

# Specification for approval

客戶名稱:

CUSTOMER NAME: \_\_\_\_\_

發件日期:

ISSUE DATE: \_\_\_\_\_

回文日期:

RETURN DATE: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

一、型號:

PART NO.: \_\_\_\_\_ 5050RGB  
\_\_\_\_\_

二、說明:

STATEMENT: \_\_\_\_\_  
\_\_\_\_\_

三、附件:

ACCESSORY: 樣品 出貨檢驗記錄表 封裝尺寸圖 電氣特性曲線   
內部線路圖 焊性建議 PAD 建議 包裝方式

四、客戶意見欄 CUSTOMER' S PROPOSAL (請客戶填寫)

- AGREE 同意 (請於認可欄中簽名)  
 DISAGREE 不同意

REASON 原因: \_\_\_\_\_  
\_\_\_\_\_

客戶認可簽章:

CUSTOMER SIGNATURE: \_\_\_\_\_

# REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDs

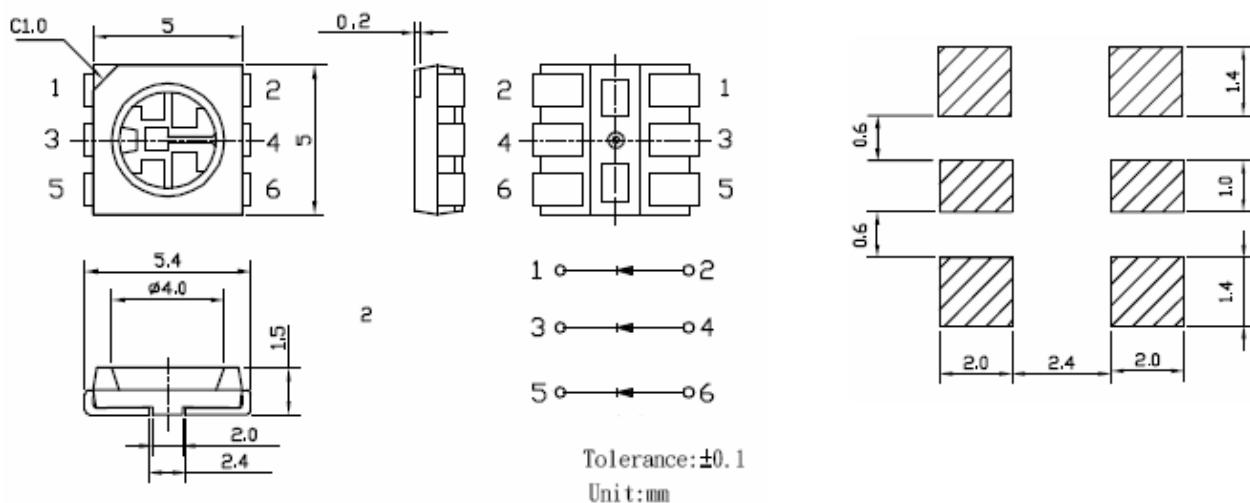
反射蓋灌注型高效率發光二極體

## High Performance SMD Hi-Light Top LEDs

Part Number: 5050RGB

### Package outlines

RECOMMEND PAD LAYOUT



ATTENTION  
OBSERVE PRECAUTIONS  
FOR HANDLING  
ELECTROSTATIC  
SENSITIVE DEVICES



ITEM	MATERIALS
Resin (mold)	Epoxy
Bonding wire	$\varnothing 25 \mu\text{m}$ Au
Lens color	Yellow
Printed circuit board	BT (White)
Dice	Red GaALAs
	Green GaP
	Blue InGaN

