



Data Sheet

Customer: _____
Part No: CL-SP192UYGDNB-02
Sample No: _____
Description: _____
Item No: _____

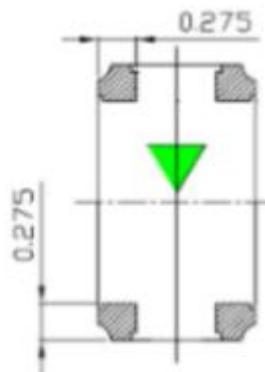
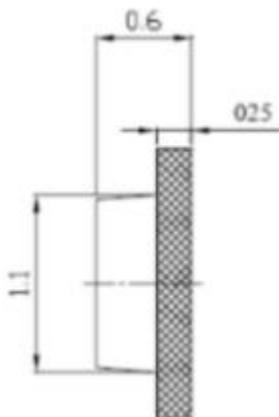
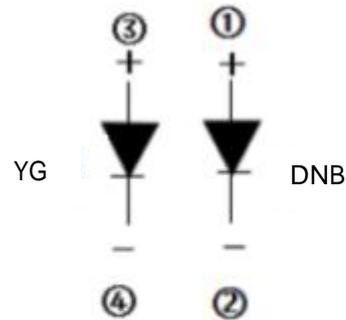
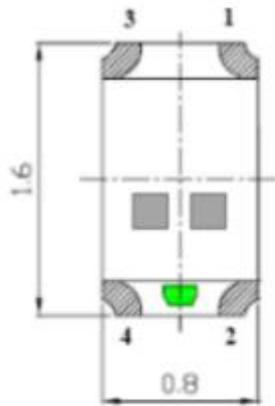
Customer			
Check	Inspection	Approval	Date


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: 4000PCS / 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 $\pm 0.1(0.004")$ unless otherwise noted.
3. Specifications are subject to change without notice.

Selection Guide

Part No.	Dice	Lens Type	Iv (mcd) @ 20mA		Viewing Angle
			Min.	Typ.	2 θ 1/2
CL-SP192UYGDNB-02	Brilliant Blue(InGaAlP)	WATER CLEAR	200	300	120
	Brilliant YellowGreen(AlGaInP)	WATER CLEAR	20	40	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	Min	Max.	Units	Test Conditions
λ _{peak}	Peak Wavelength	Brilliant Blue	460	475	nm	IF=20mA
		Brilliant YellowGreen	568	574		
λ _D	Dominant Wavelength	Brilliant Blue			nm	IF=20mA
		Brilliant YellowGreen				
Δλ _{1/2}	Spectral Line Half-width	Brilliant Blue	29		nm	IF=20mA
		Brilliant YellowGreen	29			
C	Capacitance	Brilliant Blue	30		pF	VF=0V;f=1MHz
		Brilliant YellowGreen	30			
VF	Forward Voltage	Brilliant Blue	2.8	3.1	V	IF=20mA
		Brilliant YellowGreen	1.8	2.1		
IR	Reverse Curren	Brilliant Blue		2	uA	VR = 7V
		Brilliant YellowGreen		2		

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

Note: Accuracy may depend on the sorting parameter

Absolute Maximum Ratings at TA=25°C

Parameter	Brilliant Blue	Brilliant YellowGreen	Units
Power dissipation	50	50	mW
DC Forward Current	30	30	mA
Peak Forward Current [1]	100	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.

