TOP-UP INDUSTRY CORP.

機 種 規 格 說 明 書
(SPECIFICATION)

本公司使用機種:
OUR PART MODEL: 20mm Size LED CCL

本公司使用名稱:
OUR PART NAME: 20LED-CCL-A24-3.4-M7-RGB-W-8JH

客 戶 名 稱:
CUSTOMER'S NAME: ____________

DRAWING NO.: ____________

VERSION : A

	核 准 APPROVED	審 核 REVIEWED	經 辦 者 PREPARED
	Ken	Ken	Terry
	2019.07.12	2019.07.12	2019.07.12

1.特性 Features:

1-1 光強高，功耗低，可靠性好，壽命長

High Luminous Intensity ,Low Power Dissipation,good Reliability and Long Life

1-2 共負極

Common Cathode Show

1-3 符合歐盟公佈的 ROHS 指令要求

Complied With ROHS Directive

2.極限參數（溫度=25℃）Absolute Maximum Ratings (Temperature=25°C)

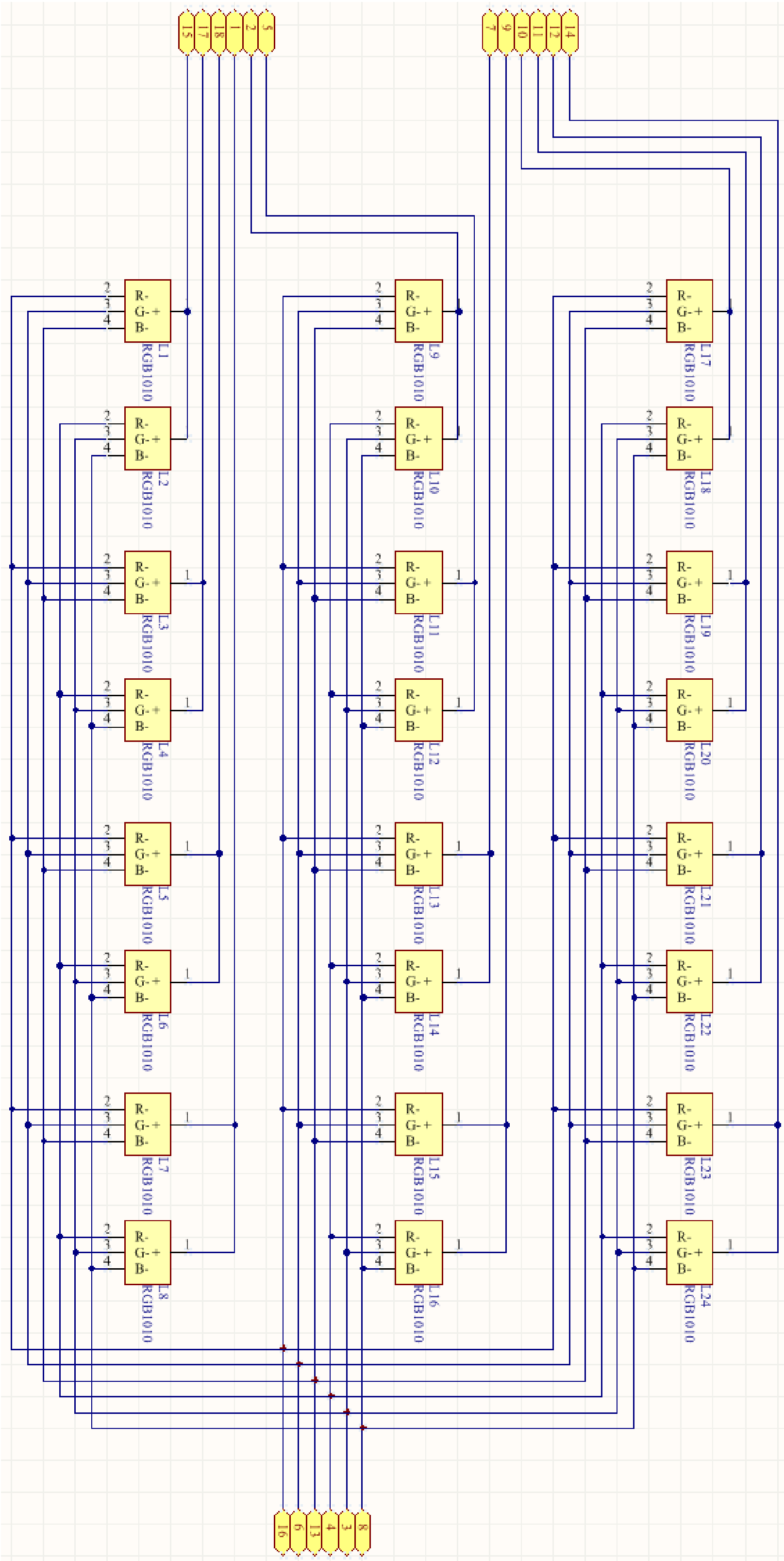
參數名稱 Parameter		符號 Symbol	數值 Rating	單位 Unit
正向電流 Forward Current		IF	10	mA
正向脈衝電流* Pulse Forward Current*	紅 Red	IFP	50	mA
	綠 Green		40	
	藍 Blue		40	
反向電壓 Reverse Voltage		VR	5	V
工作溫度 Operating Temperature		Tamd	-30 ~ +85	℃
貯存溫度 Storage Temperature		Tstg	-40 ~ +100	℃
功耗 Power Dissipation	紅 Red	Ptot	24	mW
	綠 Green		32	
	藍 Blue		32	

