

# TX-2020W3FSA1-NG4DA-01H80

## PRODUCT SPECIFICATION

**Features:**

- ◆Excellent transiting heat from LED chip operating under 1000mA.
- ◆High luminous output.
- ◆No UV.
- ◆Encapsulated materials are environmentally certified and meet environmental requirements.

**Chip Material:**

- ◆GaN

**Emitting Color:**

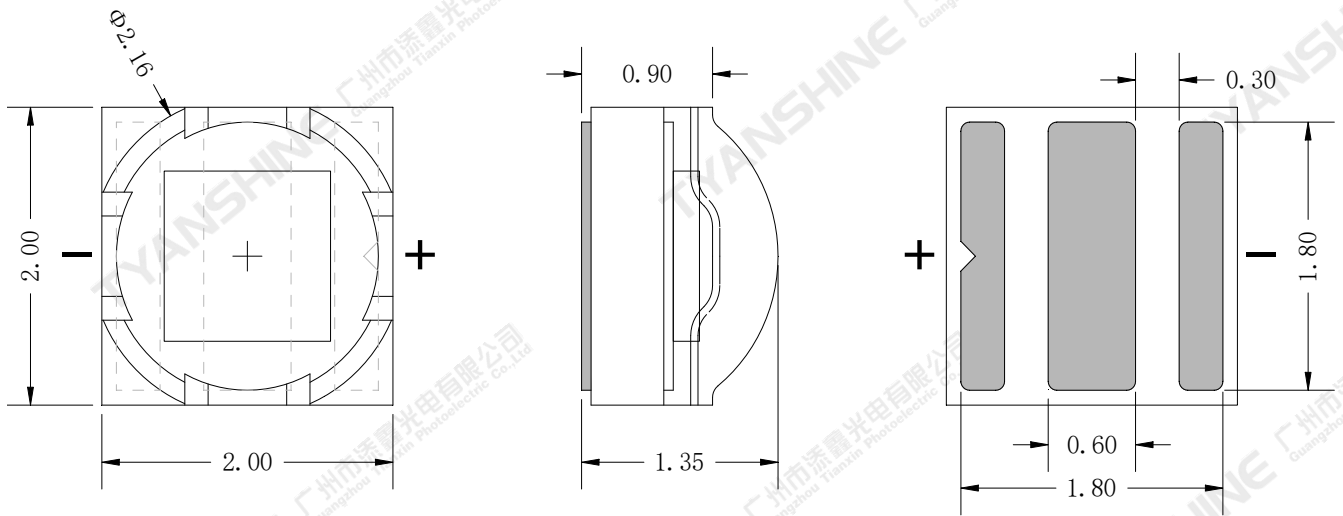
- ◆White(W)

**Applications:**

- ◆Portable Flashlight
- ◆Garden lighting
- ◆General Lighting

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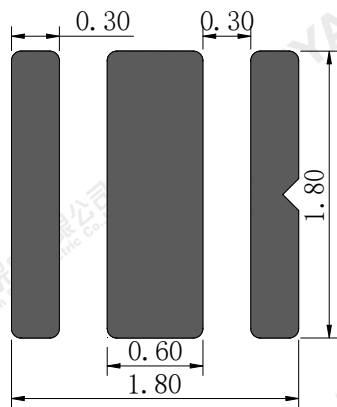
**Package Dimensions:**



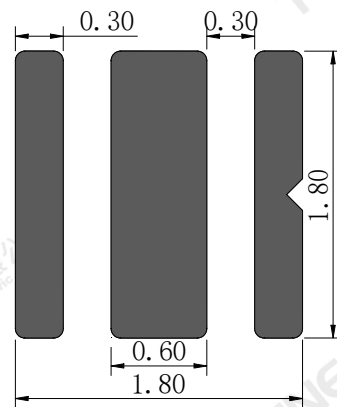
Top view

Side view

Bottom view



Recommended solder pad



Recommended stencil pattern

**Notes:**

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

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

Parameter	Symbol	Ratings	Unit
Forward Current	I <sub>F</sub>	1000	mA
Peak Forward Current <sup>Note 1</sup>	I <sub>FP</sub>	1500	
Reverse Voltage	V <sub>R</sub>	5	V
Power Dissipation	P <sub>D</sub>	3.6	W
Junction Temperature	T <sub>J</sub>	150	°C
Electrostatic Discharge Threshold (ESD)	ESD	ESD sensitive device	V
Storage Temperature	T <sub>stg</sub>	-40~+70	°C
Operation Temperature	T <sub>opr</sub>	-30~+85	

Note: 1.Pulse width ≤0.1 msec, duty ≤1/10.

