Data   Sheet

Customer:

Part No: CL-SP1606DBW-02

Sample No:

Description: 1606 SMD White Color

Item No:

Customer			
Check	Inspection	Approval	Date

ATTENTION
注　意
ESD protected area
静 电 防 护 区 域
Observe precautions for handling electrostatic discharge sensitive devices
接 触 静 电 放 电 敏 感 元 件 时 请 采 取 适 当 的 预 防 措 施

Features

_1.7mmX0.6mm SMT LED, 1.1mm   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
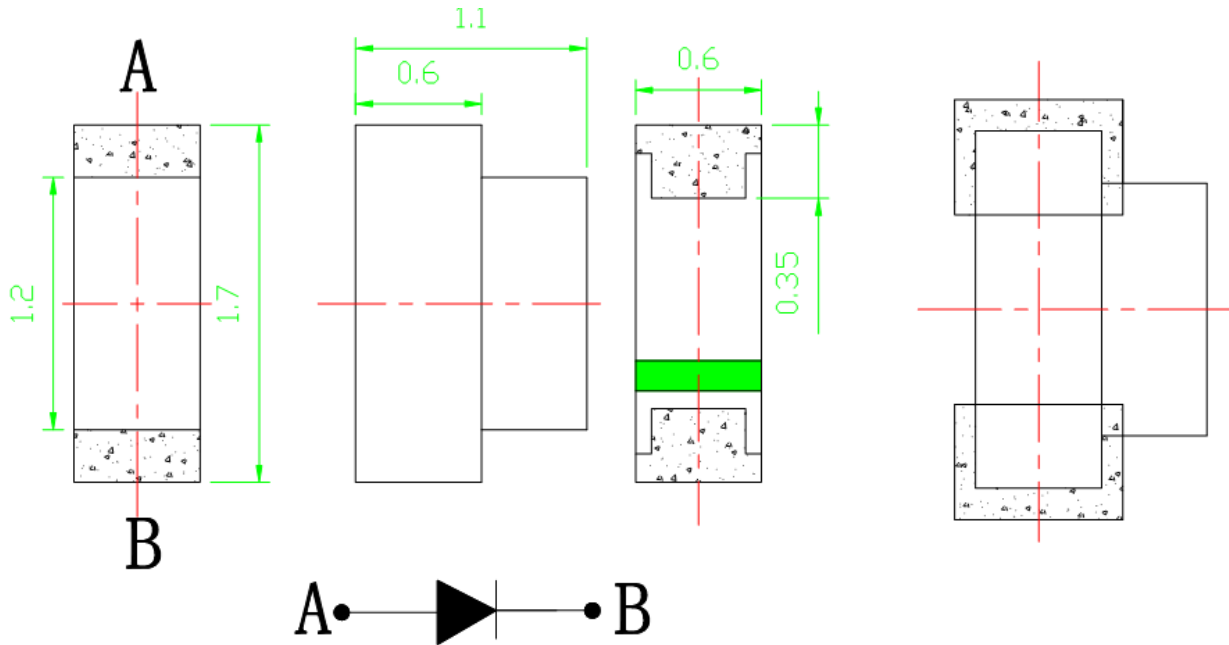
Notes:

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.

2

Selection Guide

Part No.	Dice	Lens Type	Iv (mcd) @ 20mA		Viewing Angle
			Min.	MAX.	2 θ 1/2
CL-SP1606DBW-02	White (GaN)	Yellow Diffused	500	1000	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
λD	Dominant Wavelength	White	7500K	12500K	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	3.4	V	IF=20mA
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

