Data Sheet

Customer:

Part No: CL-BIT1608DBW-6.5K-02

Sample No:

Description: 1608 SMD White Color

Item No:

Customer			
Check	Inspection	Approval	Date

Features

_1.6mmX0.8mm SMT LED, 0.60mm THICKNESS.

_LOW POWER CONSUMPTION.

_WIDE VIEWING ANGLE.

_IDEAL FOR BACKLIGHT AND INDICATOR.

_VARIOUS COLORS AND LENS TYPES AVAILABLE.

_PACKAGE: 4000 PCS / REEL.

_RoHS COMPLIANT.

Description

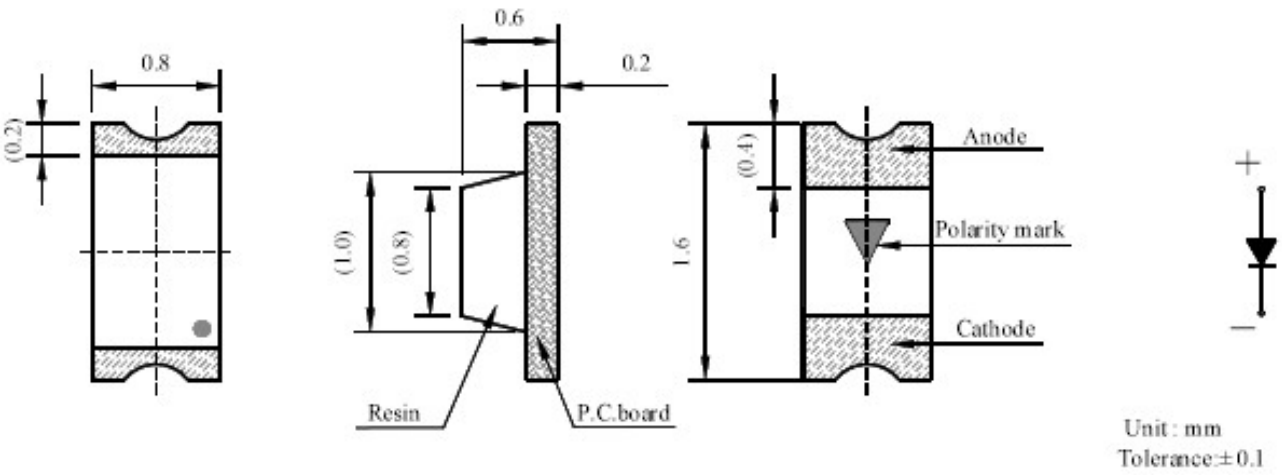
The Yellow source color devices are made with

Gallium

Arsenide Phosphide on Gallium Phosphide

Yellow Light

Package Dimensions



Notes:

1. All dimensions are in millimeters (inches).

2. Tolerance is ±0.1(0.004") unless otherwise noted.

3.Specifications are subject to change without notice.

Selection Guide

Part No.	Dice	Lens Type	Iv (mcd) @20mA		Viewing Angle
			Min.	MAX.	2 θ 1/2
CL-BIT1608DBW-6.5K-02	White (GaN)	Yellow Diffused	400	800	120

Note:

1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

Electrical / Optical Characteristics at T_A=25°C

Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	White			nm	IF=20mA
λD	Dominant Wavelength	White			nm	IF=20mA
Δλ1/2	Spectral Line Half-width	White			nm	IF=20mA
C	Capacitance	White			pF	VF=0V;f=1MHz
VF	Forward Voltage	White	2.8	3.2	V	IF=0mA
IR	Reverse Curren	White		2	uA	VR =5V

Remarks:

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

1. Wavelength: +/-1nm
2. Luminous Intensity: +/-15%
3. Forward Voltage: +/-0.1V

Note: Accuracy may depend on the sorting parameters

Absolute Maximum Ratings at T_A=25°C

Parameter	White	Units
Power dissipation	135	mW
DC Forward Current	30	mA
Peak Forward Current [1]	140	mA
Reverse Voltage	5	V
Operating/Storage Temperature	-40°C To +85°C	

