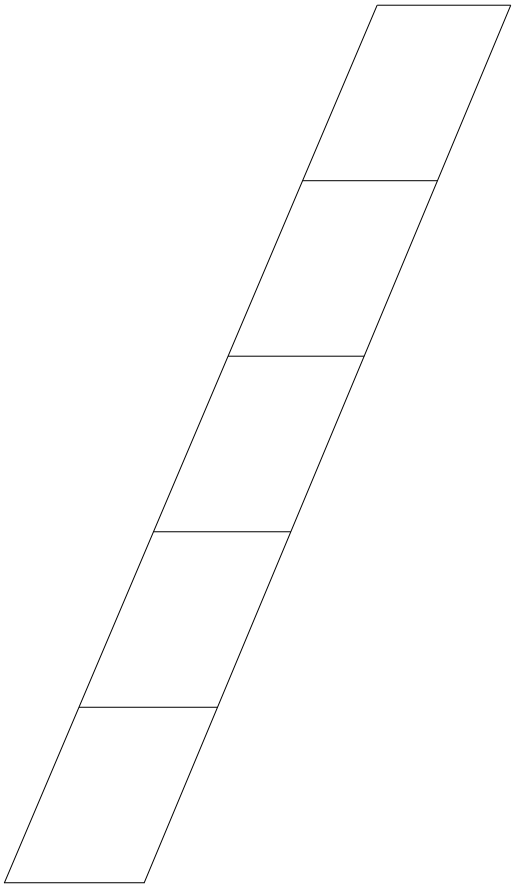
Ambient temperature and relative strength







CIE Chromaticity Diagram



11		12		13	
X	Y	X	Y	X	Y
0. 2734	0. 2946	0. 2674	0. 2816	0. 2614	0. 2666
0. 2794	0. 3076	0. 2734	0. 2946	0. 2674	0. 2816
0. 2902	0. 3076	0. 2843	0. 2946	0. 2784	0. 2816
0. 2843	0. 2946	0. 2784	0. 2816	0. 2725	0. 2686
14-2		15-2			
X	Y	X	Y		
0. 2554	0. 2556	0. 2493	0. 2426		
0. 2614	0. 2666	0. 2554	0. 2556		
0. 2725	0. 2686	0. 2665	0. 2556		
0. 2665	0. 2556	0. 2606	0. 2426		

Remarks

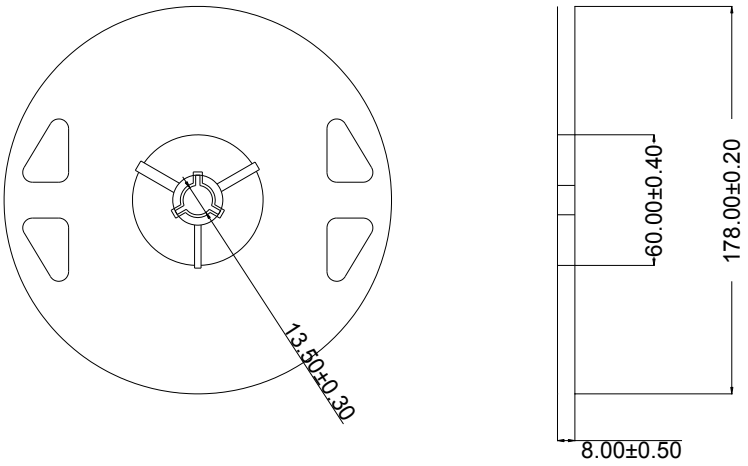
1. The error of color temperature is less than or equal to 5%。

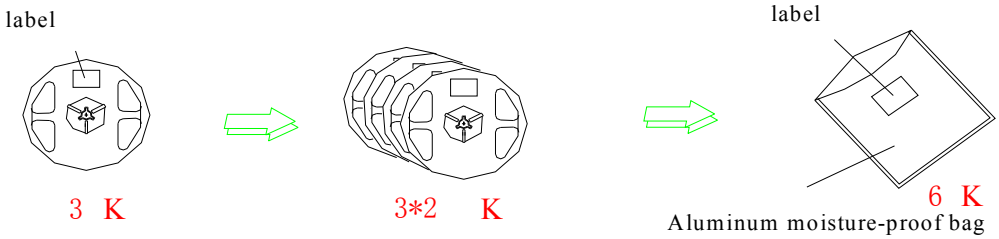
Reliability Test Items and Test Conditions

