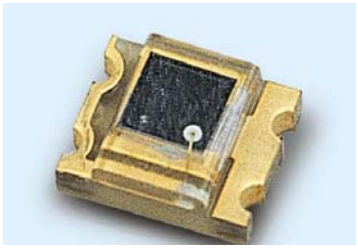
Technical Data Sheet
RGB Color Sensor SMD Device

Preliminary

CLS15-22C/L213(R、G、B)/TR8

Features



- Package in 8mm tape on 7″ diameter reel.
- Surface-mount plastic package.
- Good stable output with temperature shift.
- External dimensions 3.2(L)*2.7(W)*1.1(H)mm^3.
- Compatible with automatic placement equipment.
- Compatible with infrared and vapor phase reflow solder process.
- Built in 1-Channel/1Chip (R, G, B) Si photodiode.
- Active area: 1.8 mm^2
- Pb free
- The product itself will remain within RoHS compliant version.

Descriptions

CLS15-22C/L213(R、G、B)/TR8 Color Sensor Device, consisting of 1-Channel/1Chip (R, G, B) Si photodiode, is a good effective solution to color balance of display backlighting appliances, such as the LCD TV and projector. The color sensor sensitive are Red (λp=620nm), Green (λp=550nm) and Blue (λp=470nm) regions of the spectrum.

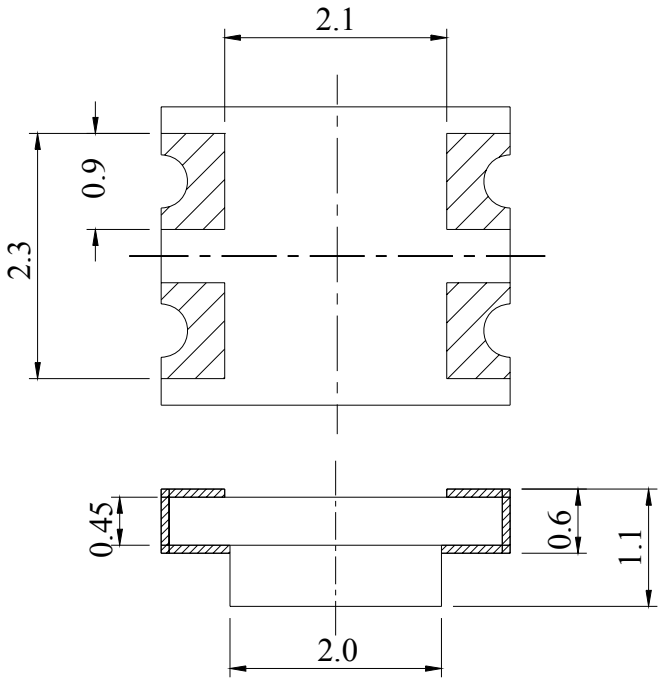
Applications

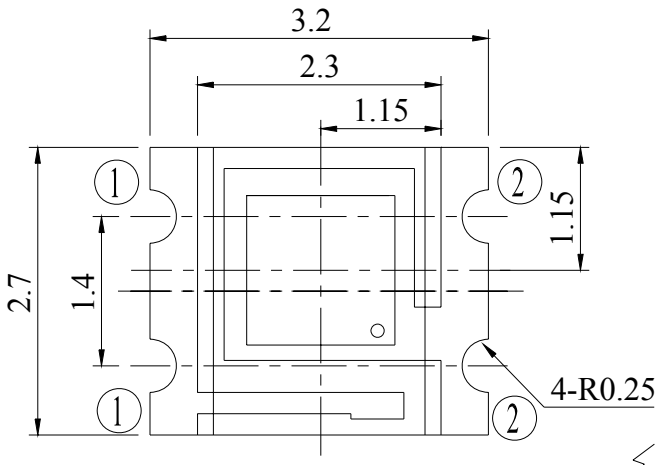
- Color adjustment for LED back light system for LCD.
- Color adjustment for LCD projector
- Color tester and Color temperature detection.
- White balance : Camera