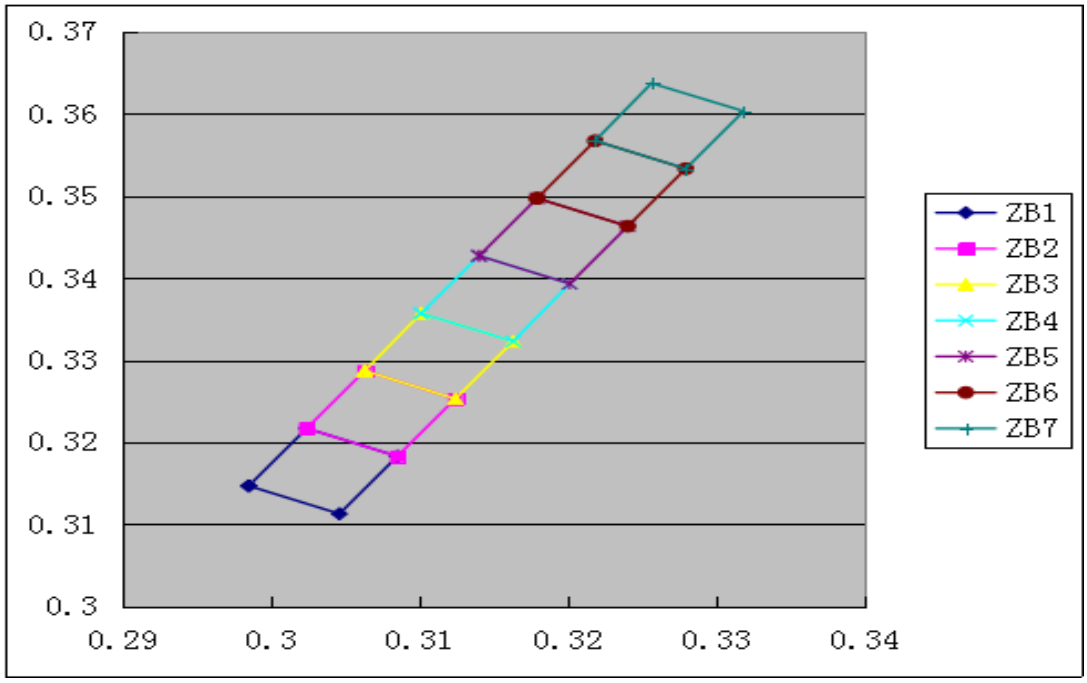
Note:

1. 1/10 Duty Cycle, 0.1ms Pulse Width.

Test condition： @20mA		
BIN Code	**V_{Fmin} (v)**	**V_{Fmax} (v)**
1	2.8	2.9
2	2.9	3.0
3	3.0	3.1
4	3.1	3.2

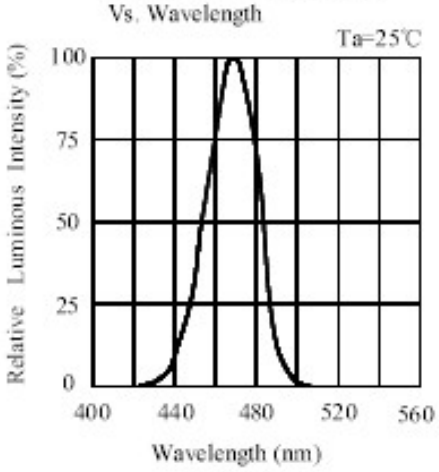
Test condition： @20mA		
BIN Code	**I_{Vmin} (mcd)**	**I_{Vmax} (mcd)**
AR1	400	500
AR2	500	600
AS1	600	700
AS2	700	800