#### NOTES:

1. All dimensions are in millimeters (inches);
2. Tolerances are  $\pm 0.1$ mm (0.004inch) unless otherwise noted.

Rev :	Date	Drawn by :	Checked by :	Approved by :
A				

# REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDs

反射蓋灌注型高效率發光二極體

## High Performance SMD Hi-Light Top LEDs

Part Number: 5050RGB

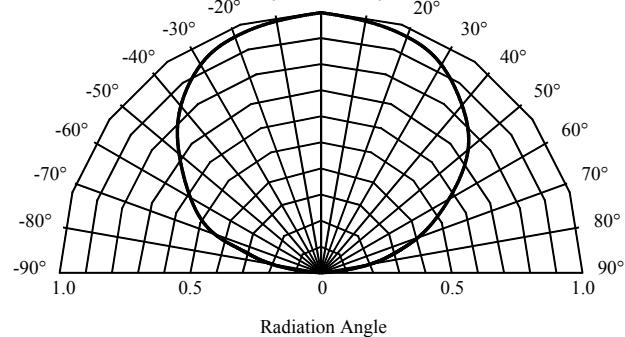
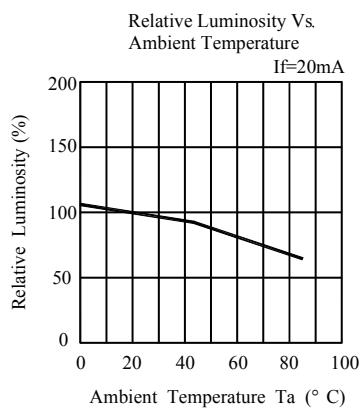
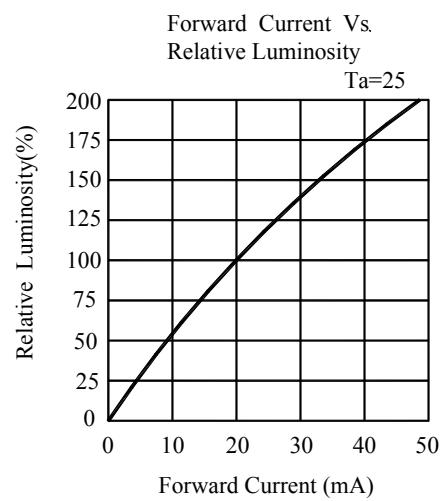
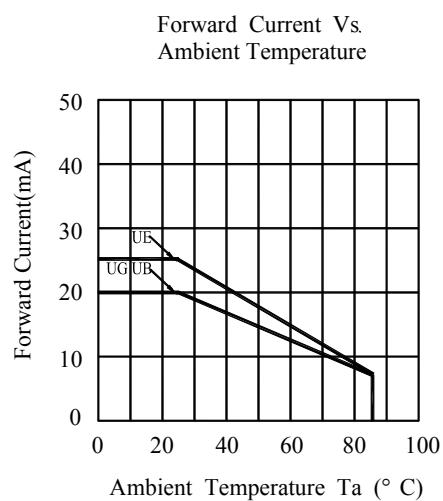
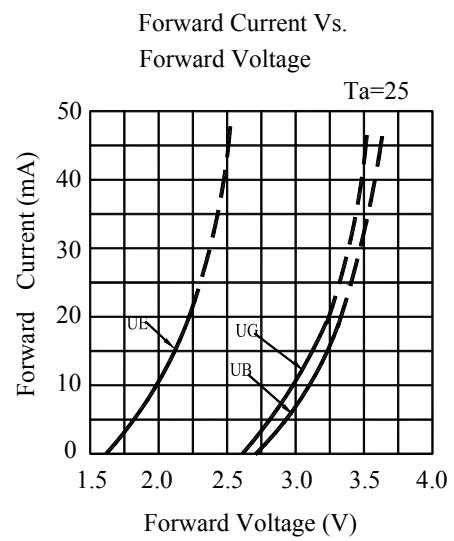
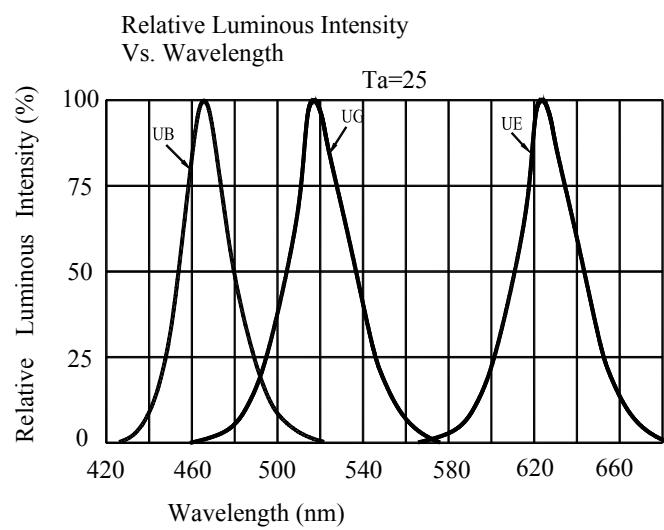
### Absolute maximum ratings (TA=25)