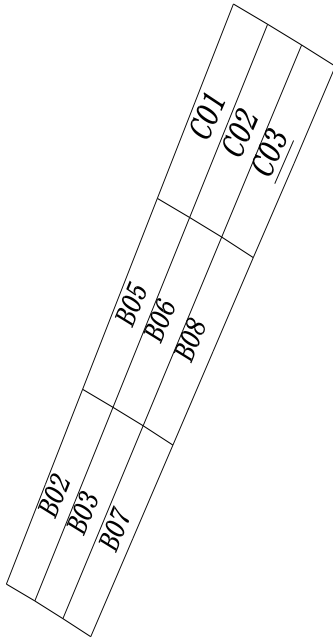2. Luminous Intensity: +/-15%

3. Forward Voltage: +/-0.1V

Note: Accuracy may depend on the sorting parameters
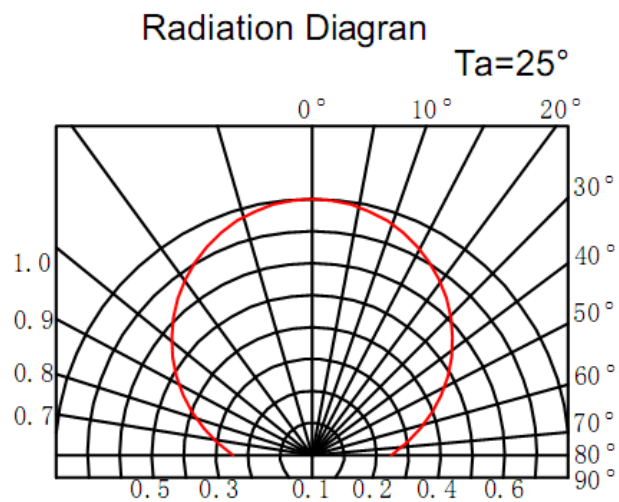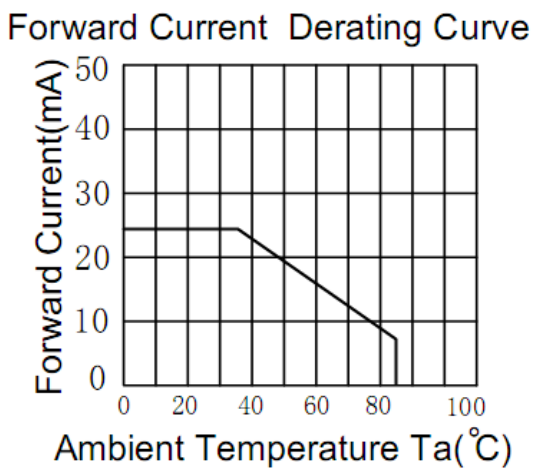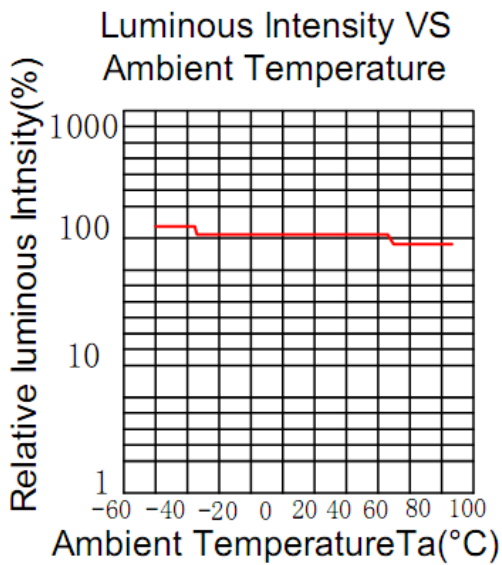
Absolute Maximum Ratings at T$_A$=25°C

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.

色区 坐标	X1	Y1	X2	Y2	X3	Y3	X4	Y4
B02	0.2729	0.2682	0.2699	0.2697	0.2780	0.2866	0.2812	0.2850
B03	0.2759	0.2667	0.2729	0.2682	0.2812	0.2850	0.2845	0.2834
B07	0.2789	0.2651	0.2759	0.2667	0.2845	0.2834	0.2876	0.2817
B05	0.2812	0.2850	0.2780	0.2866	0.2860	0.3031	0.2894	0.3015
B06	0.2845	0.2834	0.2812	0.2850	0.2894	0.3015	0.2928	0.2998
B08	0.2876	0.2817	0.2845	0.2834	0.2928	0.2998	0.2962	0.2980
C01	0.2894	0.3015	0.2860	0.3031	0.2941	0.3200	0.2977	0.3182
C02	0.2928	0.2998	0.2894	0.3015	0.2977	0.3182	0.3013	0.3164
C03	0.2962	0.2980	0.2928	0.2998	0.3013	0.3164	0.3049	0.3146

Spatial Distribution

Ta=25°

Relative luminous Intnsity(%) vs Wavelengthλ(nm)

Forward Voltage

Ta=25°

Forward Current Ir(mA) vs Forward Voltage(V)-volts

Luminous Intensity VS Ambient Temperature

Relative luminous Intnsity(%) vs Ambient TemperatureTa(°C)

