



Data Sheet

Customer:

Part No:

CL-BIT1608DBW-10K-02(2mA)

Sample No:

Description:

1608 SMD White Color

Item No:

Customer			
Check	Inspection	Approval	Date

Features

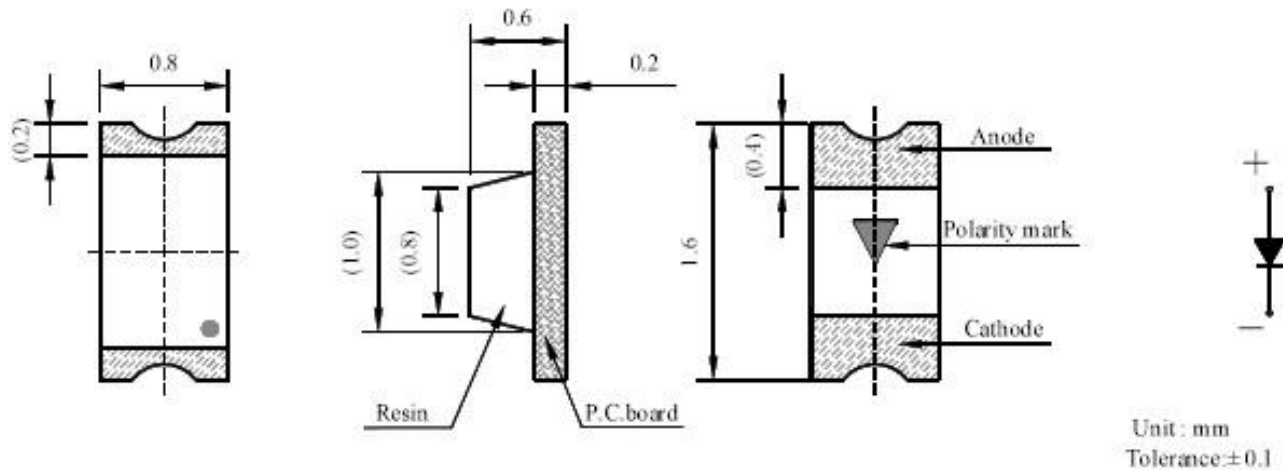
- _1.6mmX0.8mm SMT LED, 0.60mm THICKNESS.
- _LOW POWER CONSUMPTION.
- _WIDE VIEWING ANGLE.
- _IDEAL FOR BACKLIGHT AND INDICATOR.
- _VARIOUS COLORS AND LENS TYPES AVAILABLE.
- _PACKAGE: 4000 PCS / REEL.
- _RoHS COMPLIANT.

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) @2mA		Viewing Angle
			Min.	MAX.	2 θ 1/2
CL-BIT1608DBW-10K-02(2mA)	White (GaN)	Yellow Diffused	36	115	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 TA=25°C

Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
λD	Dominant Wavelength	White	7000	12000	K	IF=2mA
Δλ1/2	Spectral Line Half-width	White			nm	IF=2mA
C	Capacitance	White			pF	VF=0V;f=1MHz
VF	Forward Voltage	White	2.4	2.8	V	IF=2mA
IR	Reverse Current	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 TA=25°C