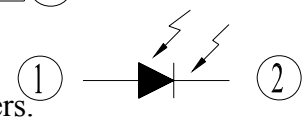
Device Selection Guide

PART	MATERIAL	COLOR
Chip	Silicon	---
Package	Epoxy	Water Clear

Package Dimensions







1 Anode

2 Cathode

Note:
1.Alldimensions are in millimeters.
2.Tolerances unless dimension ±0.1mm

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Condition	Rating	Units
Reverse Breakdown Voltage	V_{BR}	I_R = 100 μA	35	V
Forward Voltage	V_F	I_F = 10mA	0.5~1.3	V
Operating Temperature	T_{opr}	---	-25 ~ +85	℃
Storage Temperature	T_{stg}	---	-40 ~ +85	℃
Soldering Temperature	T_{sol}	---	260	℃

Notes: *1:Soldering time≦5 seconds.

Electro-Optical Characteristics (Ta=25℃)

Red Light Sensor Device : CLS15-22C/L213R/TR8

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Peak Sensitivity Wavelength	λ_P	---	---	620	---	nm
Short-Circuit Current	I_{SC}	Ee=100Lux[1] V_R=0V	---	0.086	---	μA
Reverse Light Current(1)	I_{L1}	Ee=100Lux[1] V_R=5V	---	0.091	---	μA
Reverse Light Current(2)	I_{L2}	Ee=1000Lux[1] V_R=5V	---	0.83	---	μA
Reverse Dark Current	I_D	Ee=0 V_R = 10 V	---	2	10	nA

Note:

[1]: White Fluorescent light (Color Temperature = 6500K) is used as light source.

Green Light Sensor Device : CLS15-22C/L213G/TR8

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Peak Sensitivity Wavelength	λ_P	---	---	550	---	nm
Short-Circuit Current	I_{SC}	Ee=100Lux[1] V_R=0V	---	0.075	---	μA
Reverse Light Current(1)	I_{L1}	Ee=100Lux[1] V_R=5V	---	0.082	---	μA
Reverse Light Current(2)	I_{L2}	Ee=1000Lux[1] V_R=5V	---	0.72	---	μA
Reverse Dark Current	I_D	Ee=0 Lux V_R = 10 V	---	2	10	nA

Blue Light Sensor Device : CLS15-22C/L213B/TR8

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Peak Sensitivity Wavelength	λ_P	---	---	470	---	nm
Short-Circuit Current	I_{SC}	100Lux[1] V_R=0V	---	0.042	---	μA
Reverse Light Current(1)	I_{L1}	100Lux[1] V_R=5V	---	0.046	---	μA
Reverse Light Current(2)	I_{L2}	1000Lux[1] V_R=5V	---	0.39	---	μA
Reverse Dark Current	I_D	V_R = 10 V	---	2	10	nA