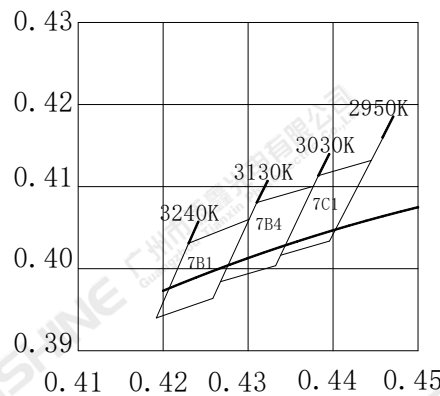
**Notes:**

- 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, IF=0.35A)**

Parameter	Symbol	Min.	Typ.	Max.	Units
Luminous Flux	$\phi_v$	120	135	—	lm
Forward Voltage	$V_f$	2.6	2.9	3.5	V
Correlated Colour Temperature	CCT	2950	3030	3240	K
Color Rendering Index	Ra	80	82	—	—
Spectral Line Half-Width	$\Delta\lambda$	115	125	135	nm
Viewing Angle at 50% IV	$2\theta_{1/2}$	—	135	—	Deg
Reverse Current	$I_R$	$V_R=5V$	—	1	$\mu A$
Thermal Resistance Junction to Case	$R\theta_{J-C}$	—	7.0	—	K/W
Temperature Coefficient of Voltage	$V\Delta F/T$	—	-2.8	—	mV/°C

**White light Color coordinate filing (IF=0.35A)**



Region	CCT Range		X1	Y1	X2	Y2	X3	Y3	X4	Y4
	Min	Max								
7C1	2950K	3030K	0.4396	0.4034	0.4338	0.4016	0.4383	0.4113	0.4445	0.4132
7B4	3030K	3130K	0.4332	0.4004	0.4268	0.3984	0.4310	0.4081	0.4377	0.4100
7B1	3130K	3240K	0.3259	0.3964	0.4192	0.3940	0.4230	0.4031	0.4301	0.4060

**Notes:**

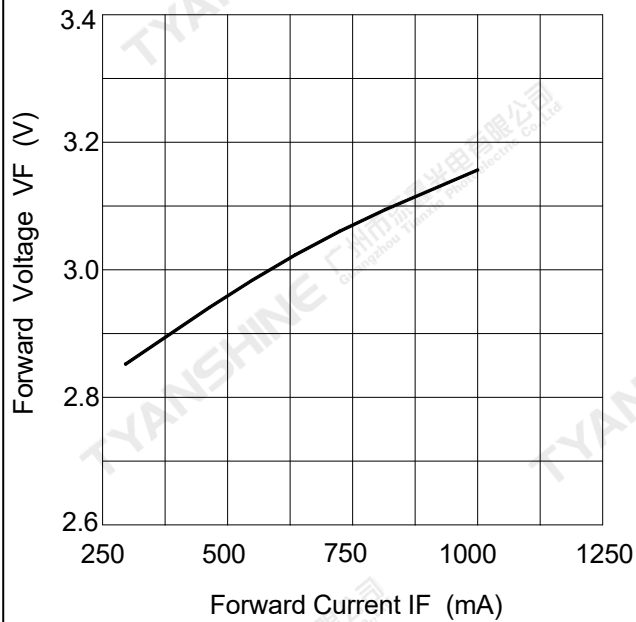
1.Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.

- 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:  $\pm 0.3V$ .
- 5. Ra measurement tolerance:  $\pm 2$ .