色区分布

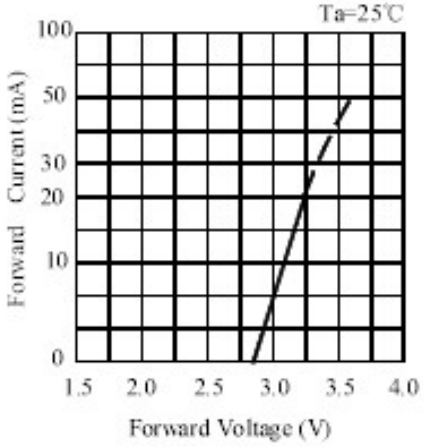


色区	X1	Y1	X2	Y2	X3	Y3	X4	Y4	X1	Y1
ZB1	0.2985	0.3147	0.3024	0.3217	0.3085	0.3183	0.3046	0.3113	0.2985	0.3147
ZB2	0.3024	0.3217	0.3063	0.3287	0.3124	0.3253	0.3085	0.3183	0.3024	0.3217
ZB3	0.3063	0.3287	0.3101	0.3357	0.3163	0.3323	0.3124	0.3253	0.3063	0.3287
ZB4	0.3101	0.3357	0.314	0.3427	0.3201	0.3393	0.3163	0.3323	0.3101	0.3357
ZB5	0.314	0.3427	0.3179	0.3497	0.324	0.3463	0.3201	0.3393	0.314	0.3427
ZB6	0.3179	0.3497	0.3218	0.3567	0.3279	0.3533	0.324	0.3463	0.3179	0.3497
ZB7	0.3218	0.3567	0.3256	0.3637	0.3318	0.3603	0.3279	0.3533	0.3218	0.3567

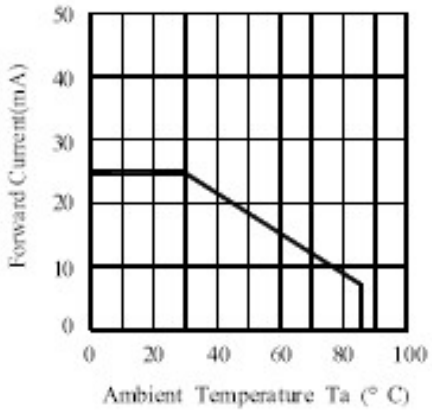
Relative Luminous Intensity
Vs. Wavelength