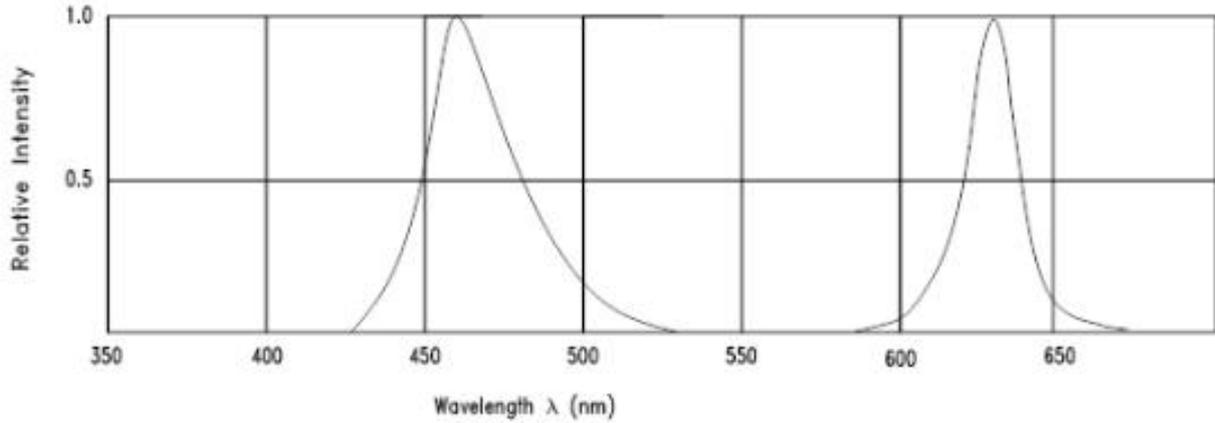


Fig.1 Relative Intensity vs. Wavelength

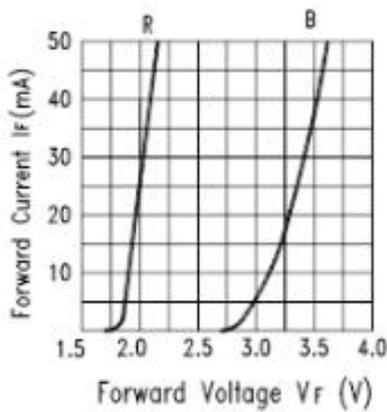


Fig.2 Forward Current vs. Forward Voltage

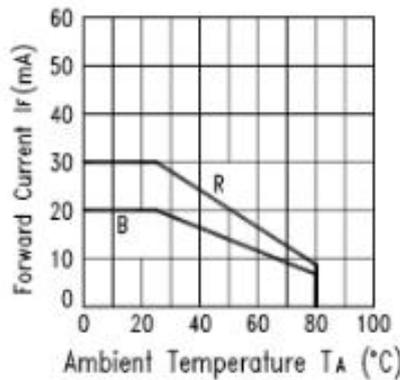


Fig.3 Forward Current Derating Curve

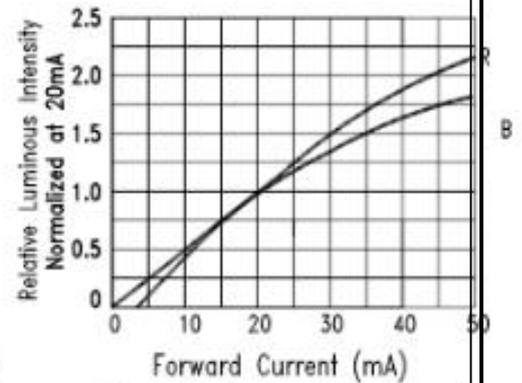


Fig.4 Relative Luminous Intensity vs. Forward Current

