

客戶名： _____

規格書

產品型號 _____ ϕ 5無帽白-綠光

規格書號碼 _____ YG-LED-15

確認

鈺光科技股份有限公司

E-light Technology inc.

地址：**231**台北縣新店市文化路**60**號**1**樓

ADDRESS:1/F No.60, Wunhua Rd., Sindian City,
Taipei, 231 R.O.C.

電話 (TEL) : +886-2-29107483

傳真 (FAX) : +886-2-29114375

產品型號	φ5無帽白-綠光	制訂單位	工程部	編制	楊波
規格書號碼	YG-LED-15	制訂時間	2007.06.04	審核	

● COMMODITY: φ5

● ELECTRICAL AND OPTICAL CHARACTERISTICS (Ta=25°C)

Chip		Lens Appearance	Absolute Maximum Rating			Electro-optical Data(At 20mA)		Viewing Angle 2θ 1/2 (deg)
Emitted Color	Peak Wave Length λ P (nm)		Δλ (nm)	Pd (mW)	If (mA)	Vf(V)	Iv Typ(mcd) Min Max	
Super Green	500~530	Super Green	10	100	30	3.0~3.6	5000 25000	15±2

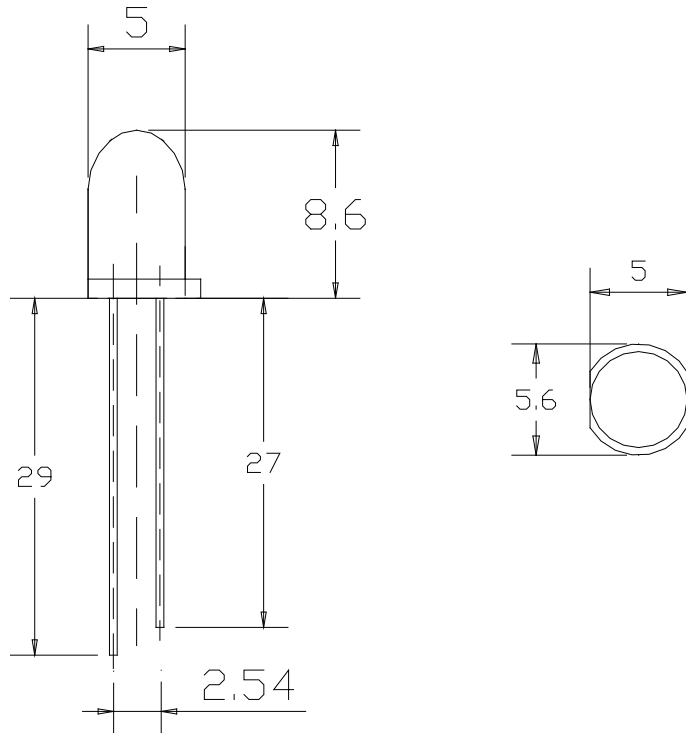
Remark :Viewing angle is the Off-axis angle at which the luminous intensity is half the axial luminous intensity.

● PACKAGE DIMENSIONS

Type :

Unit : mm

Tolerance : +/- 0.1



NOTES:

- 1.All dimensions are in millimeters.
- 2.Tolerance is +0.25mm(0.01) unless otherwise specified
- 3.Lead spacing is measured where the leads emerge from the package.
- 4.Specifications are subject to change without notice.

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Optoelectronic Characteristics at Ta=25°C.

■ Chip:

Parameter	Symbol	Condition	Value	Unit
Forward Voltage	V_F	$I_F = 20 \text{ mA}$	3.0~3.6	V
CIE Value (X, Y)*	A	$I_F = 20 \text{ mA}$	500~510	nm
	B		510~520	
	C		520~530	
Luminous Intensity*	I_o	$I_F = 20 \text{ mA}$	5000~25000	mcd
Operating Temperature	T_{OPR}		-40 ~ +85	°C
Storage Temperature	T_C		-40 ~ +85	°C
Leakage current	I_r	-5V	≤5	uA

* LED reading.

* Customer can select which CIE range(A, B or C) they need.

* One delivery will include four different ranks of the luminous intensity depend on customer request.