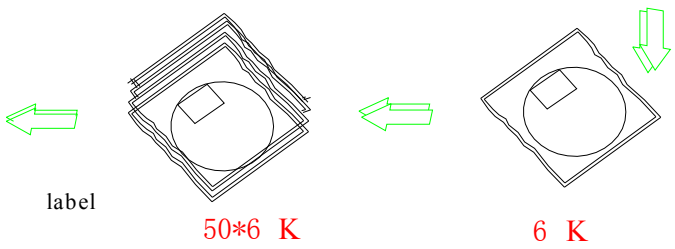
Number	Test Item	Test Conditions	Sample size	Acceptance/ Rejection
01	Reflow Solder	Temperature： Max 260℃ Time：10S Cycles：3times	22PCS	0/1
02	Life Test	Temperature ＝25 ℃ ±5 ℃ Current=20mA±2mA Cycles：1000H	22PCS	0/1
03	Temperature Cycling	85℃ ~ 25℃ ~ -40℃ ~ 25℃ 30 mins 5 mins 30 mins 5 mins Cycles：20 Cycles	22PCS	0/1
04	Hot/cold TemperatureShock	100℃±5℃ ~-40℃±5℃ 15 mins 15 mins Cycles：30 Cycles	22PCS	0/1
05	Low Temperature Storage	Temperature：-40℃±5℃ Cycles：1000H	22PCS	0/1
06	High Temperature Storage	Temperature：100℃±5℃ Cycles：1000H	22PCS	0/1

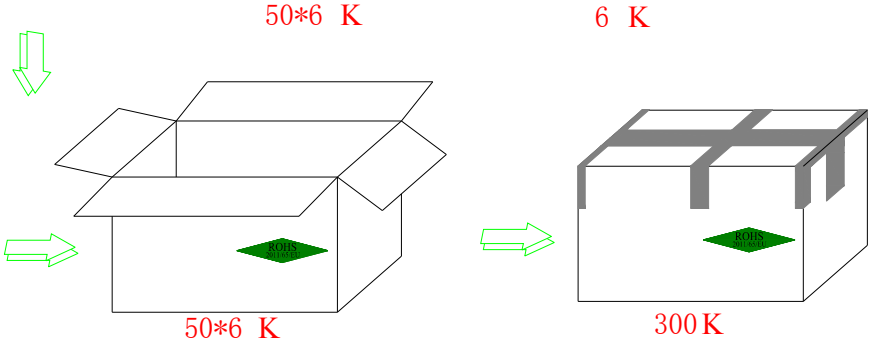
Remarks: Specifications are subject to change without prior notice.

Humidity Proof packaging





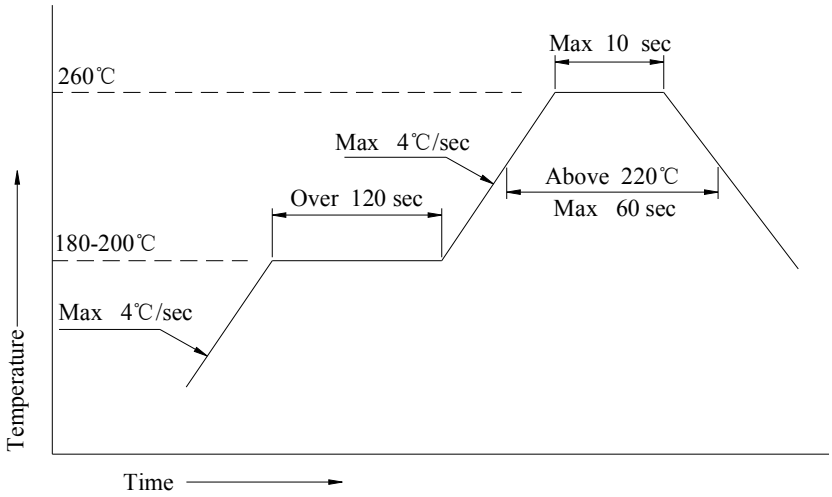




Note

Packaged LED material is silicone nature, therefore, LED has is a soft and flexible surface. Although characteristics of silicone is to reduce thermal stress, but it is more susceptible to mechanical damage to the external forces applied on the surface. Pressure affects the reliability of light emitting diodes. In such circumstances, the assembly of organic silicon encapsulated LED products must comply with the appropriate measures to deal with. Avoid any pressure applied to any part of the LED and use pneumatic nozzle. Otherwise it may lead to reduction in reliability, and impact of its life to the LED.

Reflow soldering instructions



1. Reflow soldering is recommended to the use of clean free flux, and in accordance to the reflow curve. Maximum number of soldering is limited .

2. When soldering, do not exert pressure during heating process.

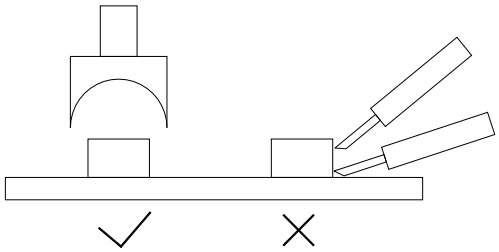
Soldering

1. When manual soldering iron is used, it is recommended to use 20W anti-electro static soldering iron, soldering temperature must be kept below 360 ℃ / 3 seconds, 1Time soldering only.

2. Do not mix different BIN materials on the same board, otherwise it will cause LED color Variation.

Repair

When repairing light-emitting diodes, it is advised to confirm the light emitting diode will be damaged, the repair process should avoid contact with the colloid surface, use of soldering iron should be according to following diagram.



Clean

Recommend the use of pure alcohol to clean, wash and wipe or dipping no more than 1 minutes after soldering. When different solvents are used for cleaning, make sure that solvents do not damage the light emitting diode packaging.