Parameter	Symbol	Value			Unit
		R	G	B	
Forward current	Pd	69	81	114	mA
Reverse voltage	If		30		V
Power dissipation	Vr		5		mW
Operating temperature range	Top		-20~+80		°C
Storage temperature range	Tstg		-20~+80		°C
Peak output current(1/8duty f=1KHz)	Ifp		125		mA

### Electrical optical characteristics (TA=25)

Parameter	Test Condition	symbol	Value			Unit
			Min	Typ	Max	
Wavelength at peak emission	If=20mA	λ peak	R G B	640 520 460	- - -	650 530 465 nm
Spectral half bandwidth	If=20mA	Δ λ dom	R G B	- - -	20 30 25	- nm
Dominant wavelength	If=20mA	λ dom	R G B	- - -	630 522.5 465	- nm
Forward voltage	If=20mA	Vf	R G B	- - -	1.8 3.1 3.3	2.3 V
Luminous intensity *1	If=20mA	Iv	R G B	800 1000 1200	- - -	- mcd
Viewing angle at 50% Iv	If=20mA	20 1/2				-
Reverse current	Vr=5V	Ir		120		10

## Typical Electro-Optical Characteristics Curves :

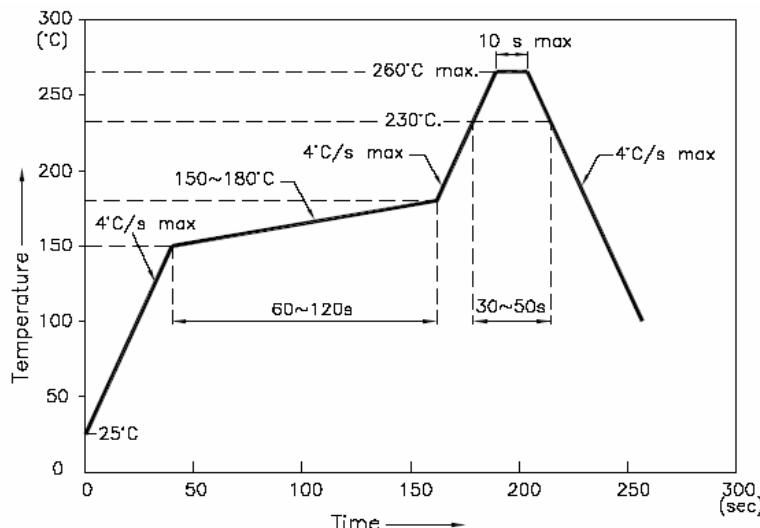


# REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDs

## 反射蓋灌注型高效率發光二極體

### Reflow Profile

#### ■ Reflow Temp/Time



#### NOTES:

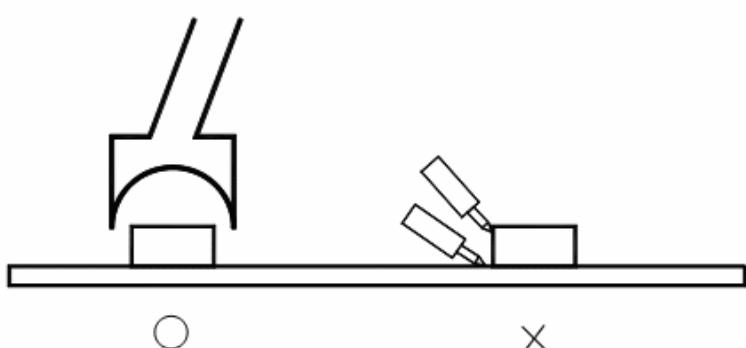
1. We recommend the reflow temperature 245 °C ( $\pm 5^\circ\text{C}$ ). the maximum soldering temperature should be limited to 260 °C.
2. dont cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

#### ■ Soldering iron

Basic spec is  $\leq 5\text{ sec}$  when 260 °C. If temperature is higher, time should be shorter ( $+10^\circ\text{C} \rightarrow -1\text{ sec}$ ). Power dissipation of iron should be smaller than 15W, and temperatures should be controllable .Surface temperature of the device should be under 230 °C .