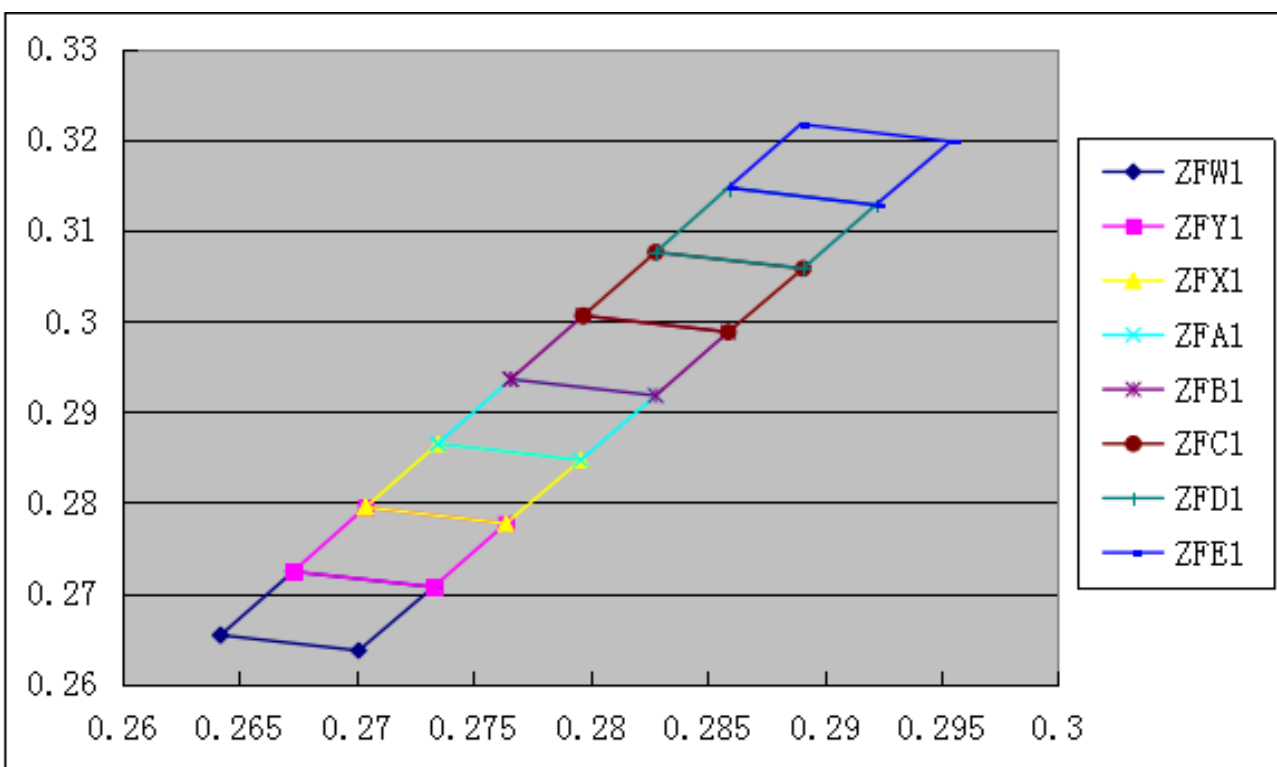
Parameter	White	Units
Power dissipation	135	mW
DC Forward Current	30	mA
Peak Forward Current [1]	100	mA
Reverse Voltage	5	V
Operating/Storage Temperature	-40°C To +85°C	

Note:

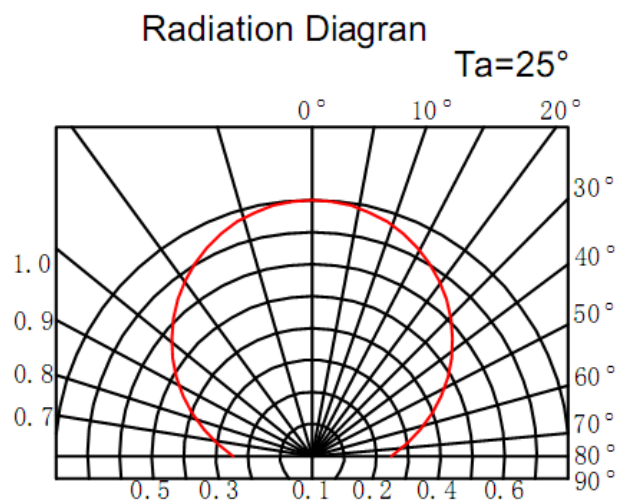
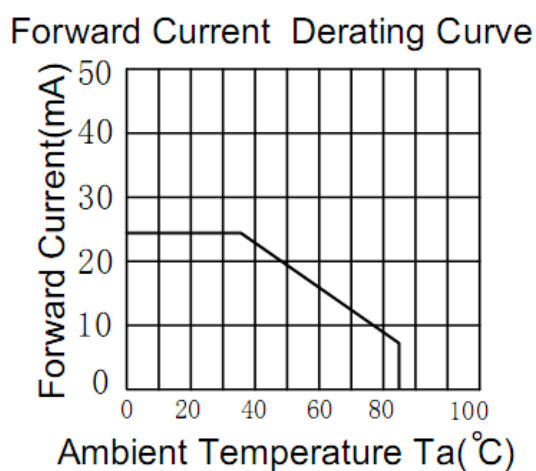
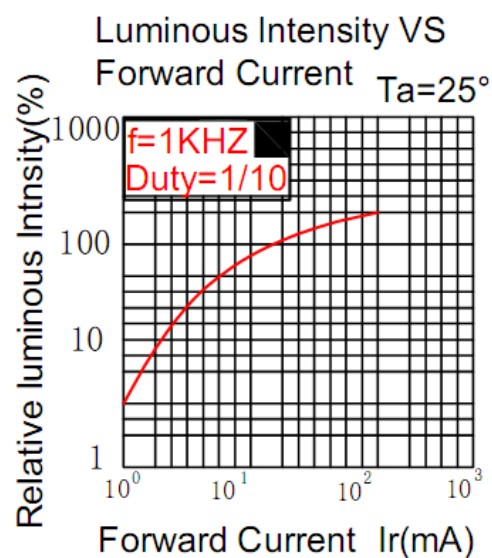
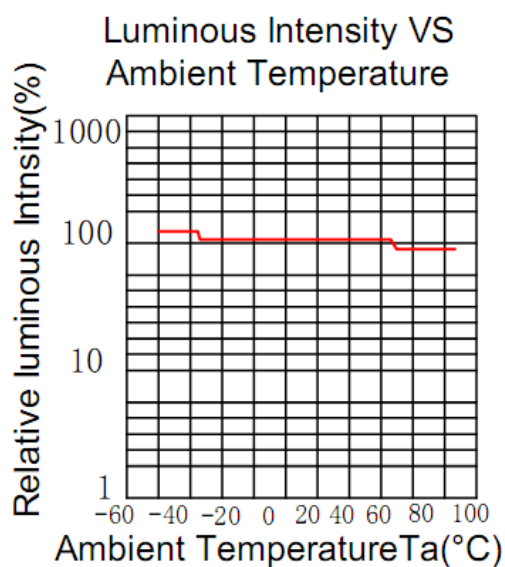
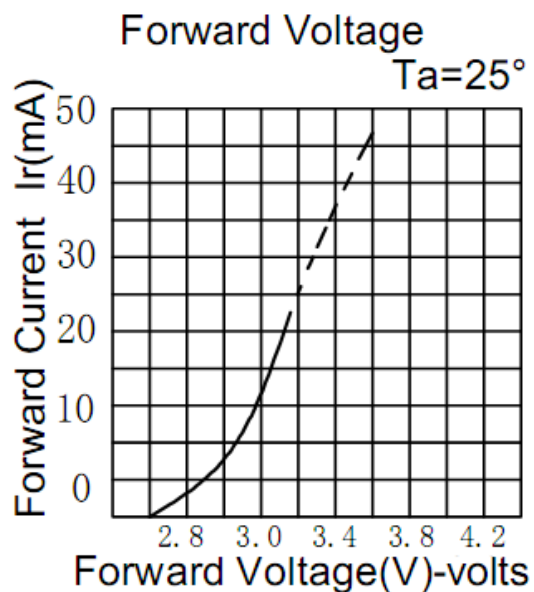
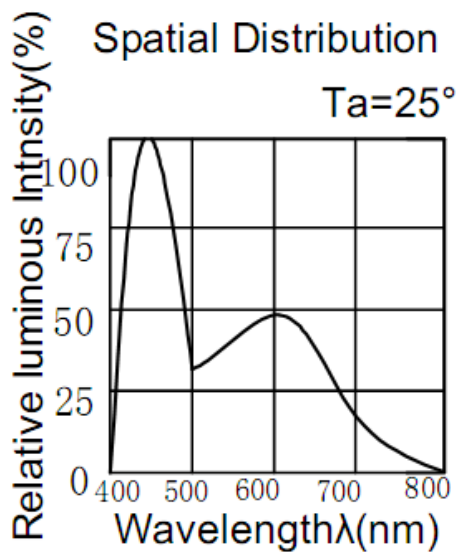
1. 1/10 Duty Cycle, 0.1ms Pulse Width.

Test condition: @2mA		
BIN Code	V _{Fmin} (v)	V _{Fmax} (v)
1	2.4	2.5
2	2.5	2.6
3	2.6	2.7
4	2.7	2.8

Test condition: @20mA		
BIN Code	I _{Vmin} (mcd)	I _{Vmax} (mcd)
H1	36	45
H2	45	57
J1	57	72
J2	72	90
K1	90	115