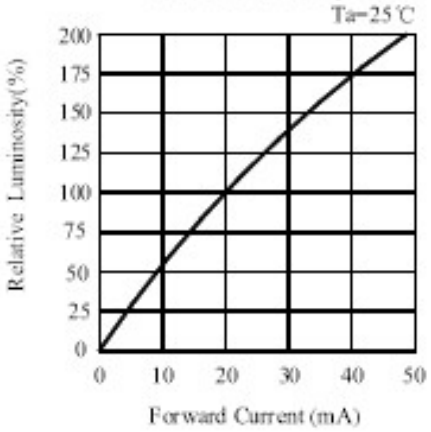
Forward Current Vs.
Forward Voltage



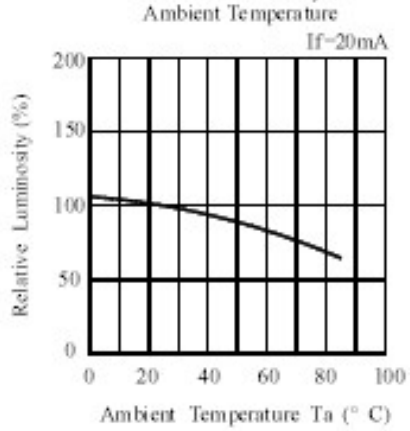
Forward Current Vs.
Ambient Temperature

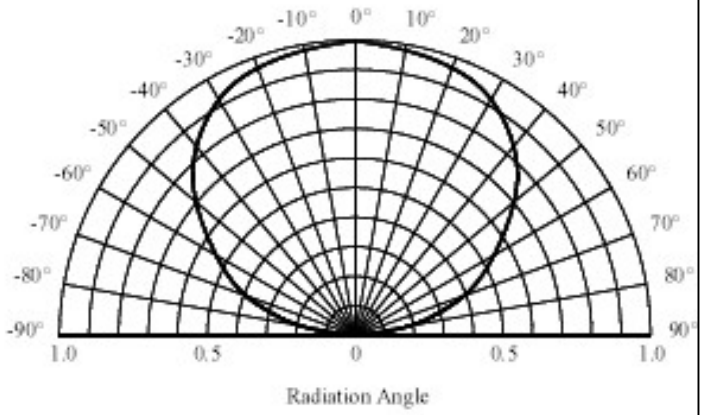


Forward Current Vs.
Relative Luminosity



Relative Luminosity Vs
Ambient Temperature





RELIABILITY

Test Items and Results

NO	TEST ITEM	Reference	TEST CONDITION	Duration/Cycle	QTY	Number of Damage
1	Temperature cycle	JEITA ED-4701	-40℃～25℃～100℃～25℃ 30 min 5 min 30 min 5 min	cycle 100 round	50	0/50
2	Thermal Shock	MIL-STD-202G	-40℃～100℃ 15 min 15	cycle 500 round	50	0/50
3	High Temperature Storage	JEITA ED-4701 200 201	T_a=100℃	1000 hour	50	0/50
4	Low Temperature Storage	JEITA ED-4701 200 201	T_a=-40℃	1000 Hour	50	0/50
5	Life Test		T_a=25±5℃ I_F=20mA	1000 Hour	50	0/50
6	Humidity Heat Storage		T_a=60℃ RH=85% I_F=20mA	1000 hous	50	0/50
7	Solderability (reflow soldering)	JEITA ED-4701 300 303	T_{sol}=235℃±5℃,5 sec use flux	Solder once, 5 seconds	10	0/10
8	Solder resistance (reflow soldering)	JEITA ED-4701 300 301	T_{sol}=260℃,10 sec preprocessing ：35℃ 95%RH 96 hour	Solder twice, 10 seconds each	10	0/10
Remark	If there are differences between the above test items and the customer's test requirements or special requirements of special customers, the trial production can be carried out according to the customer's requirements according to the actual situation.					

5. Cautions

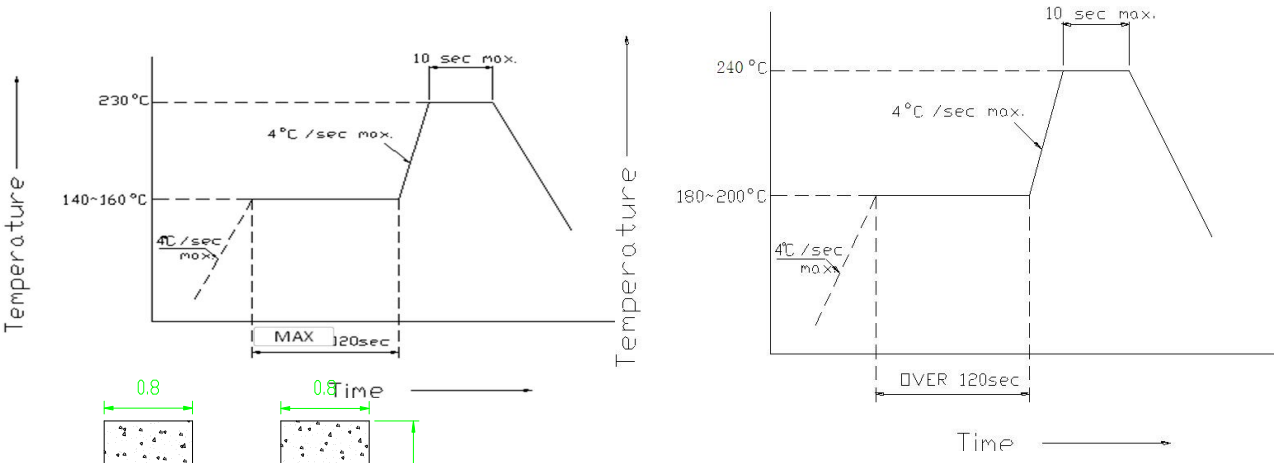
(1) Soldering Conditions

Number of reflow process shall be less than 2 times and cooling process to normal temperature is required between first and Second soldering process.