Typical Electro-Optical Characteristics Curves

CLS15-22C/L213R/TR8

Fig.1 Dark Current vs. Ambient Temperature

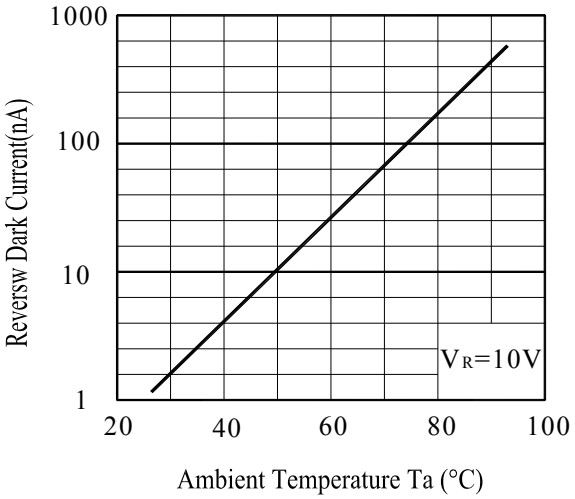


Fig.-2 Illuminance vs. Output Phtocurrent

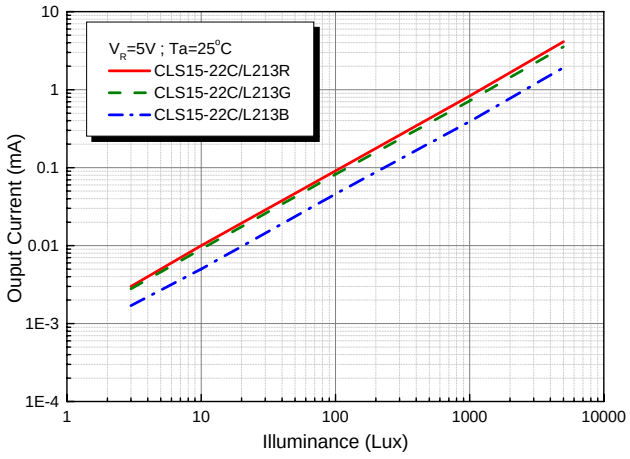