序号	X1	Y1	X2	Y2	X3	Y3	X4	Y4	X1	Y1
ZFW1	0.2642	0.2654	0.2701	0.2637	0.2733	0.2707	0.2673	0.2724	0.2642	0.2654
ZFY1	0.2673	0.2724	0.2733	0.2707	0.2764	0.2777	0.2704	0.2795	0.2673	0.2724
ZFX1	0.2704	0.2795	0.2764	0.2777	0.2796	0.2847	0.2735	0.2865	0.2704	0.2795
ZFA1	0.2735	0.2865	0.2796	0.2847	0.2828	0.2918	0.2766	0.2936	0.2735	0.2865
ZFB1	0.2766	0.2936	0.2828	0.2918	0.2859	0.2988	0.2797	0.3006	0.2766	0.2936
ZFC1	0.2797	0.3006	0.2859	0.2988	0.2891	0.3058	0.2828	0.3076	0.2797	0.3006
ZFD1	0.2828	0.3076	0.2891	0.3058	0.2922	0.3128	0.2859	0.3147	0.2828	0.3076
ZFE1	0.2859	0.3147	0.2922	0.3128	0.2954	0.3198	0.289	0.3217	0.2859	0.3147



RELIABILITY

Test Items and Results

No.	Test item	Standard	Test Conditions	Hours/ Cycles	Sample	Number of Damagfed
1	Temperature cycle	JEITA ED-4701	-40℃ ~ 25℃ ~ 100℃ ~ 25℃ 30min 5min 30min 5min	100 Cycles	50	0/50
2	Thermal Shock	MIL-STD- 202G	-40℃ ~ 100℃ 15min 15min	500 Cycles	50	0/50
3	High Temperature Storage	JEITA ED-4701 200 201	T _a =100℃	1000 hours	50	0/50
4	Low Temperature Storage	JEITA ED-4701 200 201	T _a =-40℃	1000 hours	50	0/50
5	Life Test		T _a =25±5℃ I _F =20mA	1000 hours	50	0/50
6	High Humidity Heat Life Test		T _a =60℃ RH=85% I _F =20mA	1000 hours	50	0/50
7	Solderability (reflow soldering)	JEITA ED-4701 300 303	T _{sol} =235℃±5℃, 5 秒 Use flux	Weld once, 5 seconds	10	0/10
8	Solder resistance (reflow soldering)	JEITA ED-4701 300 301	T _{sol} =260℃, 10 秒 Pretreatment : 35℃ 95% RH 96 hours	Weld twice, 10 seconds each time	10	0/10

If the above test items are different from the customer's test requirements or have special customer requirements, they can be trial-produced according to the actual situation and in accordance with the customer's requirements. If the customer does not require it, the trial-production should be carried out according to our company's test standards. Different products use different currents for testing.

5. Cautions

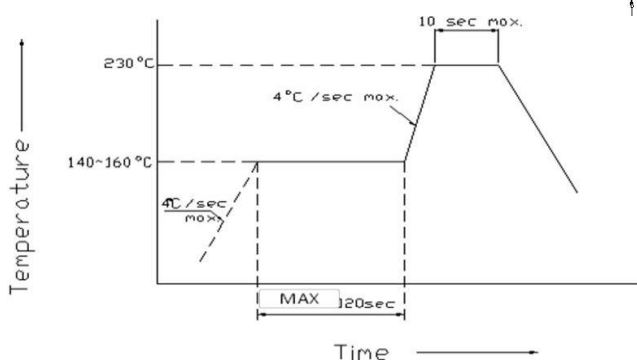
(1) Soldering Conditions

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

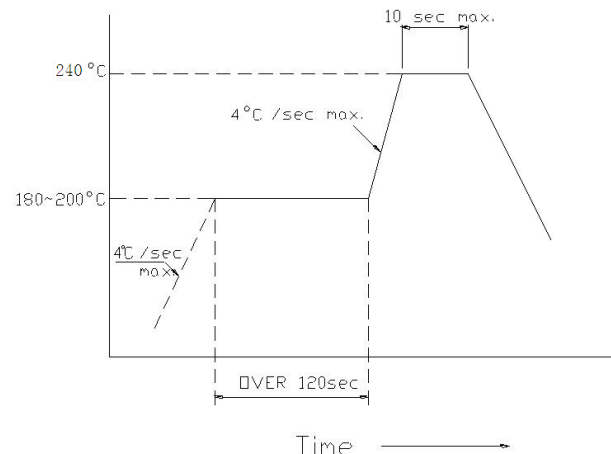
(Recommended soldering conditions)

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

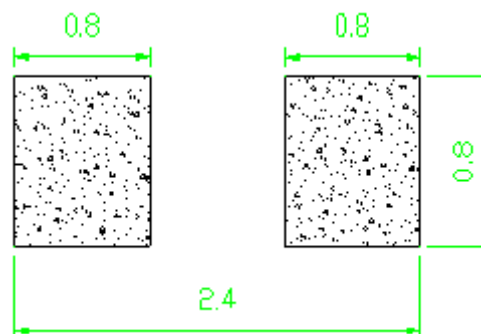
(Lead Solder)



(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.

