Data Sheet

Customer:

Part No: CL-SP192UHRDNB-02

Sample No:

Description: 1608 SMD R+B Bi Color

Item No:

Customer			
Check	Inspection	Approval	Date

Features

_ 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 : 4000PCS / REEL.

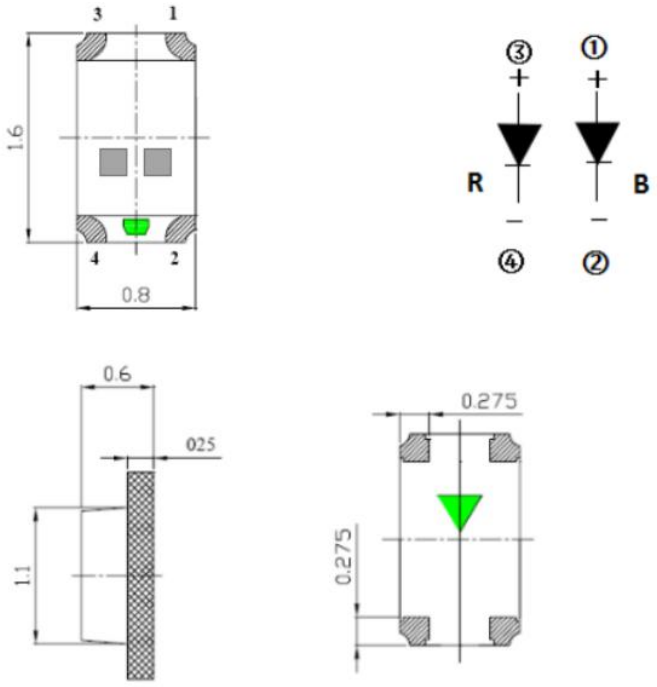
_RoHS COMPLIANT.

Description

The Blue source color devices are made with GaN on Sapphire Light Emitting Diode.

The Hyper Red source color devices are made with DH InGaAlP on GaAs substrate Light Emitting Diode

Package Dimensions



DB0606A2

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) @ 5mA		Viewing Angle
			Min.	Typ.	2 θ 1/2
CL-SP192UHRDNB-02	BLUE (GaN)	WATER CLEAR	180	210	120
	RED (InGaAlP)		100	160	

Note:

1. θ 1/2 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	Blue Red			nm	IF=20mA
λD	Dominant Wavelength	Blue Red	460 620	475 630	nm	IF=5mA
Δλ1/2	Spectral Line Half-width	Blue Red	25 20		nm	IF=20mA
C	Capacitance	Blue Red	100 25		pF	VF=0V;f=1MHz
VF	Forward Voltage	Blue Red	2.8 1.8	3.2 2.2	V	IF=5mA
IR	Reverse Curren	Blue Red		5 5	uA	VR = 5V

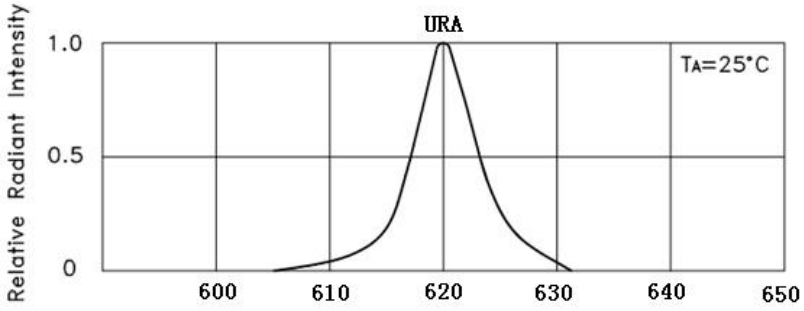
Absolute Maximum Ratings at T_A=25°C

Parameter	Blue	Red	Units
Power dissipation	105	75	mW
DC Forward Current	30	30	mA
Peak Forward Current [1]	135	80	mA
Reverse Voltage	5	5	V
Operating/Storage Temperature	-40°C To +85°C		

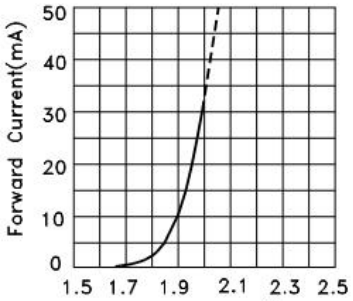
Note:

