

# TX-5060RGBW20FC120-NUVCNG-02AN

## PRODUCT SPECIFICATION

### Features:

- ◆ Provide uniform cross distribution of positive white and warm white dual color scheme, mixed pure.
- ◆ High luminous output.
- ◆ No UV.
- ◆ Encapsulated materials are environmentally certified and meet environmental requirements.

### Chip Material:

- ◆ Red: AlInGaP
- ◆ Green: GaInN
- ◆ Blue: GaInN
- ◆ White: GaInN

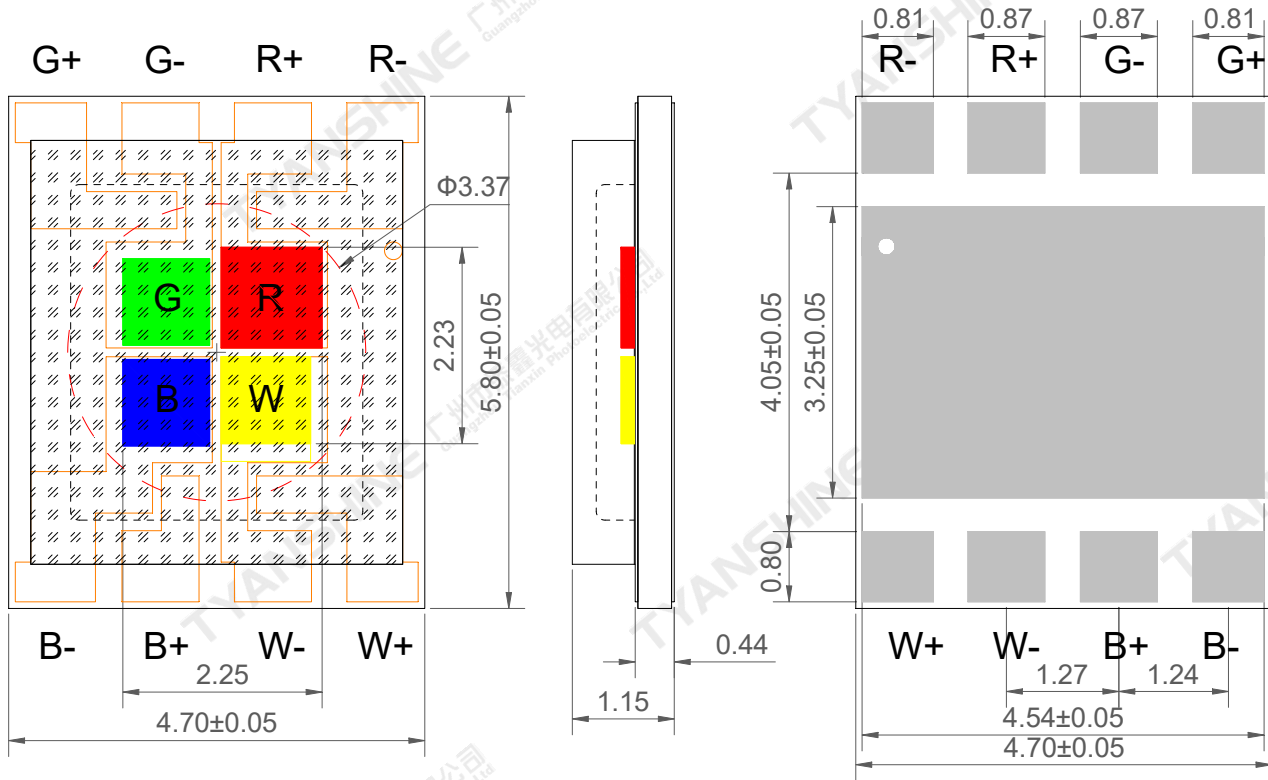
### Emitting Color:

- ◆ Red (R)
- ◆ Green (G)
- ◆ Blue (B)
- ◆ White (W)

### Applications:

- ◆ Auxiliary lighting
- ◆ Ambient lighting
- ◆ Architectural lighting
- ◆ Entertainment lighting

**Package Dimensions:**



**Notes:**

- 1.All dimensions are in millimeters .
- 2.Tolerances unless otherwise mentioned are  $\pm 0.1$ mm .