Fig.-3 R,G, B LED Test vs. Output Photocurrent

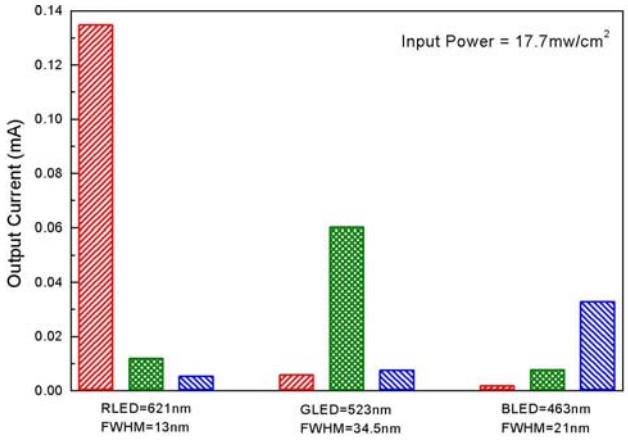


Fig.-3 R,G, B LED Test vs. Output Photocurrent

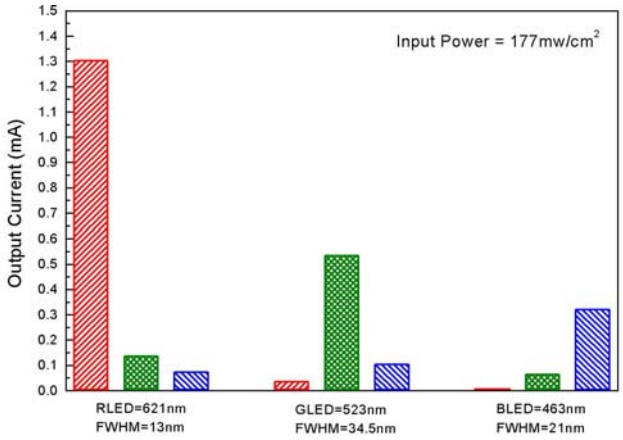
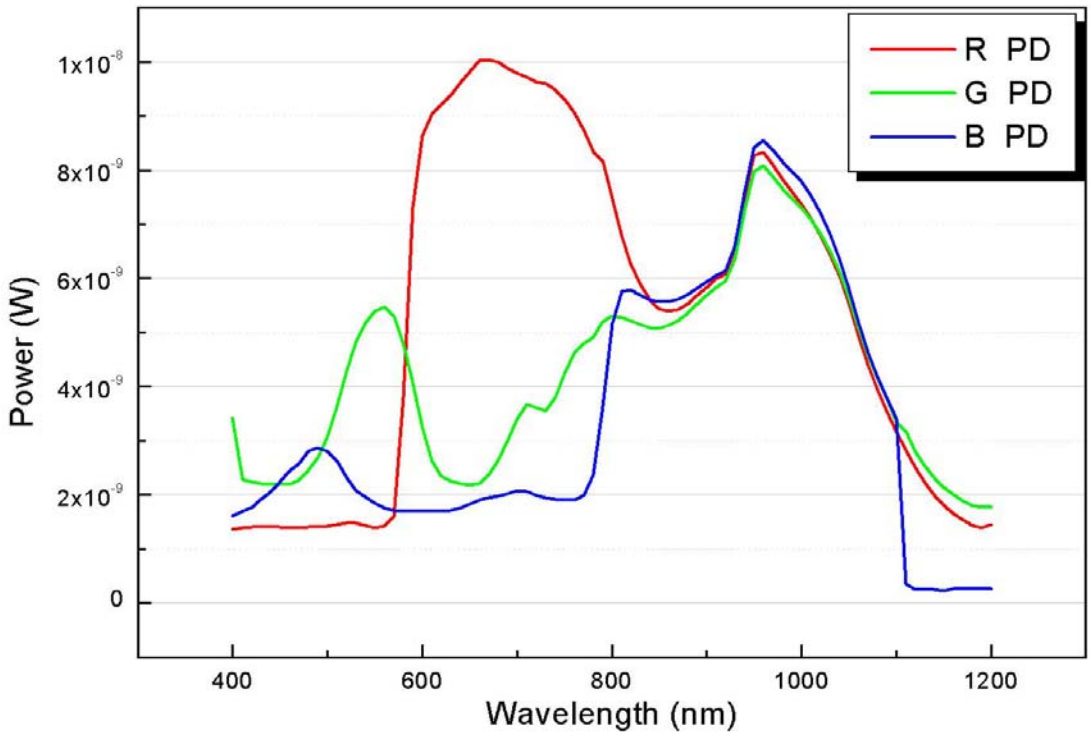


Fig.3 Relative Sensitivity vs. Wave Length(nm)