#### ■ Rework

1. Customer must finish rework within 5 sec under 260 °C.
2. The head of iron can not touch copper foil
3. Twin-head type is preferred.

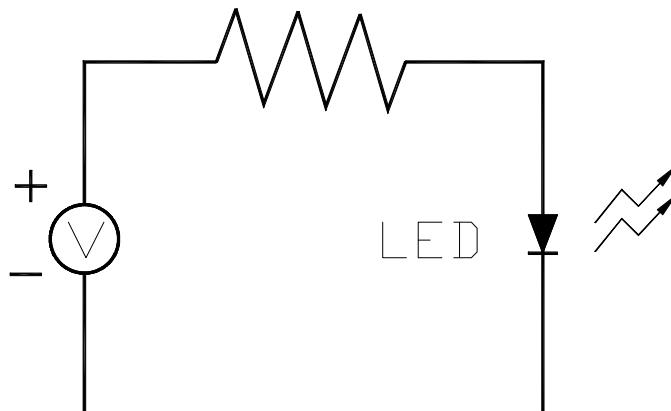


# REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDs

反射蓋灌注型高效率發光二極體

## Test circuit and handling precautions

### ■ Test circuit



### ■ Handling precautions

#### 1. Over-current-proof

Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).

#### 2. Storage

2.1 It is recommended to store the products in the following conditions:

Humidity: 60% R.H. Max.

Temperature : 5°C~30°C (41°F~86°F)

2.2 Shelf life in sealed bag: 12 month at <5°C~30°C and <30% R.H. after the package is Opened, the products should be used within a week or they should be keeping to stored at ≤20 R.H. with zip-lock sealed.

#### 3. Baking

It is recommended to baking before soldering when the pack is unsealed after 72hrs. The Conditions are as followings:

3.1  $60 \pm 3^\circ\text{C}$  x(12~24hrs) and <5%RH, taped reel type

3.2  $100 \pm 3^\circ\text{C}$  x(45min~1hr), bulk type

3.3  $130 \pm 3^\circ\text{C}$  x(15~30min), bulk type

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反射蓋灌注型高效率發光二極體

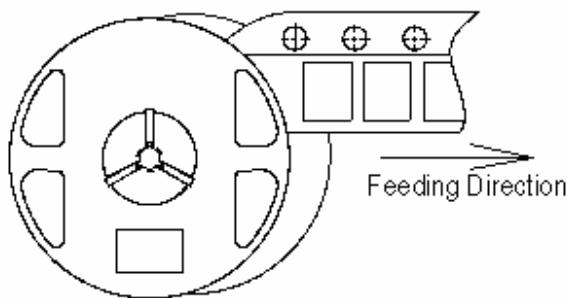
## Test items and results of reliability