**Absolute Maximum Ratings (Tc=25°C)**

Parameter	Symbol	Ratings	Unit	
Forward Current	IF	R	1.5	A
		G	1.5	
		B	1.5	
		W	2.0	
Reverse Voltage	V <sub>R</sub>	Not designed for reverse operation	V	
Power Dissipation	P <sub>D</sub>	R	4.2	W
		G	5.7	
		B	5.7	
		W	7.6	
Junction Temperature	T <sub>j</sub>	R	115	°C
		G	150	
		B	150	
		W	150	
Electrostatic Discharge Threshold (ESD)	ESD	2000	V	
Storage Temperature(Only for LED, not including packaging)	T <sub>stg</sub>	-40~+85	°C	
Operation Temperature	T <sub>opr</sub>	-40~+85		

**Notes:**

- Specifications are subject to change without notice.
- The data on this specification is for reference only and the actual data is in accordance with the acknowledgment.
- Precautions for ESD:  
STATIC SHIELD Electricity and surge damages the LED. It is recommended to use a wrist band or anti-electrostatic glove when handling the LED. All devices, equipment and machinery must be properly grounded.

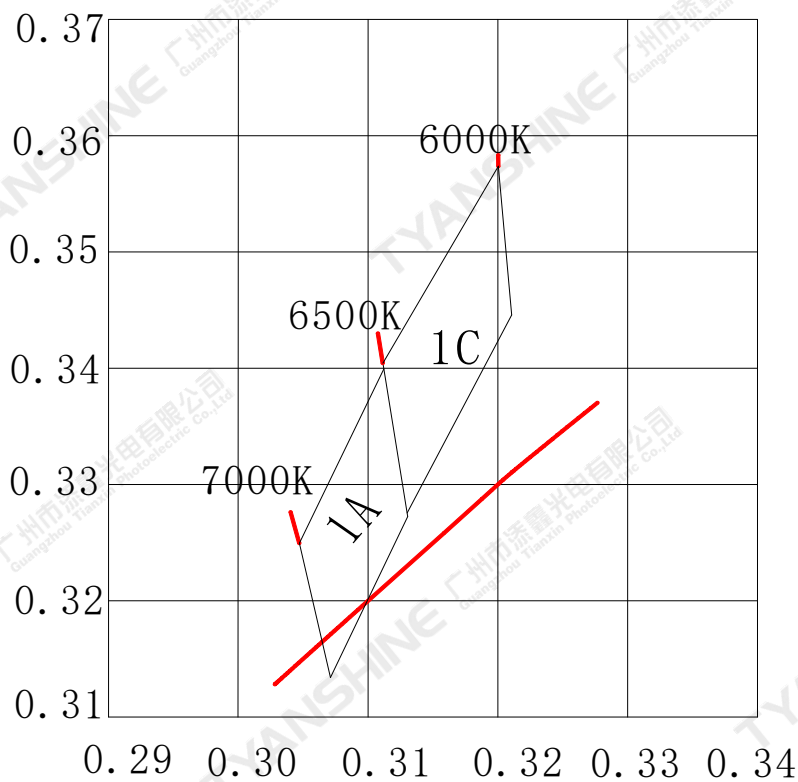
**Electrical Optical Characteristics (Tc=25°C)**