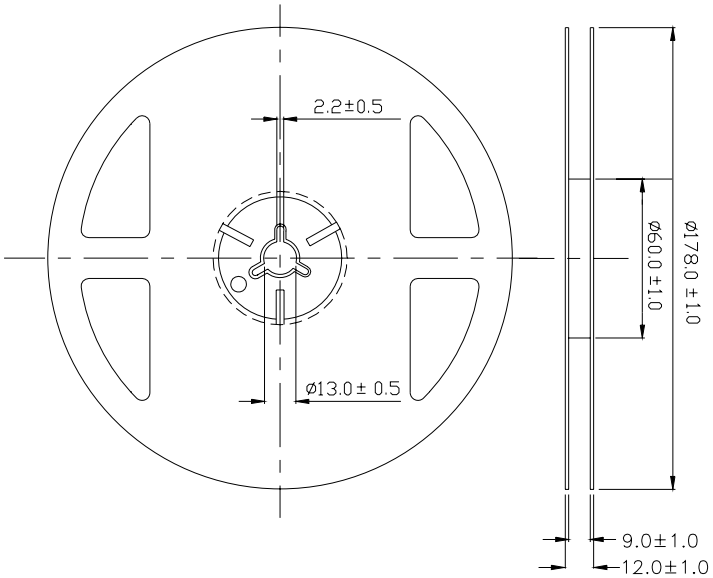
Packing Quantity Specification

1. 2000 PCS/1 Reel
2. 5 Reel /1Carton

Label explanation

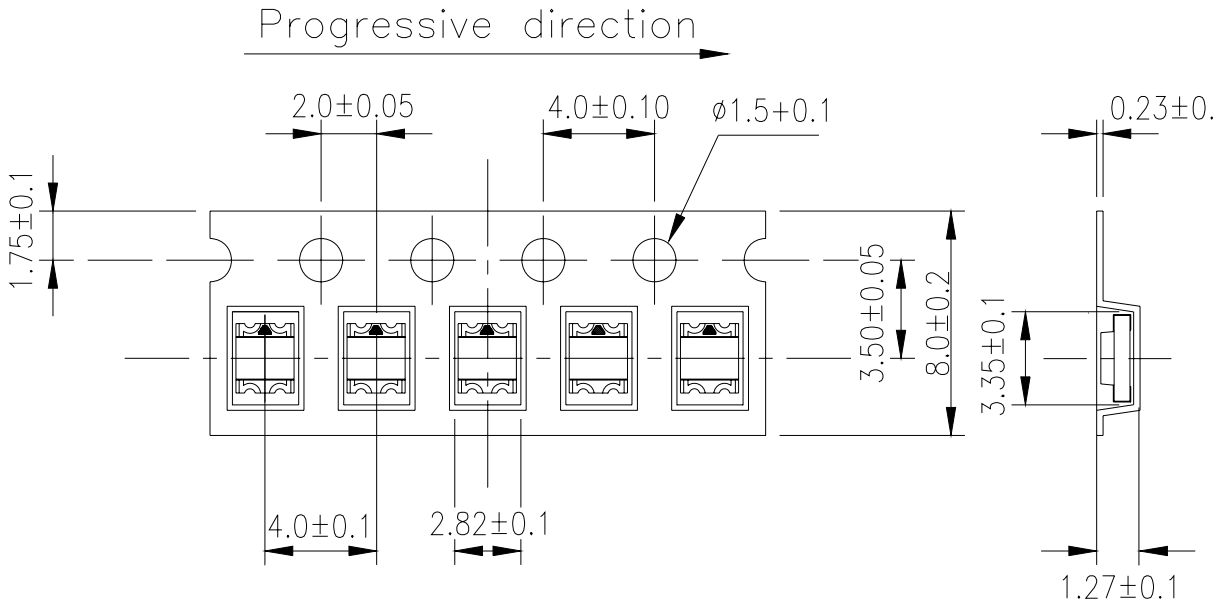
CPN: Customer's Production Number
P/N : Production Number
QTY: Packing Quantity
CAT: Ranks
HUE: None
REF: Reference
LOT No: Lot Number
MADE IN TAIWAN: Production Place

Reel Dimensions



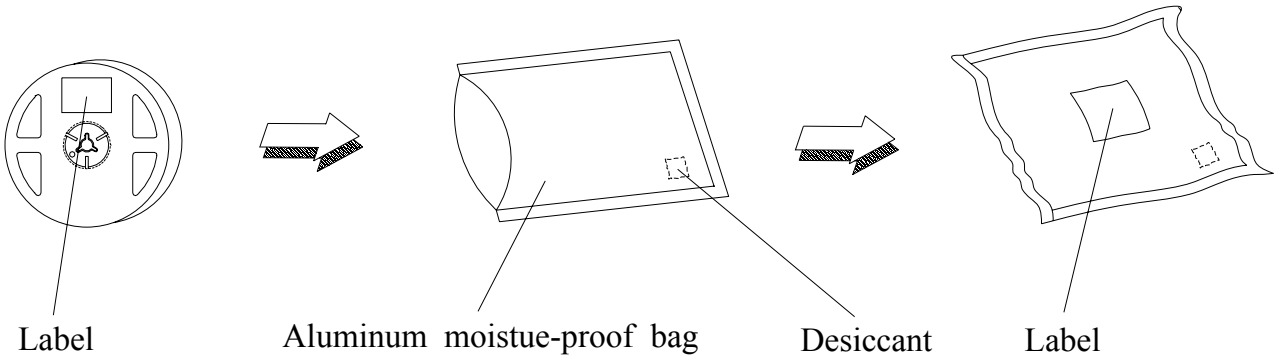
Note: The tolerances unless mentioned are ±0.1, Unit = mm.

Carrier Tape Dimensions: Loaded quantity 2000 PCS per reel



Note: Tolerances Unless Dimension is ±0.1mm , Unit = mm

Moisture Resistant Packaging



Notes

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