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

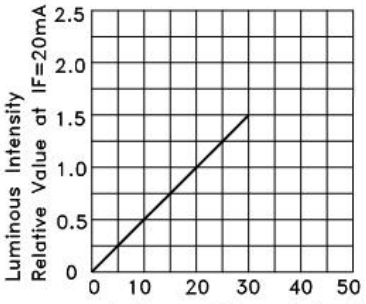
Red



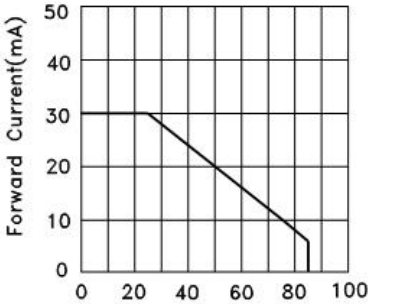
RELATIVE INTENSITY Vs. WAVELENGTH



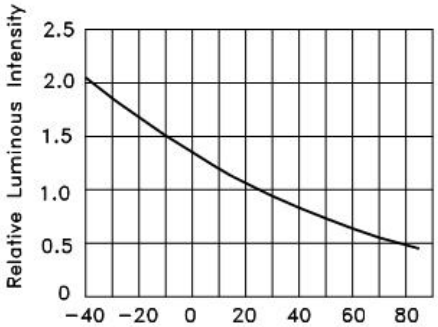
FORWARD CURRENT Vs.
FORWARD VOLTAGE



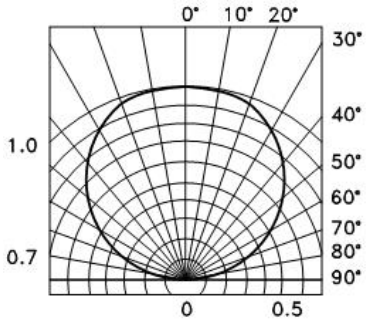
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE

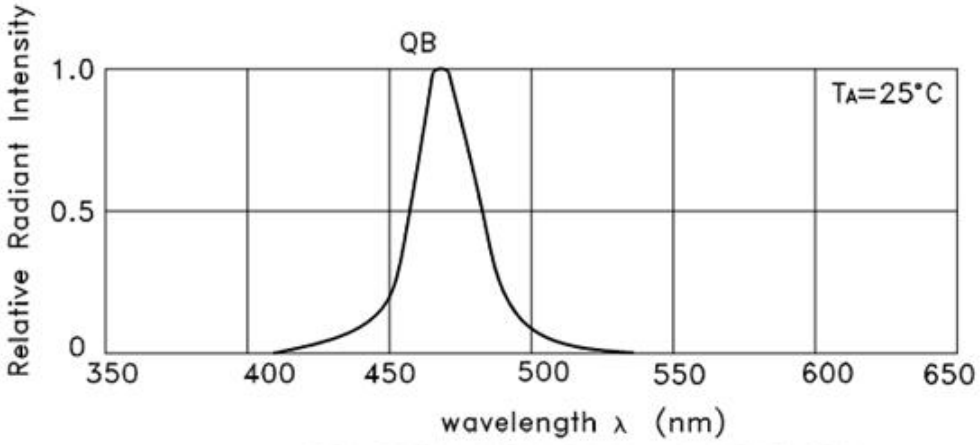


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

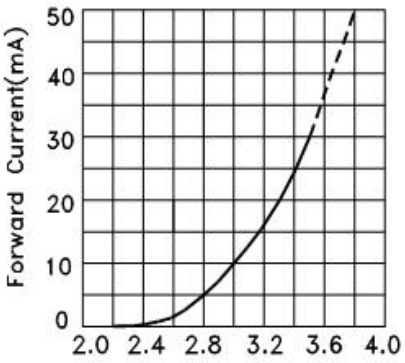


SPATIAL DISTRIBUTION

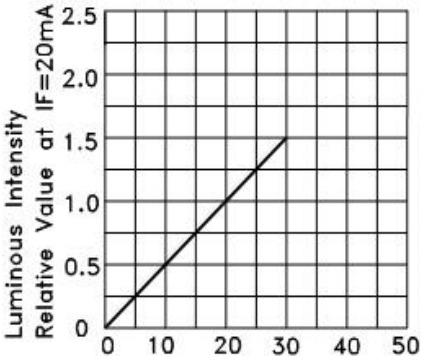
Blue



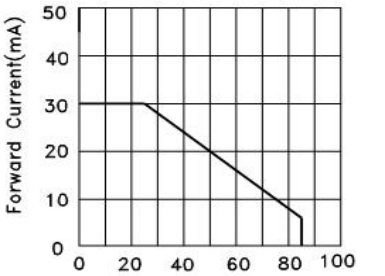
RELATIVE INTENSITY Vs. WAVELENGTH



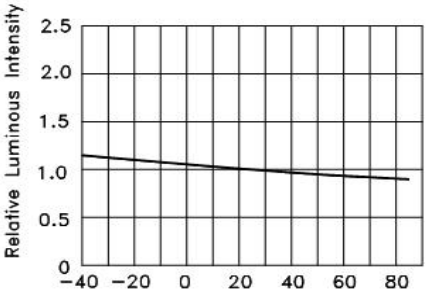
FORWARD CURRENT Vs.
FORWARD VOLTAGE



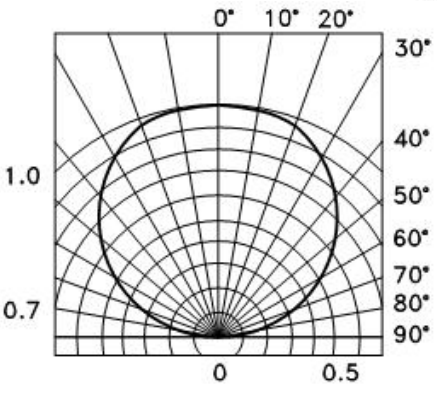
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE



LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE



SPATIAL DISTRIBUTION

RELIABILITY

Test Items and Results

NO.	Test Item	Reference Standard	Test Conditions	Note (Hours/Cycles)	Sample	Number of Damaged
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	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℃,5sec (Using Flux, Lead Solder)	1 time, 5sec	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, 10sec	10	0/10

Cautions

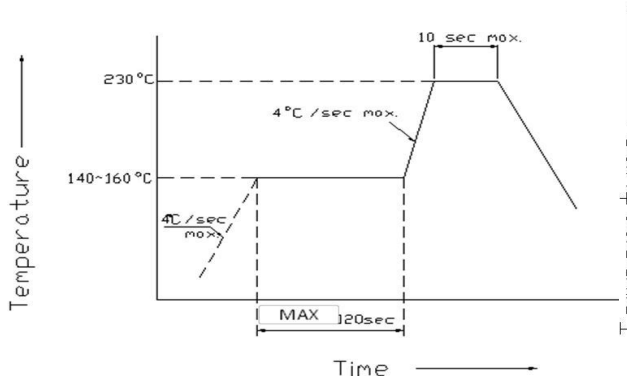
(1) Soldering Conditions

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

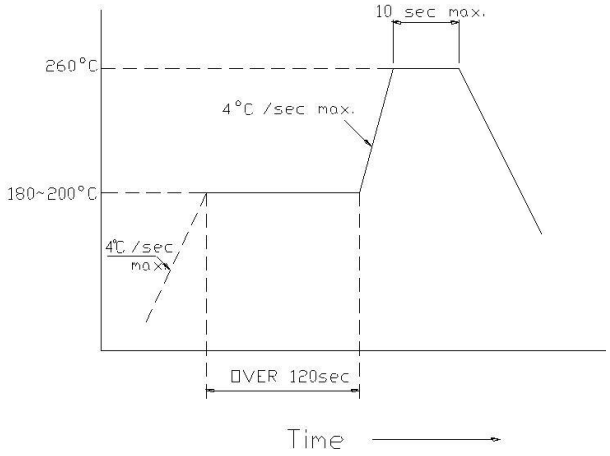
Recommended soldering conditions

Reflow Soldering			Hand Soldering	
Pre-heat Pre-heat time Peak temperature Soldering time Condition	Lead Solder	Lead-free Solder	Temperature Soldering time	350 ° C 3 sec. Max. (one time only)
	140~160 ° C 120 sec. Max. 230 ° C Max. 10 sec. Max	180~200 ° C 120 sec. Max. 260 ° C Max. 10 sec. Max		

Lead Solder

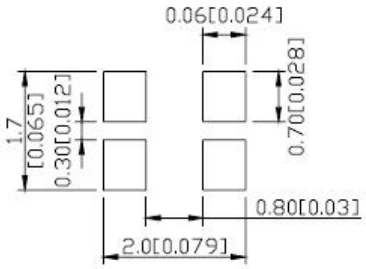


Lead-Free Solder



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.