Absolute Maximum Ratings.

	Maximum Value	Unit
DC forward current per chip	20	mA
Peak pulse current; (1/10 duty cycle, Pulse width =0.1msec)	100	mA
Reverse voltage.	5	V
LED junction temperature.	125	°C
Operating temperature.	-40 ~ +85	°C
Storage temperature.	-40 ~ +85	°C
Power dissipation (at room temperature)	100	mW

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Group Definition of wavelength and brightness, forward voltage (@20mA)

A Type

CIE	Brightness @20mA	No	Vf@ 20mA
500~510	5000 ~ 7000 mcd 7000~10000mcd 10000~15000mcd 15000~20000mcd 20000~25000mcd	1	3.0-3.1
		2	3.1-3.2
		3	3.2-3.3
		4	3.3-3.4
		5	3.4-3.5
		6	3.5-3.6

B Type

CIE	Brightness @20mA	No	Vf@ 20mA
510~520	5000 ~ 7000 mcd 7000~10000mcd 10000~15000mcd 15000~20000mcd 20000~25000mcd	1	3.0-3.1
		2	3.1-3.2
		3	3.2-3.3
		4	3.3-3.4
		5	3.4-3.5
		6	3.5-3.6

C Type

CIE	Brightness @20mA	No	Vf@ 20mA
520~530	5000 ~ 7000 mcd 7000~10000mcd 10000~15000mcd 15000~20000mcd 20000~25000mcd	1	3.0-3.1
		2	3.1-3.2
		3	3.2-3.3
		4	3.3-3.4
		5	3.4-3.5
		6	3.5-3.6

* One delivery would be included 54 different ranks of the luminous intensity ,
wavelength and Vf depend on customer request.

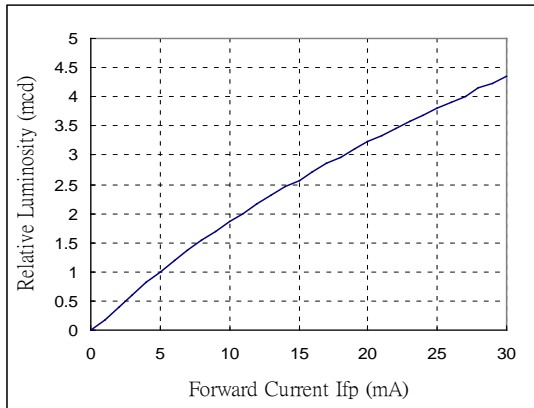
* The quantity ratio of the different intensity and wavelength ranks in one delivery is decided by YG.

* The reel of LED shows the number of definition of LEDs on reel label.

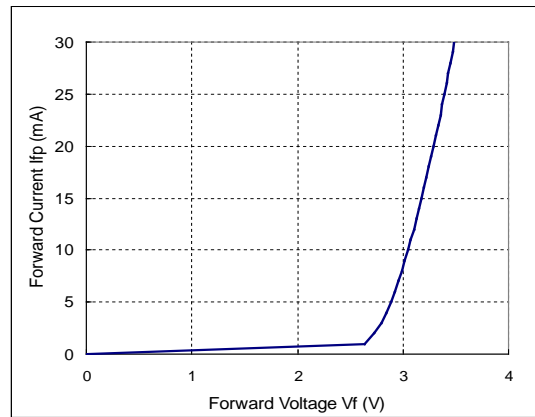
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Optical and electrical characteristics

