

YM-14033001

5mm RBG LED 共陽 (紅藍綠)

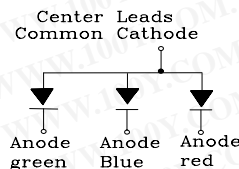
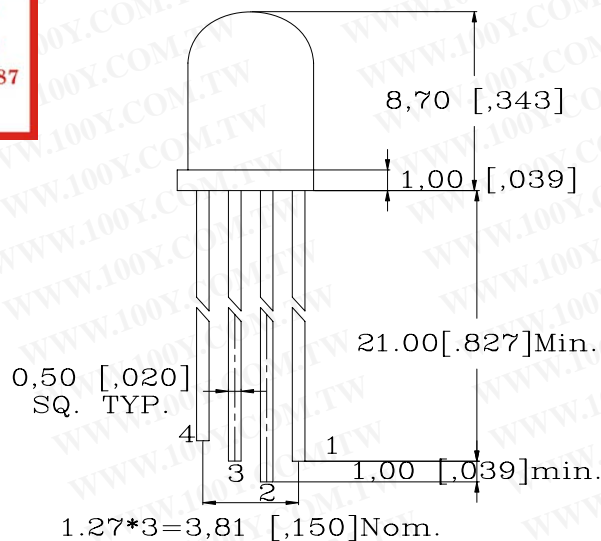
型號 Model :

YM-DRBGC9C503

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一、外形圖 Outline dimensions :

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-34970699
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)



單位 Unit	公差 Tolerance	晶片材料 Die material	膠體顏色 Lens color	發光顏色 Emission color
mm	±0.2mm	InGaN	Water Clear	Red Blue Green

※備註：承認書之編號和型號可用于查詢，客戶如有需要，請提供相應的編號和型號。

Remark : P/N & Model in samples approval sheet can be used to inquire , please provide corresponding P/N& model if customer need .

二、光電參數 Photoelectricity Parameter

(環境溫度 Ambient temperature : 25°C 濕度 humidity : RH60%)

項目 Item	符號 Symbol	顏色 Color	測試條件 Test condition	最小值 Min	典型值 Type	最大值 Max	單位 Unit
正向電壓 Forward voltage	VF	Red	IF=20mA	1.8		2.6	V
		Blue		2.8		3.6	
		Green		2.8		3.6	
反向電流 Reverse current	IR	Red	VR=5V	—		10	μ A
		Blue		—			
		Green		—			
發光強度 Luminous intensity	IV	Red	IF=20mA	1500		2500	mcd
		Blue		950		1500	
		Green		4500		5500	
主波長 Dominant wavelength	λ d	Red	IF=20mA	620		630	nm
		Blue		460		470	
		Green		515		525	
光譜半寬度 Spectrum line half width	$1/2 \theta$	Red Blue Green	IF=20mA	—	30	—	θ