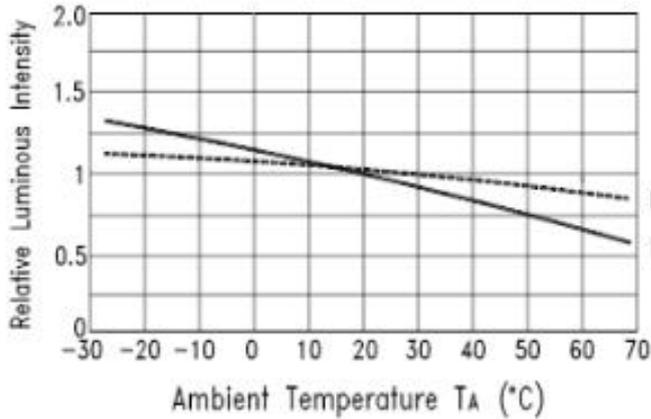


Fig.5 Luminous Intensity vs. Ambient Temperature

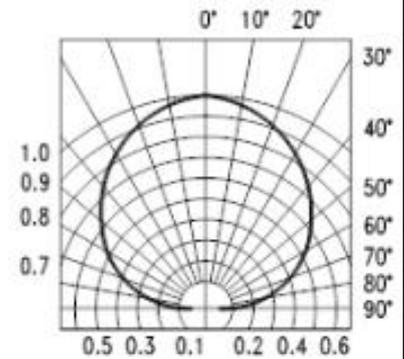
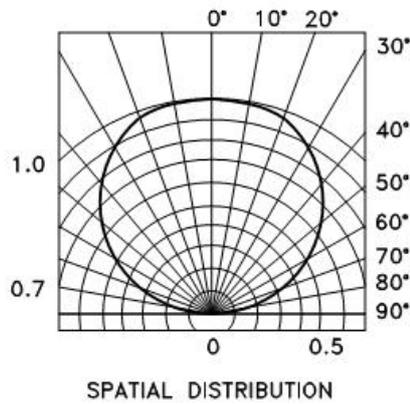
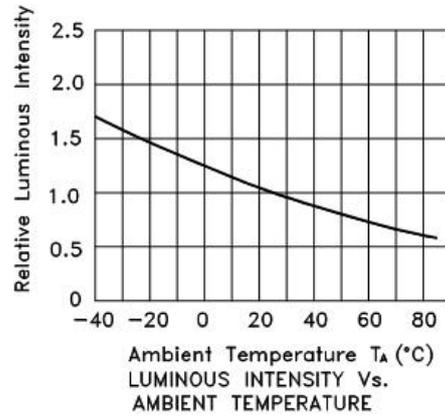
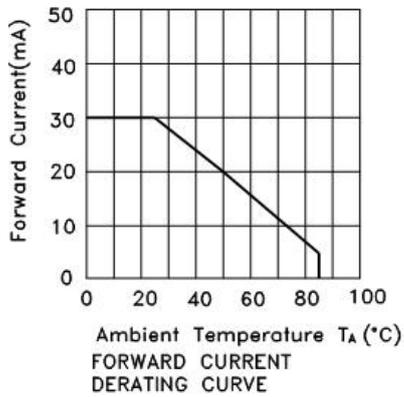
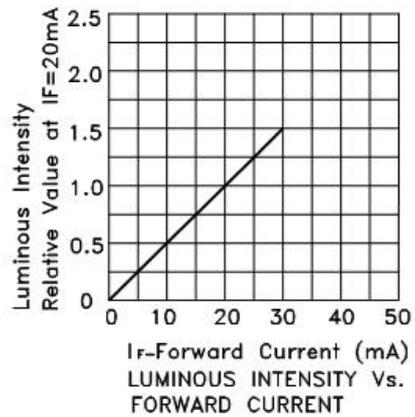
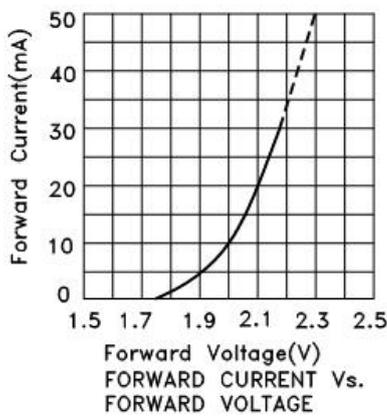
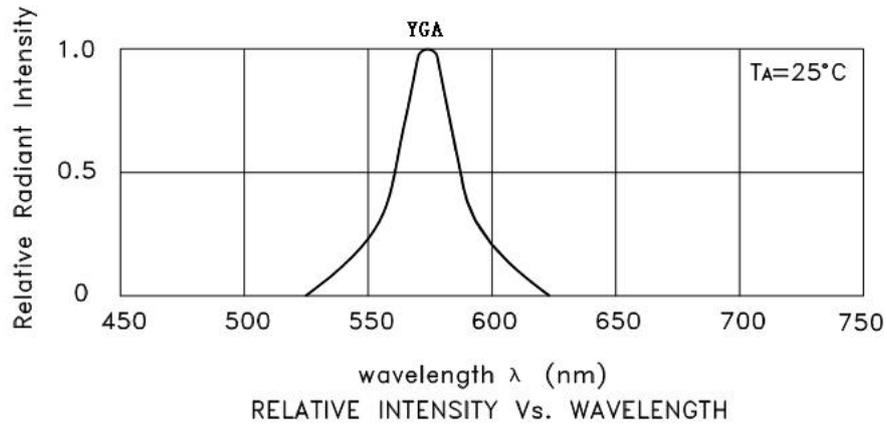