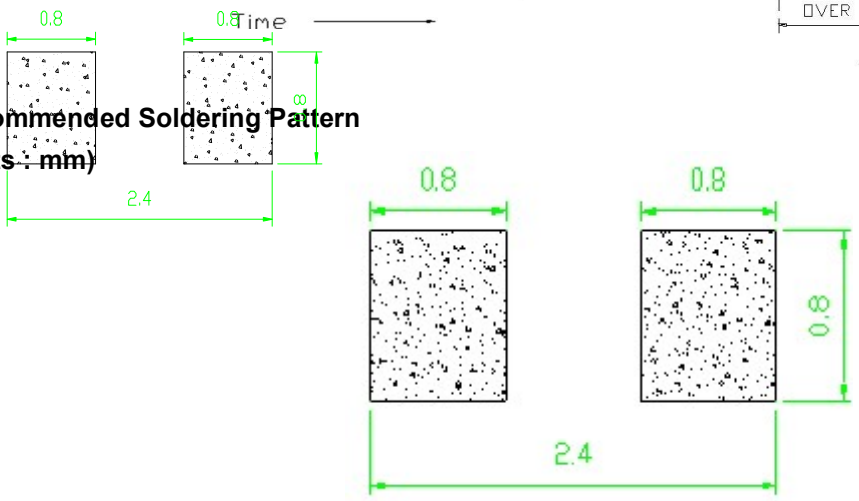
(Recommended soldering conditions)

回流焊接 Reflow Soldering			手工焊接	
	有铅 Lead Solder	无铅 Lead-free Solder	温度 Temperature	350° C Max.
预热温度 Pre-heat	140 ~ 160° C	180 ~ 200° C	焊接时间 Soldering time	3 sec. Max. (one time only)
预热时间 Pre-heat time	120 sec. Max.	120 sec. Max.		
峰值温度 Peak temperature	230° C Max.	240° C Max.		
焊接时间 Soldering time	10 sec. Max.	10 sec. Max.		
条件Condition	参考下图	参考下图		

（Lead Solder） (Lead-Free Solder)



Recommended Soldering Pattern (Units : mm)



(2) Static Electricity

It is recommended that a wrist band or an anti-electrostatic glove be used when handling the LEDs.

All devices, equipment and machinery must be properly grounded.

2.0V Damaged LEDs will show some unusual characteristics such as the forward voltage becomes lower, or the LEDs do not light at the low current. Criteria : (VF > 2.0V at IF=0.5mA)

(3) Moisture Proof Package

It is recommended that moisture proof package be used .

(4)Cautions:

4.1.

Please check if there is air leak before opening the package, if so, please return the goods back to take drying process for later using.

4.2

Products can be used within 15days after packaging, after that, they must be:

4.2.1

Soldered within 24 hrs

4.2.2

Used in the condition: 30℃ within and 60%RH below

4.2.3

Stored in 30%RH for moisture below.

4.3.

Products cannot be used for and over 15days after being packaged unless opening the package and take drying our process in 85℃/6H.

4.4.

Products not be used for or over 60days after being packaged please return back to take drying out and packaging process for forward using.