* Note: Pulse Width 0.1ms, Duty 1/10

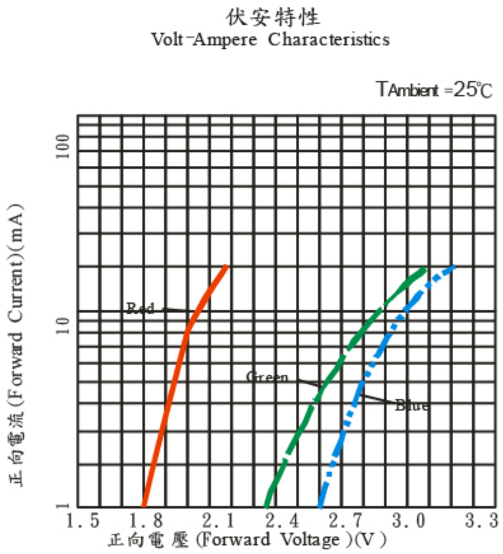
3. 光電參數（溫度=25℃）Electro-Optical Characteristics (Temperature=25°C)

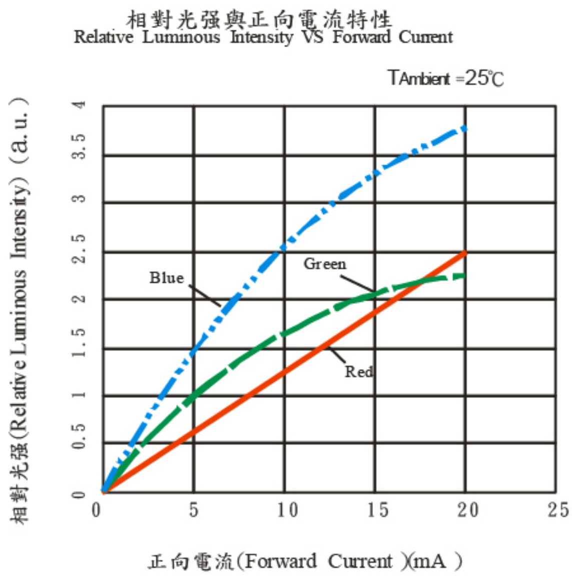
參數名稱 Parameter	符號 Symbol	條件 Condition	顏色 Color	最小值 Min.	典型值 Typ.	最大值 Max.	單位 Unit
反向電流 Reverse Current	I_R	V_R=5V	紅Red			10	μA
			綠Green			10	
			藍Blue			10	
正向電壓 Forward Voltage	V_F	I_F=5mA	紅Red	1.6	2.0	2.4	V
		I_F=2mA	綠Green	2.2	2.6	3.2	
		I_F=2mA	藍Blue	2.3	1.7	3.2	
主波長 Dominant Wavelength	λ_D	I_F=5mA	紅Red	610	620	630	nm
		I_F=2mA	綠Green	520	530	545	
		I_F=2mA	藍Blue	460	470	480	
半波寬度 Spectrum Radiation Bandwidth	$\Delta\lambda$	I_F=5mA	紅Red			24	nm
		I_F=2mA	綠Green			38	
		I_F=2mA	藍Blue			28	
光強 Luminous Intensity	I_V	IF=5mA	紅Red	12	18	35	mcd
		IF=2mA	綠Green	15	25	55	
		IF=2mA	藍Blue	3	4.5	10	
視角度 View Angle	$2\theta_{1/2}$				120		deg.