Fig.6 Spatial Distribution



RELIABILITY

(1) Test Items and Results

NO.	Test Item	Reference Standard	Test Conditions	(Hours/Cycles)	Sample	Number of Damaged
1	Temperature Cycle	JEITA ED-4701	-40 °C - 25 °C - 100 °C - 25 °C 30min 5min 30min 5min	100 Cycles	20	0/20
2	Thermal shock	MIL-STD-202G	-40°C ~ 100°C 15min 15min	500 Cycles	20	0/20
3	High Temperature Storage	JEITA ED-4701 200 201	Ta=100°C	1000 Hours	20	0/20
4	Low Temperature Storage	JEITA ED-4701 200 201	Ta=-40°C	1000 Hours	20	0/20
5	Room Temperature Life Test		Ta=25±5°C IF=20mA	1000 Hours	20	0/20
6	High Temperature High Humidity Life Test		Ta=60°C RH=85% IF=20mA	1000 Hours	20	0/20
7	Solderability (Reflow Soldering)	JEITA ED-4701 300 303	Tsol=235°C ± 5°C, 5sec (Using Flux, Lead Solder)	1 time, 5sec	10	0/10
8	Resistance to Soldering Heat (Reflow Soldering)	JEITA ED-4701 300 301	Tsol=250°C, 10 sec Pre Treatment: 35 °C 95% RH96 Hrs	2 time, 10sec	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

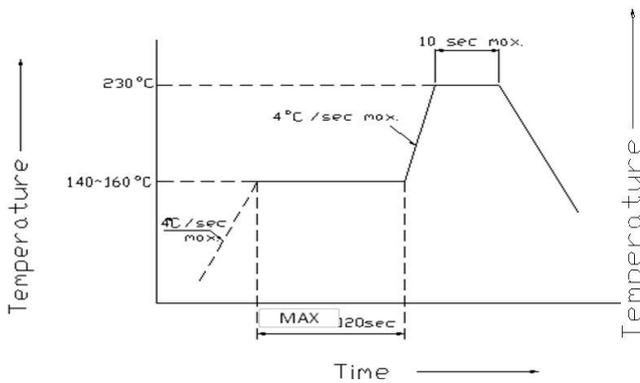
(1) Soldering Conditions

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

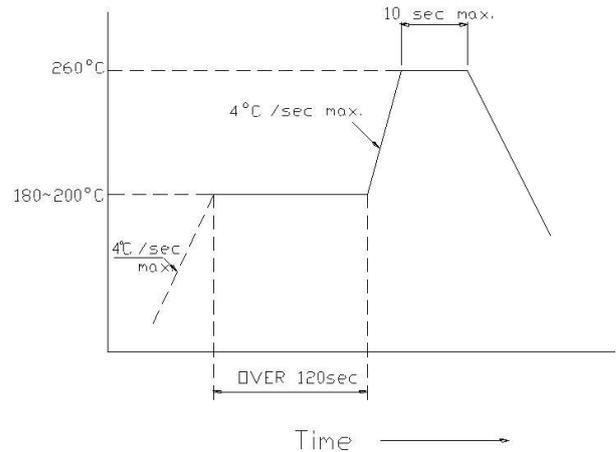
(Recommended soldering conditions)

Reflow Soldering			Manual Soldering	
	Lead Solder	Lead-free Solder	Temperature Soldering	350° C Max. 3 sec. Max. (one time only)
Pre-heat Pre-heat time	140 ~ 160° C 120 sec. Max.	180 ~ 200° C 120 sec. Max.	time	
Peak temperature Soldering time	230° C Max. 10 sec. Max.	240° C Max. 10 sec. Max.		
Condition				

(Lead Solder)

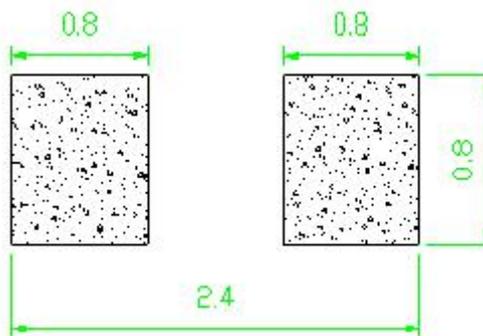


(Lead-Free Solder)