Parameter	Symbol	Condition	Emitting color	Min.	Typ.	Max.	Units
Luminous Flux	$\phi_v$	If=1.0A	R	80	—	110	lm
		If=1.0A	G	185	—	235	
		If=1.0A	B	30	—	40	
		If=1.0A	W	250	—	300	
		If=1.2A	R	110	—	140	
		If=1.5A	G	240	—	310	
		If=1.5A	B	45	—	60	
		If=1.5A	W	380	—	450	
Forward Voltage	$V_f$	If=1.0A	R	2.0	—	2.6	V
		If=1.0A	G	2.8	—	3.6	
		If=1.0A	B	2.8	—	3.6	
		If=1.0A	W	2.8	—	3.6	
		If=1.2A	R	2.2	—	2.8	
		If=1.5A	G	3.0	—	3.8	
		If=1.5A	B	3.0	—	3.8	
		If=1.5A	W	3.0	—	3.8	
Dominant Wavelength	$\lambda_d$	If=1.0A	R	618	622	628	nm
		If=1.0A	G	522	527	532	
		If=1.0A	B	448	452	458	
Peak-emission Wavelength	$\lambda_p$	If=1.0A	R	625	630	635	nm
		If=1.0A	G	516	521	526	
		If=1.0A	B	442	447	452	
Correlated Colour Temperature	CCT	If=1.0A	W	6000	—	7000	K
Color Rendering Index	Ra	—	W	—	—	—	—
Viewing Angle at 50% IV	$2\theta_{1/2}$	—	—	—	120	—	Deg
Reverse Current	$V_R=5V$	—	R	—	—	2	$\mu A$
		—	G	—	—	2	
		—	B	—	—	2	
	—	W	Not designed for reverse operation				
Thermal Resistance Junction to Case	$R\theta_{J-C}$	—	—	—	0.8	—	K/W
Temperature Coefficient of Voltage	$V\Delta F/T$	If=1.0A	R	—	-3.12	—	mV/°C
		If=1.0A	G	—	-4.5	—	
		If=1.0A	B	—	-2.52	—	
		If=1.0A	W	—	-4.15	—	

**Notes:**

- 1.Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
2. $\theta_{1/2}$  is the off-axis angle at which the luminous intensity is half the axial luminous intensity.
- 3.Luminous flux measurement tolerance:  $\pm 10\%$ .
- 4.Forward voltage measurement tolerance:  $\pm 3\%$ .
- 5.Ra measurement tolerance:  $\pm 2$ .