備註：亮度測試公差±15%、波長測試公差±1nm、正向電壓測試公差±0.05V

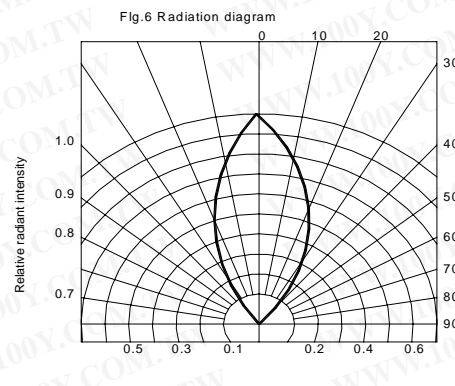
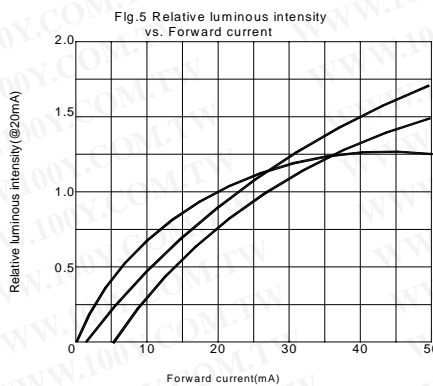
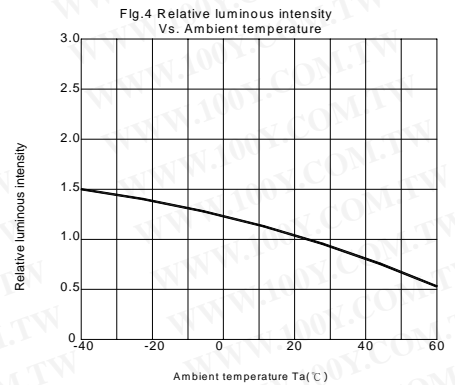
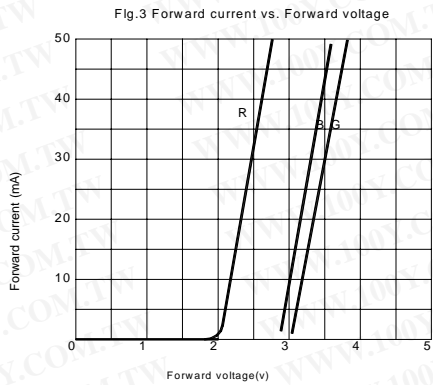
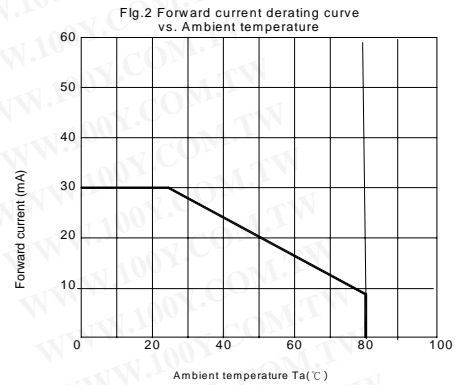
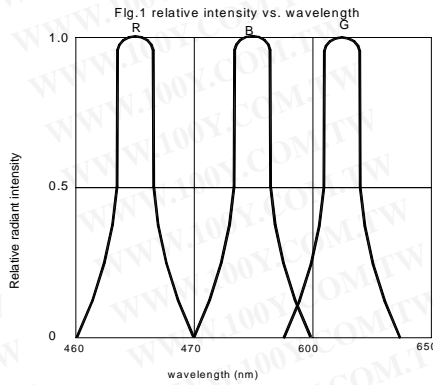
Remark : The tolerance of intensity:±15%, The tolerance of wave length:±1nm, The tolerance of forwards voltage: ±0.05V. Only reference for above data when testing.

三、極限參數 Absolute Maximum Rating

(環境溫度 Ambient temperature : 25°C 濕度 humidity : RH60%)

項目 Item	符號 Symbol	數值 Value	單位 Unit	備註 Remark
正向電流 Forward Current	IF	20	mA	---
正向峰值電流 Peck forward current	IFM	75	mA	F=1KHZ, 占空比(duty cycle)1/10
反向耐壓 Reverse Voltage	VRP	15	V	---
耗散功率 Power Dissipation	Pm	85	mw	---
工作環境溫度 Operation temperature	Tamb	-25 至+80	°C	---
貯藏溫度 Storage temperature	Tstg	-35 至+85	°C	---
焊接溫度 Soldering temperature	Tsol	320	°C	波峰焊, 離環氧體 3mm 處 ≤5S Wave soldering, 3mm out of physical body, ≤5S

四、典型光電特性曲線圖 Typical photoelectricity characteristic curve chart



五、可靠性實驗項目 Reliability Test Project

描述 Description	項目 Item	測試標準 Test criterion	測試條件 Test condition	測試時間 Test time	數量 Qty	失效數量 Fail qty
壽命測試 Life test	常溫壽命測試 Life test(room temperature)	JIS7021:B4	Ta=25°C±5°C · IF=30mA	1000Hrs	22	0
環境測試 Ambience test	高溫存儲 High temperature store	JIS7021:B10 MIL-STD-202:210A MIL-STD-750:2031	Ta=85°C±5°C	1000Hrs	22	0
	低溫存儲 Low temperature store	JIS7021:B12	Ta=-35°C±5°C	1000Hrs	22	0
	高溫高濕測試 High temperature/ humidity test	JIS7021:B11 MIL-STD-202:103D	Ta=85°C±5°C RH=85%	1000Hrs	22	0
	冷熱衝擊測試 Cold / Heat strike test	JIS7021::B4 MIL-STD-202:107D MIL-STD-750:1026	30min -10°C±5°C←→100°C±5°C 5min 5min	50Cycles	22	0
	冷熱回圈測試 Cold and heat cycle test	JIS7021:A3 MIL-STD-202:107D MIL-STD-705:105E	5min 5min 5min -35°C~25°C~85°C~-35°C 30min 5min 30min 5min	50Cycles	22	0