Luminous Intensity VS Forward Current

Ta=25°

f=1KHZ
Duty=1/10

Relative luminous Intnsity(%) vs Forward Current Ir(mA)

Forward Current Derating Curve

Forward Current(mA) vs Ambient Temperature Ta(°C)

Radiation Diagran

Ta=25°

RELIABILITY

Test Items and Results

NO.	Test Item	Reference Standard	Test Condition	(Hours/ Cycles)	Sample	Number of Damaged
1	Temperature Cycle	JEITA ED-4701	-40℃～25℃～100℃～25℃ 30 min 5 min 30 min 5 min	100 Cycles	50	0/50
2	Thermal Shock	MIL-STD-202G	-40℃～100℃ 15 分钟 15 分钟	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 Sotrage	JEITA ED-4701 200 201	T_a=-40℃	1000 Hours	50	0/50
5	Room Temperature Life Test		T_a=25±5℃ I_F=20mA	1000 Hours	50	0/50
6	High Temperature High Humidity 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 sec (Using Flux,Lead Solder)	1 time, 5 sec	10	0/10
8	Resistance to Soldering Heat (Reflow Soldering)	JEITA ED-4701 300 301	T_{sol}=260℃,10 sec Pre Treatment：35℃ 95%RH 96 Hrs	2 time, 10 sec	10	0/10

The above test items such as differences or special customer specific requirements according to the actual situation in accordance with the requirements of customers to try the requirements with the customer, the customer is not required by our test standard test. Different products using different current test.

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.
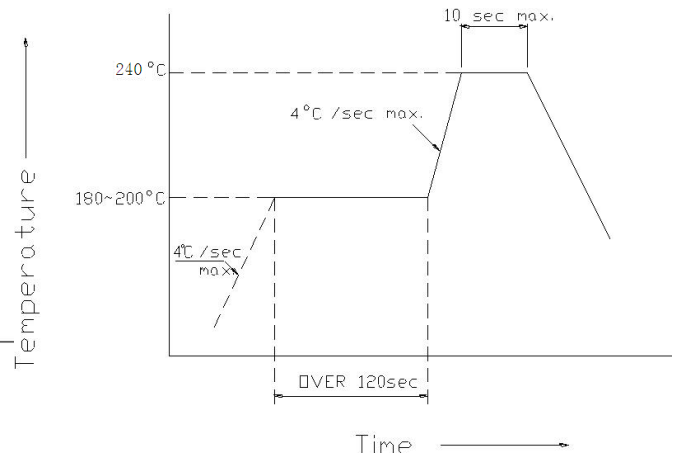
(Recommended soldering conditions)

回流焊接 Reflow Soldering			手工焊接	
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	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)
	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		
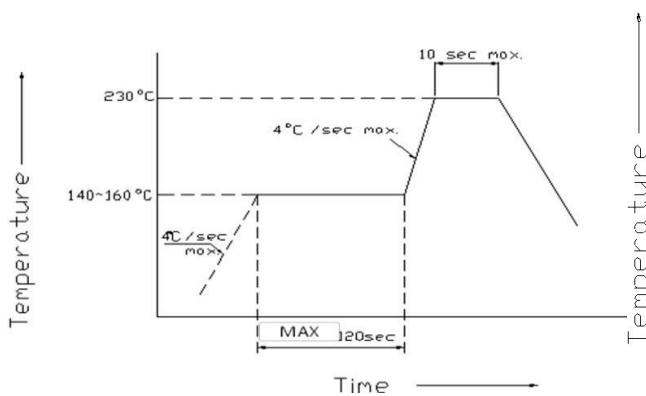
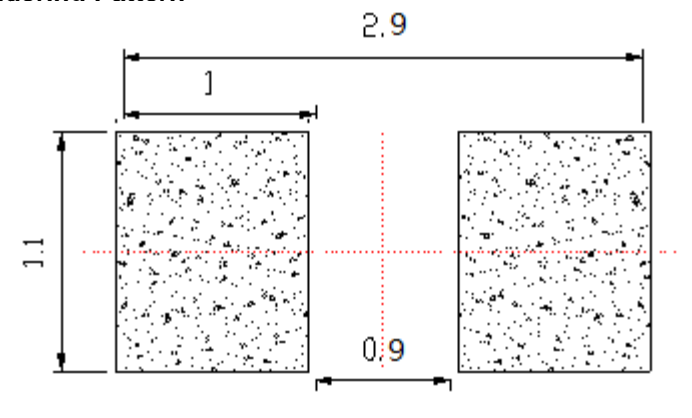（Lead Solder）   (Lead-Free Solder)