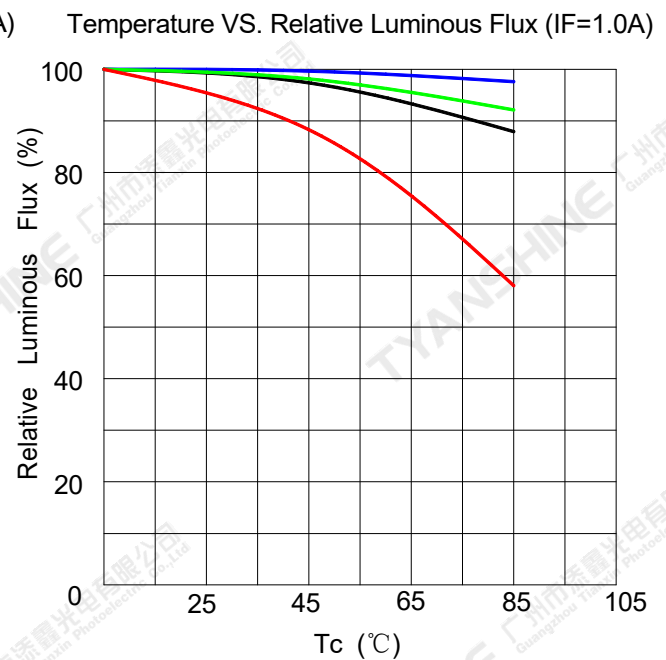
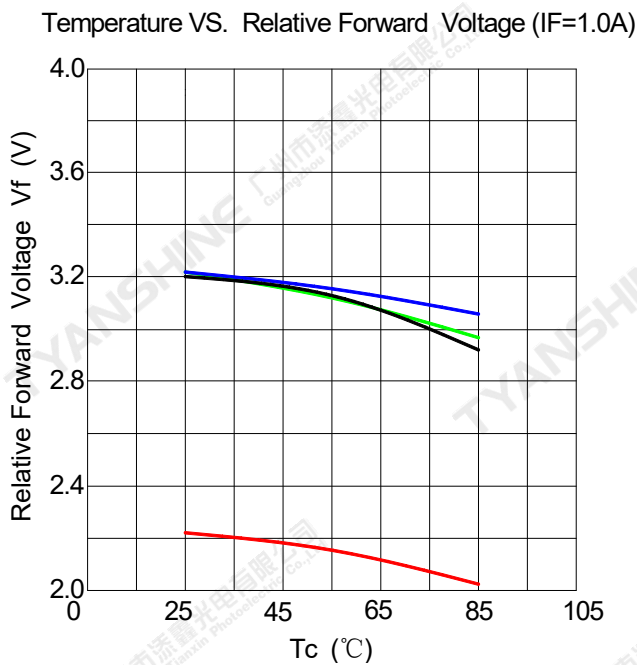
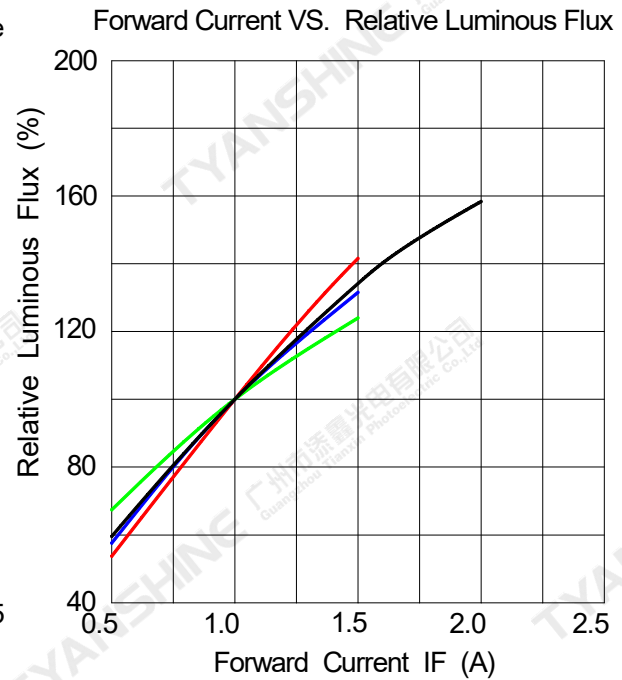
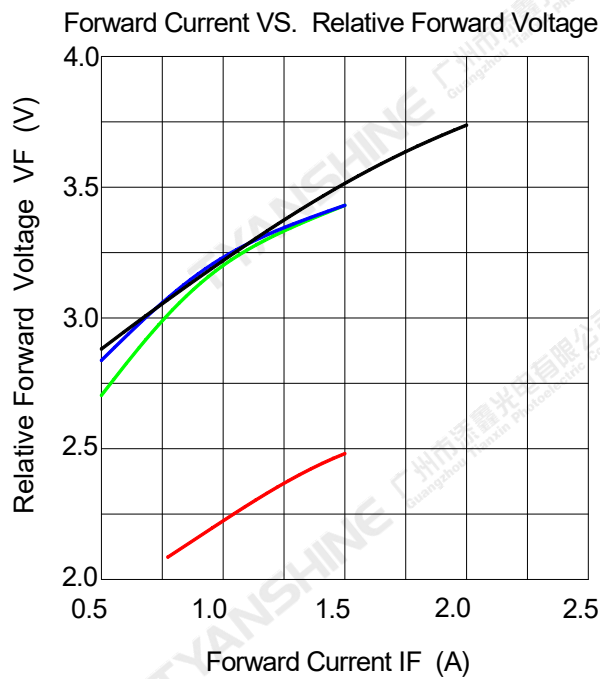
**White light Color coordinate filing  $T_c=25^\circ\text{C}, I_F=1.0\text{A}$**