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

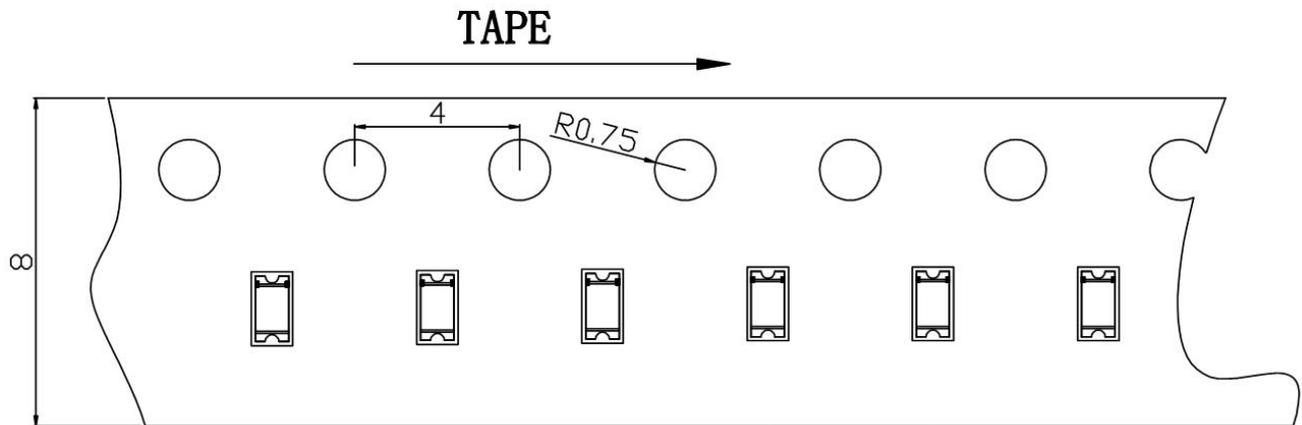
It is recommended that moisture proof package be used .

(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°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°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°C/6H

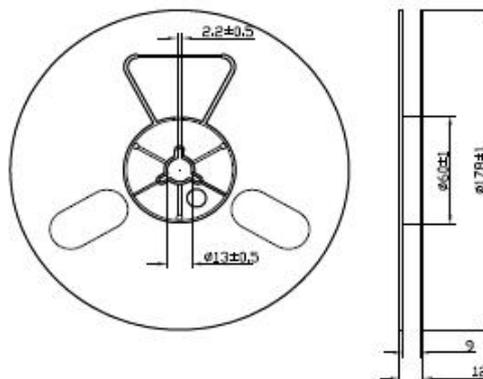
PACKAGING

The LEDs are packed in cardboard boxes after taping.

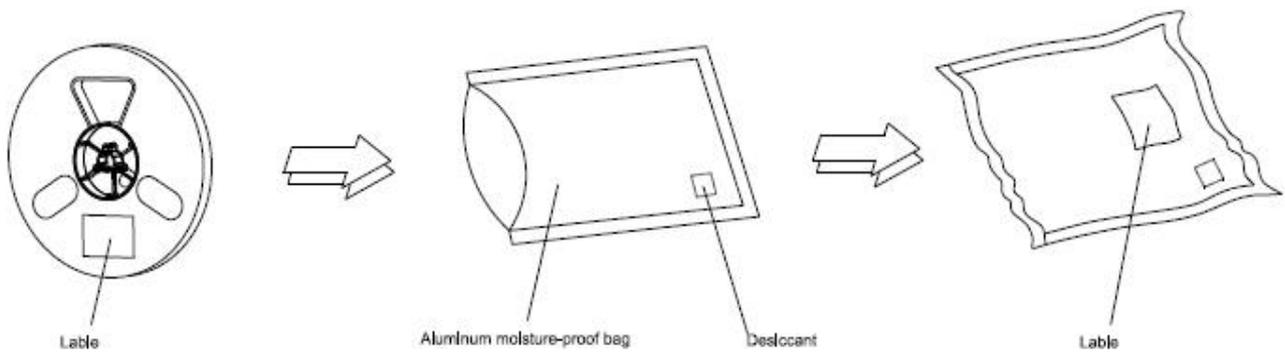


Package: 4000 pcs/reel

Reel Dimensions



Moisture Resistant Packaging



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

Test condition : @20mA		
BIN Code	V_{Fmin} (v)	V_{Fmax} (v)
DNB: 1	2.8	2.9
2	2.9	3.0
3	3.0	3.1
UYG: 1	1.8	1.9
2	1.9	2.0
3	2.0	2.1
Test condition : @20mA		
BIN Code	λ_{Dmin} (nm)	λ_{Dmax} (nm)
DNB: 1	460	465
2	465	470
3	470	475
UYG: 1	568	570
2	570	572
3	572	574
Test condition : @20mA		
BIN Code	I_{Vmin} (mcd)	I_{Vmax} (mcd)
DNB1	200	300
YG1	20	40