判斷標準 Judging criterion:

項目 Item	符號 Symbol	實驗條件 Experiment condition	判斷標準 Criteria	
			Min.	Max.
正向電流 Forward Current	V _F	I _F =20mA	----	Initial Datex1.1
反向電壓 Reverse Voltage	I _R	V _R =5V	----	30 μ A
發光強度 Luminous Intensity	I _V	I _F =20mA	Initial Datex0.7	----

六、注意事項 Note

(一) 引腳成形方法 Led bracket forming method

(1) 必需離膠體 2 毫米才能折彎支架。

The pin of led can be bent where is at least 2mm out of led colloid.

(2) 支架成形必須用夾具或由專業人員來完成。

Must use fixture to deform the led bracket.

(3) 支架成形必須在焊接前完成。

Finishing the forming of led bracket must be before soldering.

(4) 支架成形需保證引腳和間距與線路板上一致。

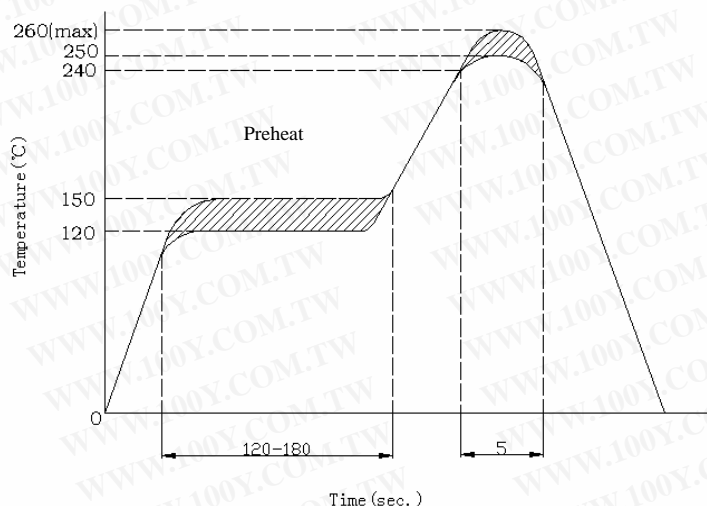
Guarantee the gap between two pin of led tallys with LED pads in PCB when forming.

(二) 烙鐵焊接 Manual soldering

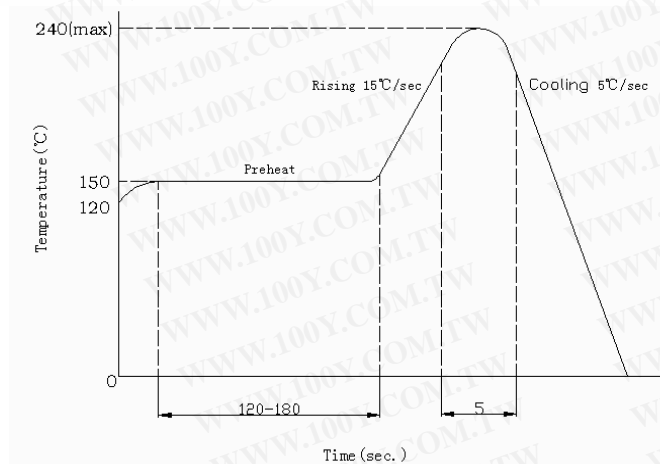
烙鐵 (最高 30W) 尖端溫度不超過 330°C ; 焊接時間不超過 3 秒 ; 焊接位置至少離膠體 3 毫米。

The tip temperature of soldering iron don't exceed 330°C ; soldering time don't exceed 3s and soldering position must be 3mm out of led colloid .

可靠性焊接溫度 (A 圖、B 圖) Soldering temperature curve chart (figure A、figure B)



A 圖
波峰焊



B 圖
回流焊

(三) 防靜電措施 ESD countermeasure

靜電及高壓會對 LED 造成損壞，特別是晶片材質為 InGaN 的產品對靜電防護要求更加嚴格，要求在使用和檢驗產品時戴防靜電手腕帶或防靜電手套，焊接工具及設備外殼需可靠接地，焊接條件遵循此份規格書中的條件。

Static electricity and high volt can damage led , The production whose Die material is InGaN must strictly required to prevent ESD , Must put on static glove and static fillet , Soldering tool and the cover of device must connect the ground , soldering condition follows the related stating of production specification manual .