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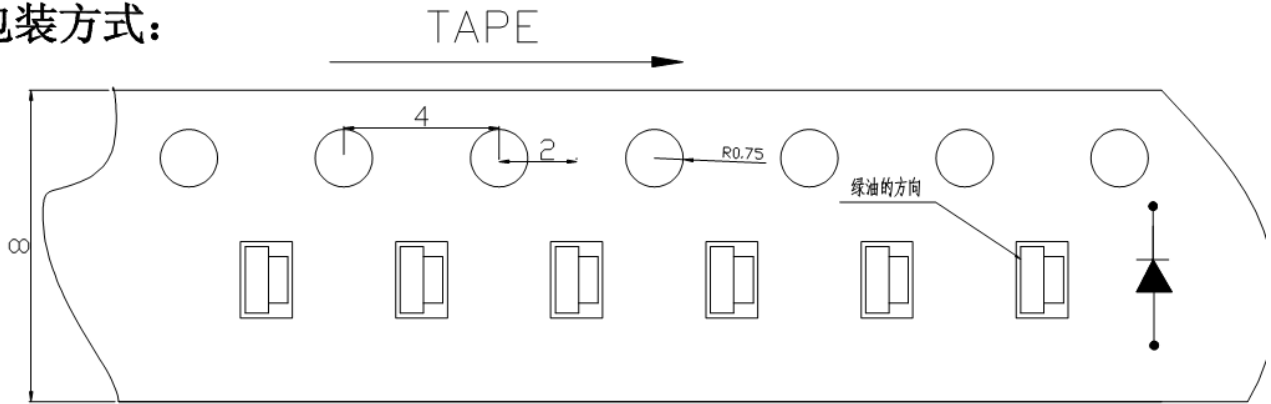
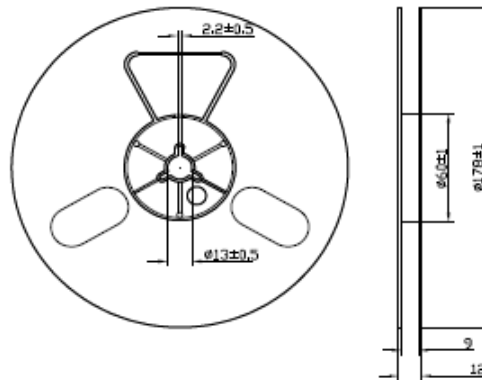4.5. Products not be used after opening the package need to be dried out for 85℃/6H

PACKAGING

The LEDs are packed in cardboard boxes after taping.

包装方式：

TAPE

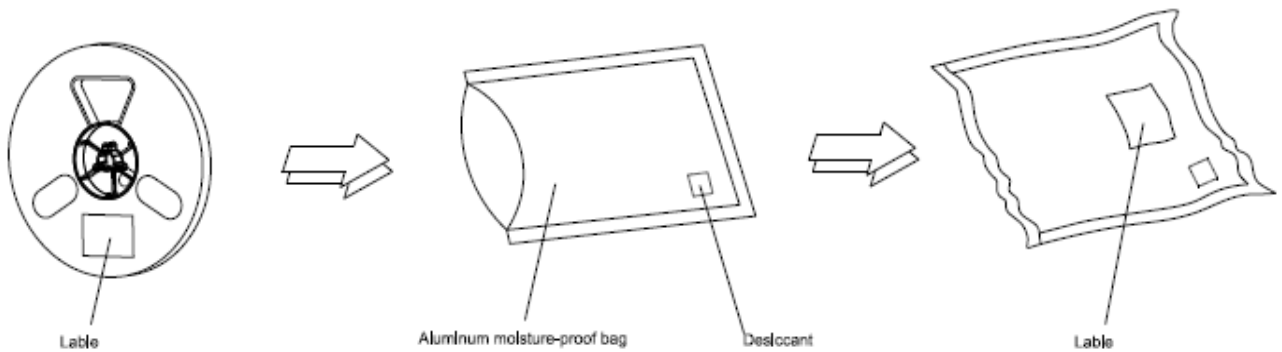Package:4000PCS/reel

Reel Dimensions

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Moisture Resistant Packaging

Lable

Aluminum moisture-proof bag

Desiccant

Lable

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