Type	Test Item	Test Conditions	Note	Number of Damaged
Environmental Sequence	Temperature Cycle	-20°C 30min ↑ ↓ 80°C 30min	100 cycle	0/22
	Thermal Shock	-20°C 15min ↑ ↓ 80°C 15min	100 cycle	0/22
	High Humidity Heat Cycle	30°C ⇄ 65°C 90%RH 24hrs/1cycle	10 cycle	0/22
	High Temperature Storage	T <sub>a</sub> =80°C	1000 hrs	0/22
	Humidity Heat Storage	T <sub>a</sub> =60°C RH=90%	1000 hrs	0/22
	Low Temperature Storage	T <sub>a</sub> =-30°C	1000 hrs	0/22
Operation Sequence	Life Test	T <sub>a</sub> =25°C I <sub>F</sub> =20mA	1000 hrs	0/22
	High Humidity Heat Life Test	60°C RH=90% I <sub>F</sub> =10mA	500 hrs	0/22
	Low Temperature Life Test	T <sub>a</sub> =-20°C I <sub>F</sub> =20mA	1000 hrs	0/22

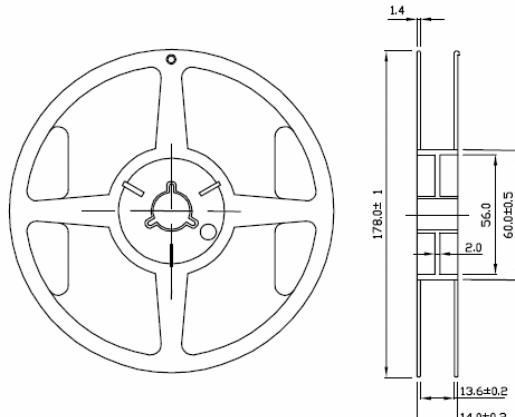
# PACKAGING SPECIFICATIONS

## High Performance SMD Hi-Light Top LEDs

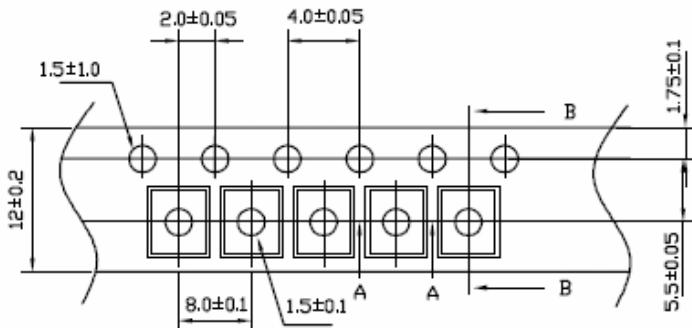
### ● Feeding Direction



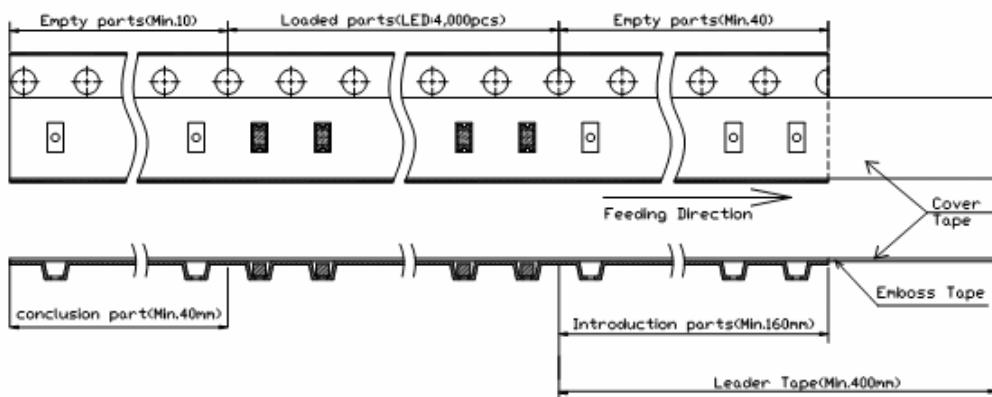
### ● Dimensions of Reel (Unit: mm)