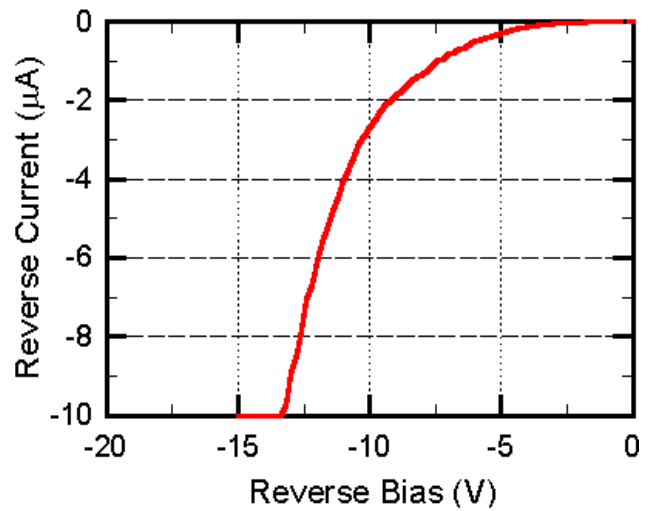
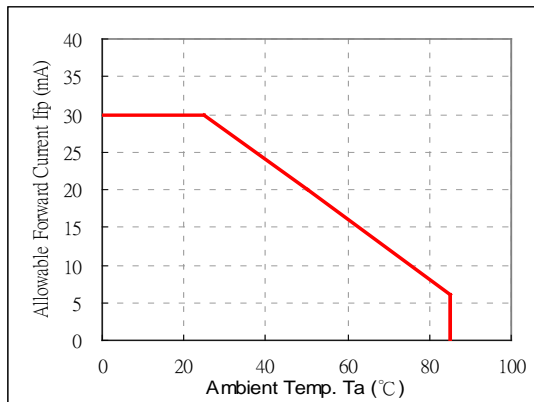
Relative luminous intensity vs. forward current.



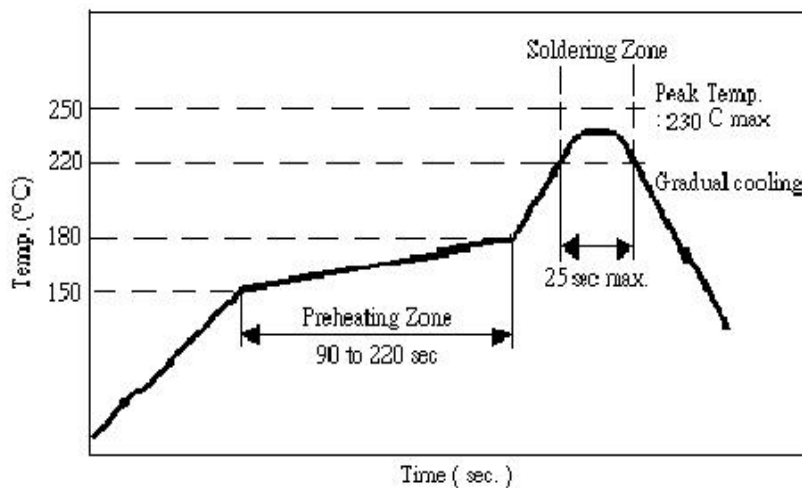
Forward current vs. forward voltage.



Allowable Forward Current vs. Ambient Temperature.



Recommended Soldering Temperature - Time Profile (Reflow Soldering)



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Reliability Test :

NO	Test Item	Test Conditions	Time	Results (Failure/ Sample Size)
1.	Thermal Cycle Test (168 cycle)	H : +75°C 30min ~ L : -35°C 30min	168Hrs	0/20
2	Thermal Shock Test (84 cycle, Rate=5min)	-40 °C(Holding 120 min) --> 85°C(Holding 120 min) 15 cycles, rate = 5 min	168Hrs	0/20
3.	High Temp. Storage Test	85°C, 120 Hr	168Hrs	0/20
4.	Low Temp. Storage Test	-25°C, 120 Hr	168Hrs	0/20
5	High Temp. High Humidity Test	80°C, 85% RH, 168 Hr M.S. Level 3M.S. Level 3	168Hrs	0/20
6	Press Cook Test	T=121°C, P=2atm, H=100%RH	168Hrs	0/20
7	Operating Life Test	If=20mA, 25°C	500Hrs	0/20
8	Soldering Heat Test	260+/-10°C, 10 sec	2 Times	20
9	ESD Test	HBM Class 1		10
10	Drop Test	152 cm, 12 times		20

Conclusions:

The reliability tests were designed to evaluate both package integrity as well as workability of product performance over time.

All samples have done well by completed test requirement and passed all the qualification criteria with zero failure.

From design standpoint, the package is robust enough to meet its datasheet conditions.

Based on the good result shows on the above test, this product is qualified and released for market.