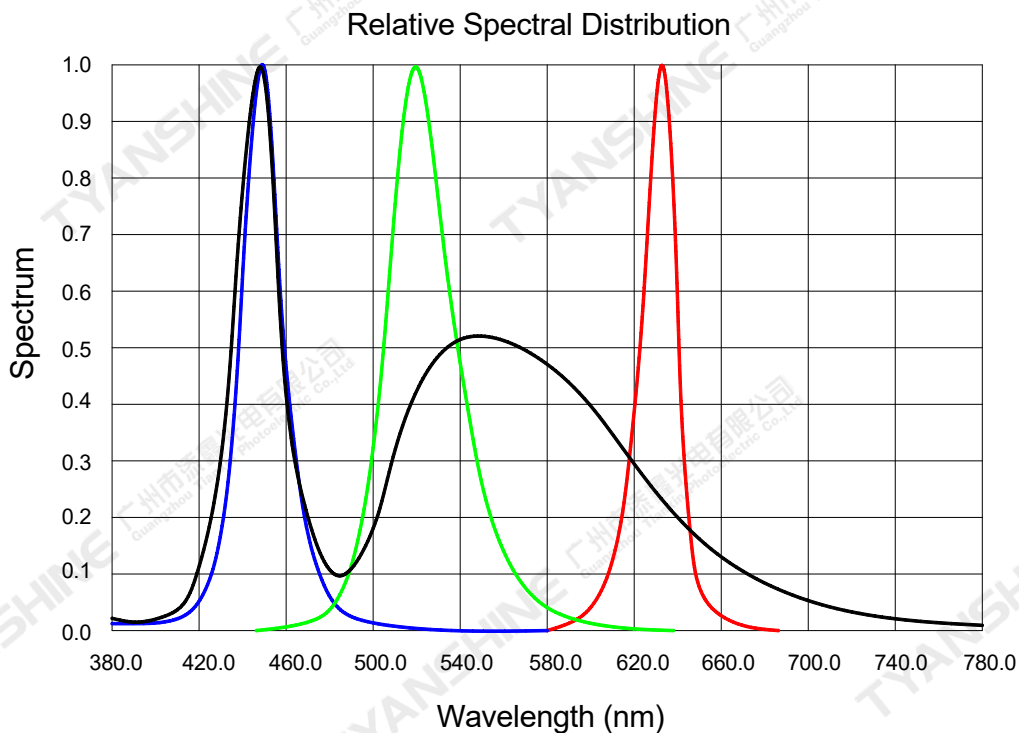
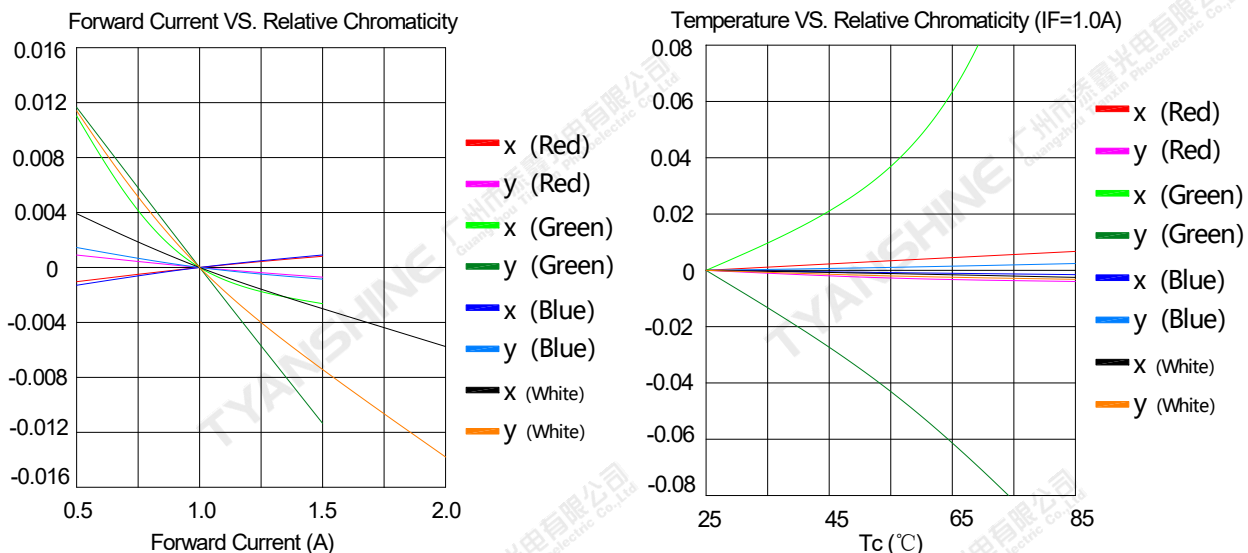
Region	CCT Range		X1	Y1	X2	Y2	X3	Y3	X4	Y4
	Min	Max								
1C	6000K	6500K	0.3211	0.3446	0.32	0.3574	0.3111	0.3404	0.313	0.3276
1A	6500K	7000K	0.3131	0.3272	0.3112	0.3399	0.3047	0.325	0.3071	0.3134