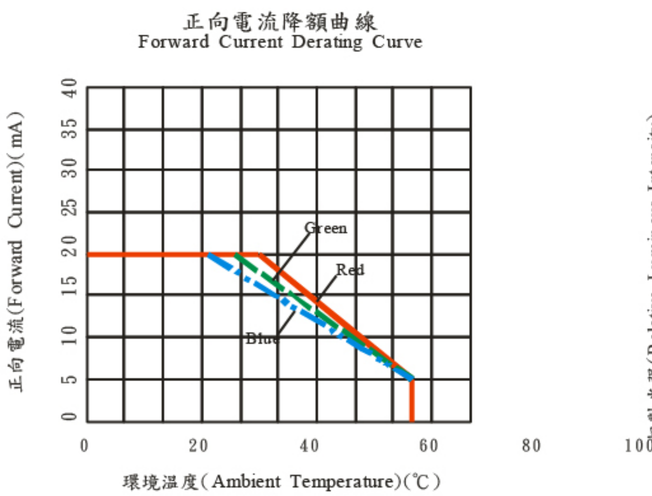
4. 線路圖 Circuit Diagram

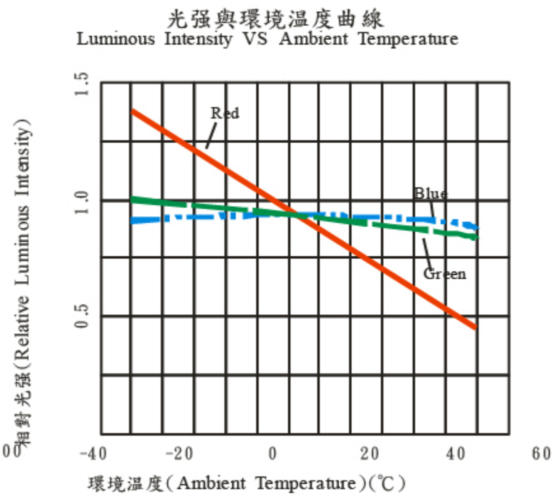


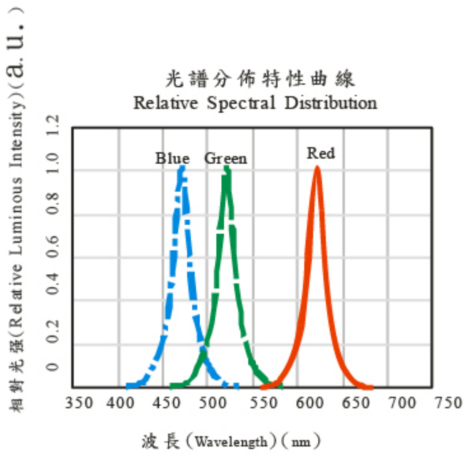
5. 特性曲線 Typical Characteristics Curves

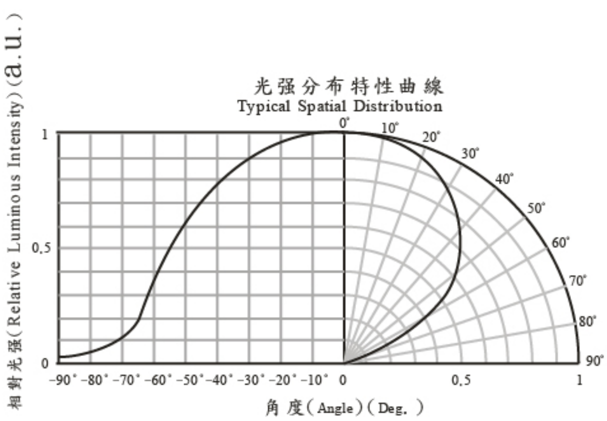












6. 使用注意事項 Precautions

6-1、儲存 Storage :

在溫度低於30℃，濕度不高於60%RH的條件下

The product must be stored under the condition of <30℃ and <60%RH.

6-2. 靜電 Static Electricity :

靜電和電湧會導致產品特性發生改變，例如正向電壓降低等，如果情況嚴重甚至會損毀產品。所以在使用時必須採取有效的防靜電措施。

Static electricity or surge voltage damages the LEDs. Damaged LEDs will show some unusual characteristics such as the forward voltage becomes lower, or the LEDs cannot be lighted up. In view of the above, we should do some anti-static precautions when using the SMD LEDs.

所有相關的設備和機器都應該正確接地，同時必須採取其他防止靜電和電湧的措施。

All devices, equipments and machineries must be properly grounded, at the same time we should take measures to prevent anti-static and voltage surge.

使用防靜電手環，防靜電墊子，防靜電工作服、工作鞋、手套，防靜電容器，都是有效的防止靜電和電湧的措施。

It is also recommended that anti-electrostatic wrist bands, pads, uniforms, gloves or containers can be used when dealing with the LEDs.

6-3. 設計建議 Design Consideration:

設計電路時，通過LED 的電流不能超過規定的最大值，同時，還需使用保護電阻，否則，微小的電壓變化將會引起較大的電流變化，可能導致產品損毀。

In designing a circuit, the current through each LED must not exceed the absolute maximum rating specified for each LED. In the meanwhile, resistors for protection should be applied, otherwise slight voltage shift will cause big current change which will probably lead to damage.

LED 的特性容易因為自身的發熱和環境的溫度的改變而發生改變。溫度的升高會降低LED 的發光效率、影響發光顏色等，所以在設計時應充分考慮散熱的問題。

Thermal Design is paramount importance because heat generation may result in the Characteristics decline, such as brightness decrease, Color change and so on. Please consider the heat generation of the LEDs when making the system design.

6-4、焊接 Soldering:
焊接期間，不可以對器件施加機械壓力。
No mechanical stress should be exerted on the resin portion of the tip of the soldering iron.
焊接最多只能進行一次。
Soldering should not be done more than one time.
在焊接完成後，待產品溫度下降到室溫之後，再進行其他處理。
After soldering, do not deal with the product before its temperature drop down to room temperature.

波峰焊接 Wave soldering		手工焊接 Manual soldering	
預熱 Preheating	100℃Max. 60sec. Max	焊接溫度 Solder temperature	300℃ Max
溫度 Temperature	260℃Max. 5sec. Max	焊接時間 Application time of soldering	3sec. Max