(四) 過電流保護 Protecting countermeasure when over current

為避免由於電壓的變化引起大電流衝擊而造成產品損壞，需要加入保護電阻。

Need add the protecting resistor in circuit in order to avoid damaging led due to big current and voltage fluctuation .

(五) LED 安裝方法 LED installation method

1. 注意各類器件外線的排列以防極性裝錯，器件不可與發熱元件靠得太近，工作條件不要超過其規定的極限。

Pay attention to the led polarity and avoid installation wrong . Led can't be close to euthermic component , work condition should tally with it's specification .

2. 務必不要在引腳間距變形的情況下安裝 LED。

Don't install the LED under the condition of the led pin deformation .

3. 當裝配 LED 進入 PCB 或裝配孔時，LED 支架不能承受任何壓力。

The led bracket don't load any pressure when installing the led into PCB or fitting hole .

4. 在焊接溫度回到正常以前，必須避免使 LED 受到任何的震動或外力。

Must avoid any strike and force on led before the soldering temperature return to room temperature .

(六) 存儲時間 Storage time

1. 在溫度 5°C ~ 35°C，濕度 RH60% 條件下，產品可保存一年。超過保存期的產品需重新檢測後方能使用。

Led can be stored for a year under the condition: the temperature of 5°C ~ 35°C and humidity of RH60% , These production must be re-inspected and tested before use if their storage time exceed a year .

2. 如果打開的產品在 5°C ~ 35°C，RH60% 的空氣條件下放置超過一周，則需要將產品在 65°C ± 5°C 的環境中放置 24 小時以上，並儘量在十五天內使用。

If led is exposed in air for a week under the condition: the temperature of 5°C ~ 35°C , humidity of RH60% , must place the led in the ambience of 65°C ± 5°C for 24 hours and use it in 15 days for best .

(七) 清洗 Cleaning

當用化學用品清洗膠體時必須特別小心，因為有些化學品對膠體表面有損傷並引起褪色如三氯乙烯、丙酮等。

可用乙醇擦拭、浸漬，時間在常溫下不超過 3 分鐘。

Be careful of some chemical results in the led colloid fades and damage when using chemical clean the led , such as chloroethylene, acetone etc . can use ethanol to wash or soak led but the time don't exceed 3 minutes.

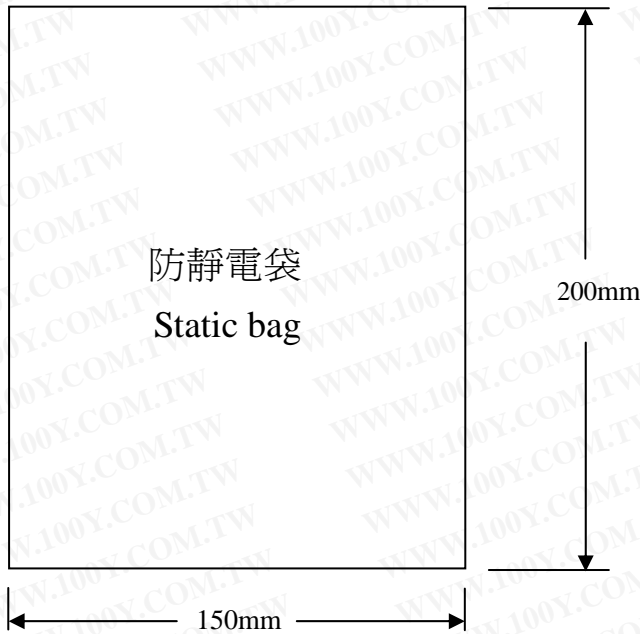
(八) 彎腳 (Kinked)

當 LED 成形彎腳時，彎腳模具容易刮花 LED 腳支架鍍層，刮傷處容易生銹，特別是空氣濕度大時。為減少生銹機會，建議使用鍍錫支架。

The kinked tooling scrape easily the pin of led, where the led bracket is rusting easily, especial expose it in moist air. To decrease the led bracket rust, advise using plated tin led bracket.

七、包裝 Packing

(1) 包裝材料 Packing material : 防靜電袋 static bag



(2) 標識 remark :

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(3) 每袋數量 Qty/per bag : 500PCS (特殊情況可按要求而定 Can change the qty according to actual status)

(4) 外裝紙箱 Packing box

注: 包裝材料和外裝紙箱根據客戶下單實際情況定。

Remark : Decide detail packing box according to customer order or actual status .