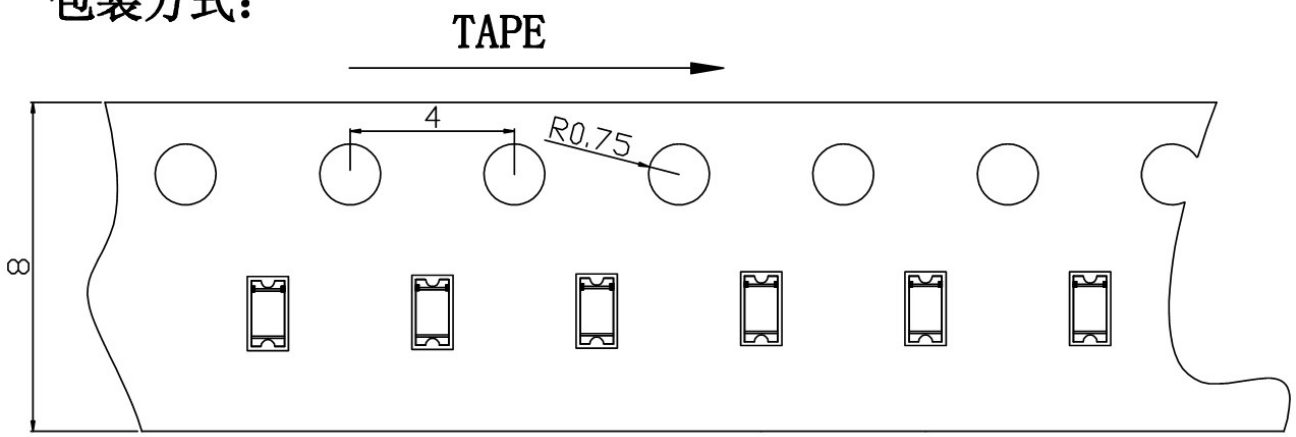
4.5.

Products not be used after opening the package need to be dried out for 85℃/6H

PACKAGING

The LEDs are packed in cardboard boxes after taping.

包装方式：



Package: 4000 pcs/reel

Reel Dimensions

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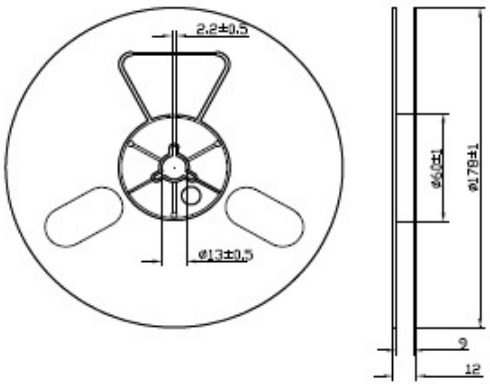
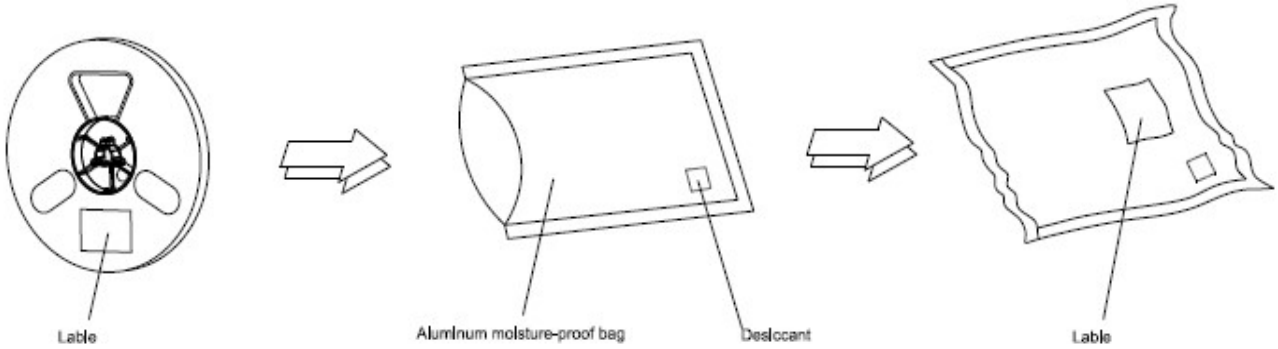


Moisture Resistant Packaging



Note:The tolerances unless mentioned is ±0.1mm,Unit:mm