### ● Dimensions of Tape (Unit: mm)



### ● Arrangement of Tape



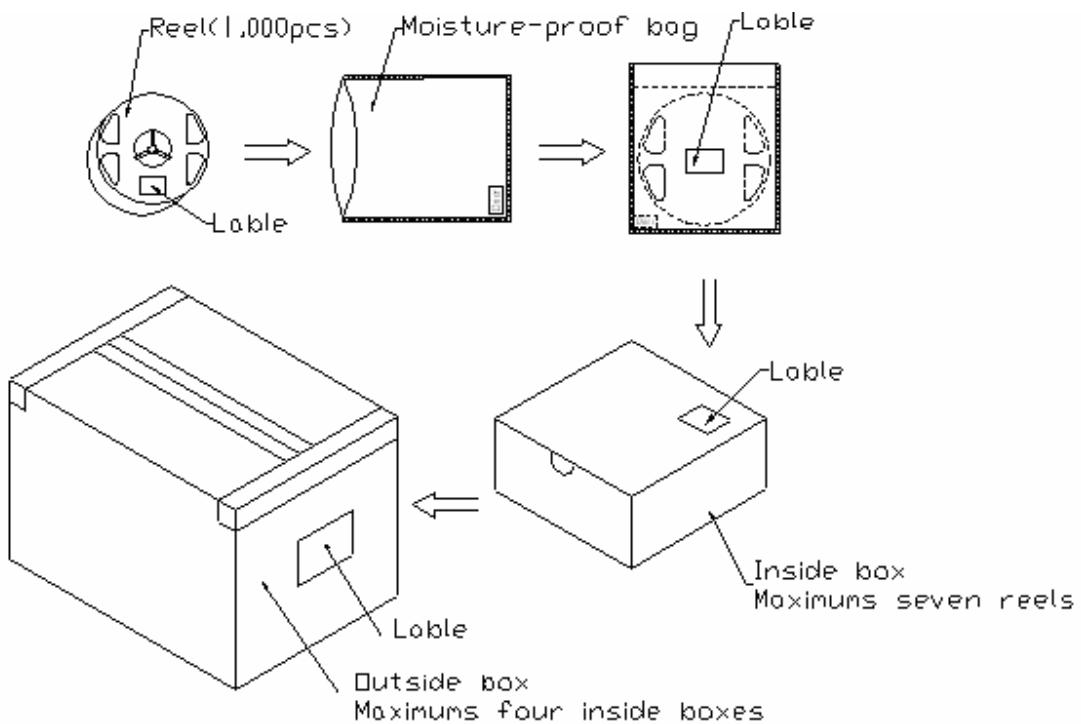
### NOTES

1. Empty component pockets are sealed with top cover tape;
2. The maximum number of missing lamps is two;
3. The cathode is oriented towards the tape sprocket hole in accordance with ANSI/EIA RS-481 specifications.
4. 1,000 pcs/Reel

# PACKAGING SPECIFICATIONS

## High Performance SMD Hi-Light Top LEDs

- Packaging specifications



### NOTES:

Reeled products (numbers of products are 1,000pcs) packed in a seal off moisture-proof bag along with a desiccant one by one, Seven moisture-proof bag of maximums (total maximum number of products are 7,000pcs) packed in an inside box and four inside boxes of maximums are put in the outside box Together with buffer material, and it is packed. (Part No., Lot No., quantity should appear on the label on the moisture-proof bag, part No. And quantity should appear on the label on the cardboard box.) The number of the loading steps of outside box (cardboard box) has it to three steps.