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 : ($V_F > 2.0V$ at $I_F=0.5mA$)

(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: $30^{\circ}C$ 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 $85^{\circ}C/6H$.

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.

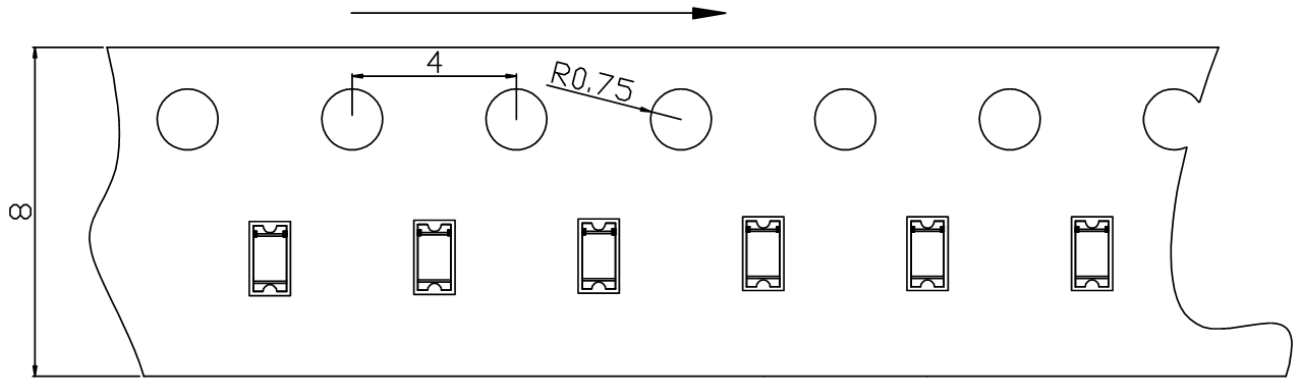
4.5.Products not be used after opening the package need to be dried out for $85^{\circ}C/6H$

PACKAGING

The LEDs are packed in cardboard boxes after taping.

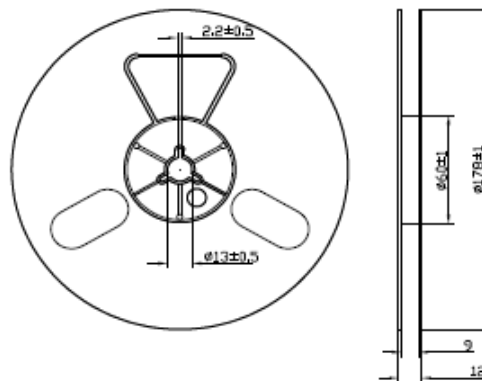
包装方式:

TAPE

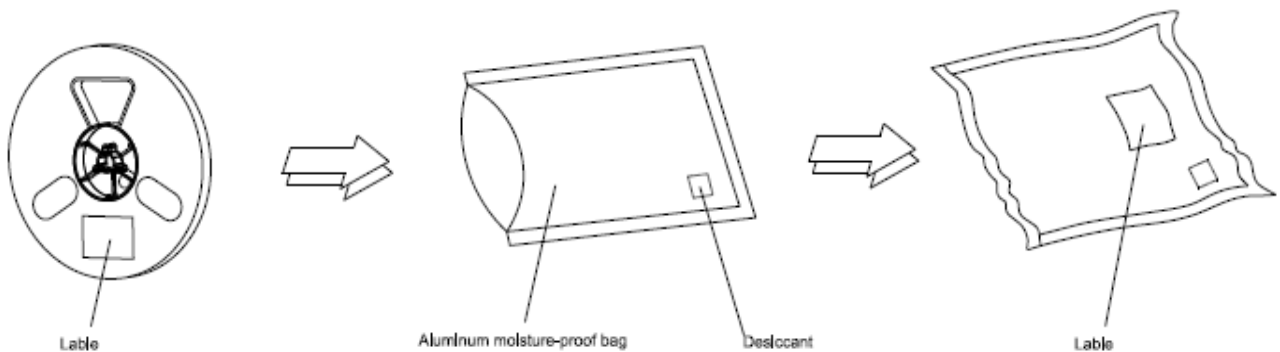


Package: 4000 pcs/reel

Reel Dimensions



Moisture Resistant Packaging



Note: The tolerances unless mentioned is $\pm 0.1\text{mm}$, Unit: mm