Potting

1. The use of silicone rubber (plastic glass) for potting, it is recommended the use of alcoholic encapsulating Material.

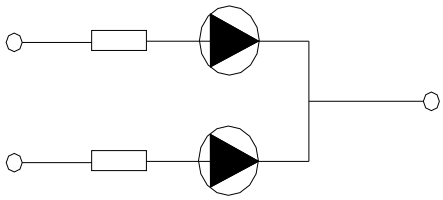
2. When deoximation neutral potting material is used, make sure that the potting curing process in well-ventilated.。Do not perform sealing assembly of Light Emitting Diodes before potting is completely cured and setting process is completed. This will result in the silver layer oxidation and luminous color fades, light degradation and even dead LED.

3. Prohibit the use of acetic acid type (acidic) silicone rubber potting materials.

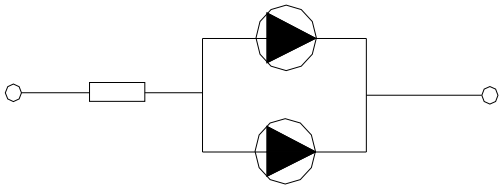
4. It is recommended that small quantity samples are made for potting test， Room temperature light test of 168H confirming no abnormality before mass products.

5. When there is change in potting material, please make samples to confirm whether there is erosion reaction. Take 5-10 grams of potting material and 10-20 pcs in a 100ml sealed containers for 168H confirm whether there is abnormality.

Driving method



（A）



（B）

（A）Recommended circuits

（B）Each LED may appear inconsistent brightness, it is a result of the IV curve

Static electricity

All employees have direct contact with LED for all processes (production, testing, packaging, etc.) must perform all preventive and eliminating static electricity measures.

1. Workshop floors to use of the anti-static flooring and grounding, anti-static work bench, when charged material is in contact with low resistance metal surface, due to acute discharge, possibility of product failure is very high, so the requirements of the bench and any contact with the products should have surface resistance of 10^6-$10^9\Omega$ table mats.

2. Production machines such as: tin furnace, reflow soldering, SMT equipment, electric soldering iron, and testing equipment need to be grounded, grounded AC impedance less than 1.0 ohm. Prone to static electricity environment and equipment must be installed ion fan. During working process, operators to wear anti-static clothing, wrist strap, gloves, and etc., When handling, hold the insulated part of the product as much as possible.

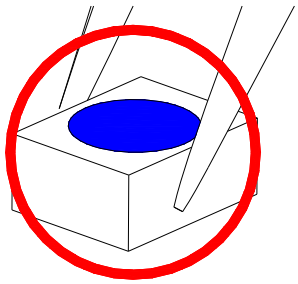
3. For packaging of LED, anti-static component boxes, packaging materials should be use.

4. Keep ambient humidity below 60% RH to avoid air being too dry to generate static electricity.

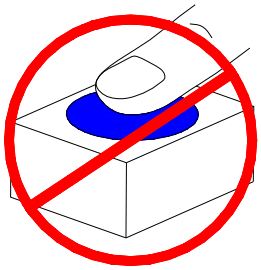
5. Grounding should be connected to the neutral input line. It should be separated from the lightning grounding. Grounding should be done with anti-static. Heavy gauge copper cable should be connected to a large piece of metal and buried at least 1 meter deep into the ground. All ground cables must be connected together with the main cable.

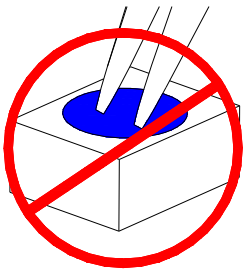
Operating diagram

1. Use forceps or other appropriate tools grip along the side surface of component.

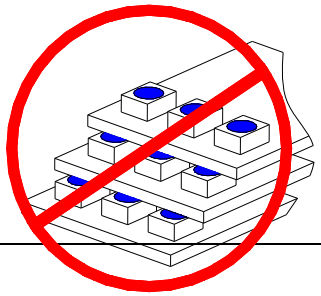


2. Do not touch the silicone surface. It may damage the internal circuitry of the LED.





3. Do not stack soldered LED, it may cause scratching of LED and silicone damage leading to dead LED .



4. Do not make contact with thinner, Trichloroethylene, acetone, sulfide, sodium ion and acid, alkali, Salt and other substances. These materials will cause oxidation of silver plating and vulcanization of phosphor leading to color fading and reduction of brightness conditions.

Storage

1. Recommended storage conditions before opening packaging: 5 ℃ -30 ℃ / <60% RH, retention period of one year.

2. After opening of packaging: Room temperature <30 ° C, humidity < 60% RH. It is recommended to complete the reflow soldering operations in 4Hours. Complete LED packaging operations within 12 hours. If LED absorbed moisture prior to high temperature reflow soldering process, it will cause silicone and PPA to separate leading to component failures. Unused products, perform dehumidification procedure (reel products 75 ° C ± 5 ° C / 12H, bulk products, 110 ° C ± 5 ° C / 1H, natural cooling 1H inside oven) before reuse.

3. In the case of vacuum packing leakage, do not use,Use only after.