## Typical Electrical/Optical Characteristics Curves

(25°C Ambient Temperature Unless Otherwise Noted)



**Notes:** — Red (R) ; — Green (G) ; — Blue (B) ; — White (W) ;



**Notes:** — Red (R) ; — Green (G) ; — Blue (B) ; — White (W) ;

**Notes:**

1.  $2\theta_{1/2}$  is the off axis angle from lamp centerline where the luminous intensity is 1/2 of the peak value.
2. View angle tolerance is  $\pm 5^\circ$ .

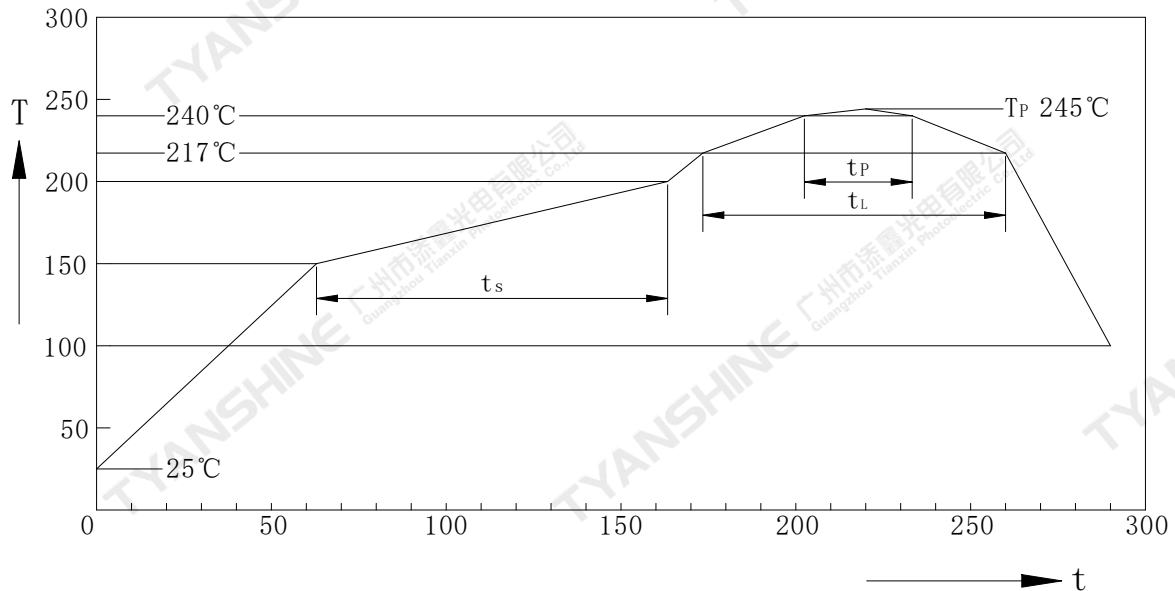
## Usage Precautions

### Storage Environment Condition

Temperature: 5°C ~ 30°C (41°F ~ 86°F)

Humidity: 60% RH Max.