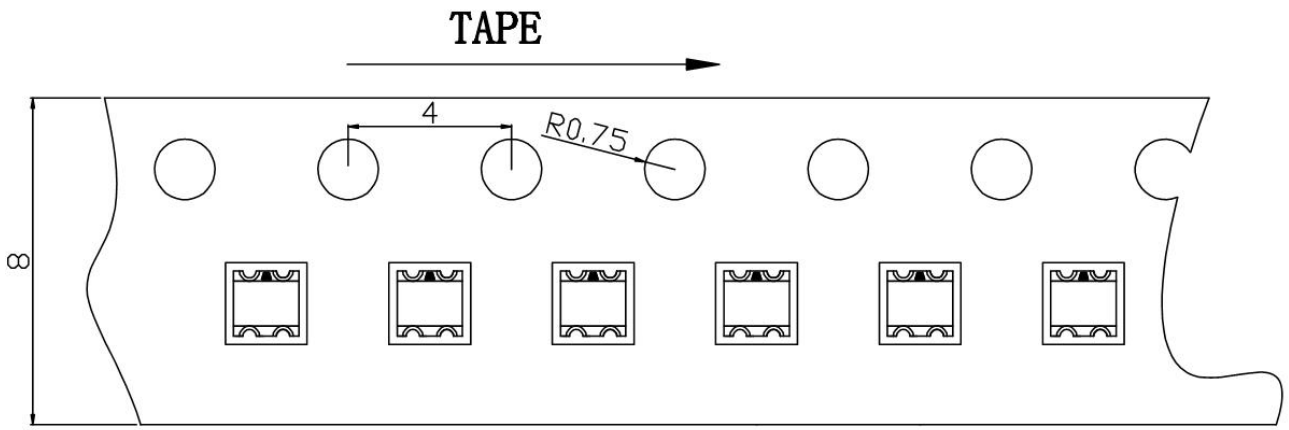
4.3. Products cannot be used for and over 15days after being packaged unless opening the package and take drying our process in 85℃/6H.

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.



Package: 4000 pcs/reel

Reel Dimensions

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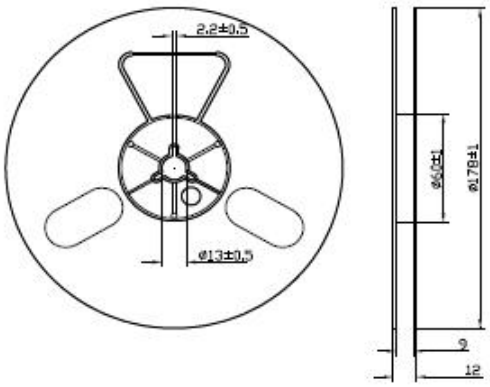
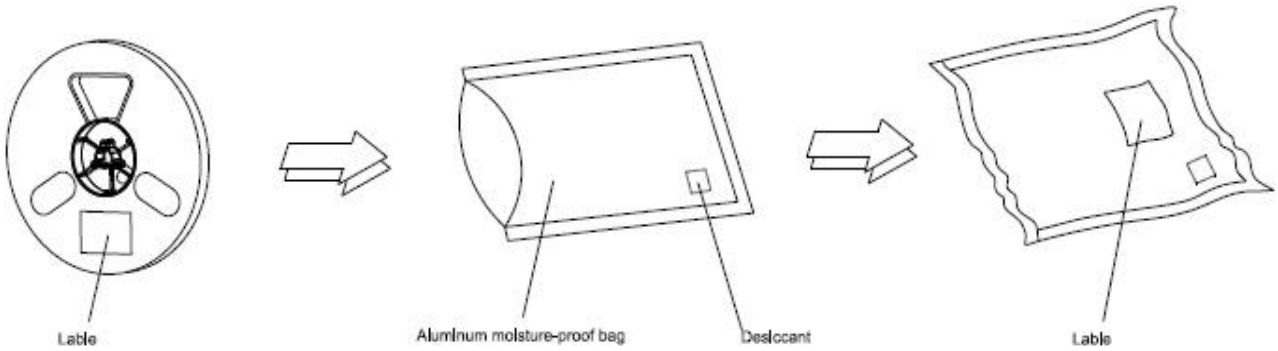


Moisture Resistant Packaging



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