### Soldering Condition



Profil-Charakteristik Profile Feature	Symbol	Pb-Free(SnAgCu)Assembly			Einheit Unit
		Minimum	Recommendation	Maximum	
Ramp-up Rate to Preheat 25°C to 150°C	-	-	2	3	K/s
Time ts T <sub>Smin</sub> to T <sub>Smax</sub>	ts	60	100	120	s
Ramp-up Rate to Peak T <sub>Smax</sub> to T <sub>p</sub>	-	-	2	3	K/s
Liquidus Temperature	T <sub>L</sub>	217			°C
Time above Liquidus temperature	t <sub>L</sub>	-	80	100	s
Peak Temperature	T <sub>P</sub>	-	245	255	°C
Time within 5°C of the specified peak temperature T <sub>p</sub> -5 K	t <sub>p</sub>	10	20	30	s
Ramp-down Rate T <sub>p</sub> to 100°C	-	-	3	6	K/s
Time 25°C to T <sub>p</sub>	-	-	-	480	-

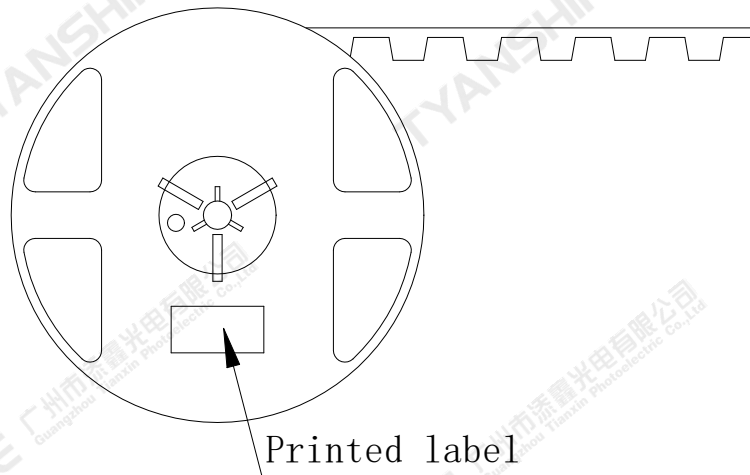
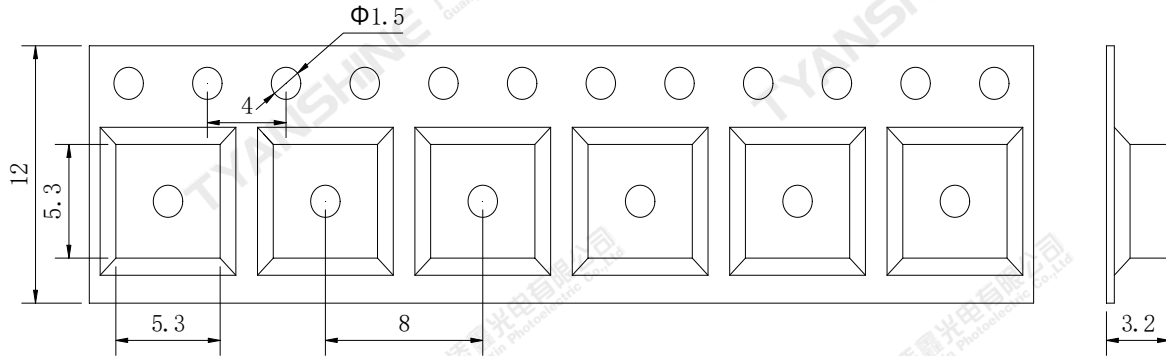
**Note:**

All temperatures refer to topside of the package, measured on the package body surface.



**Dimensions For Cannulation And Packaging**

**Quantity:1000PCS**



**Notes:**

1. All dimensions are in millimeters.
2. Tolerances are  $\pm 2.0$  mm unless otherwise noted.
3. The products are packaged together with silica gel, Transport, not to the weight of welding LED light-emitting area, As a result of the weight of LED light-emitting zone in the quality of, Irresponsible of the Company.

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