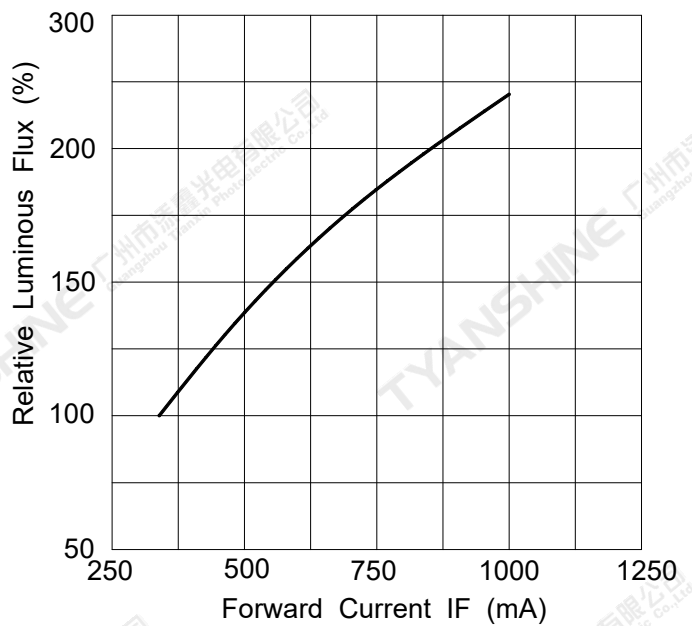
## Typical Electrical/Optical Characteristics Curves

(25°C Ambient Temperature Unless Otherwise Noted)

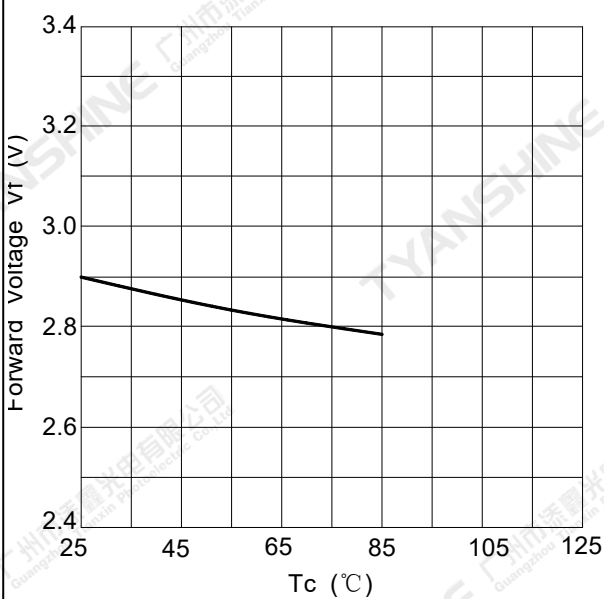
Forward Current VS. Relative Forward Voltage



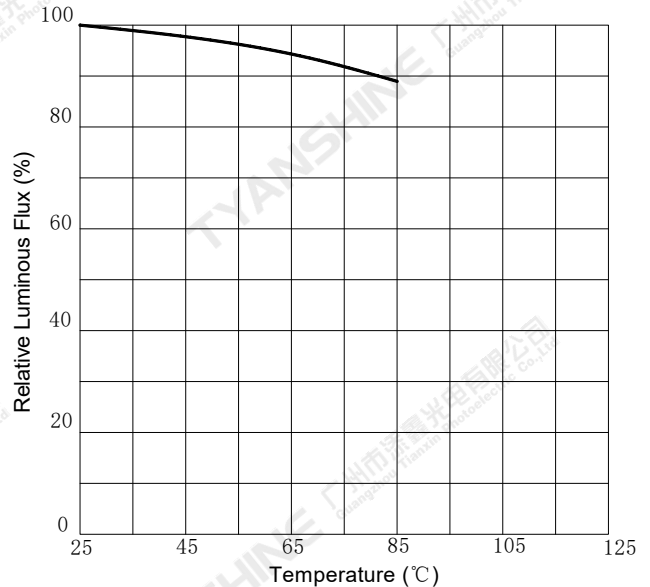
Forward Current VS. Relative Luminous Flux



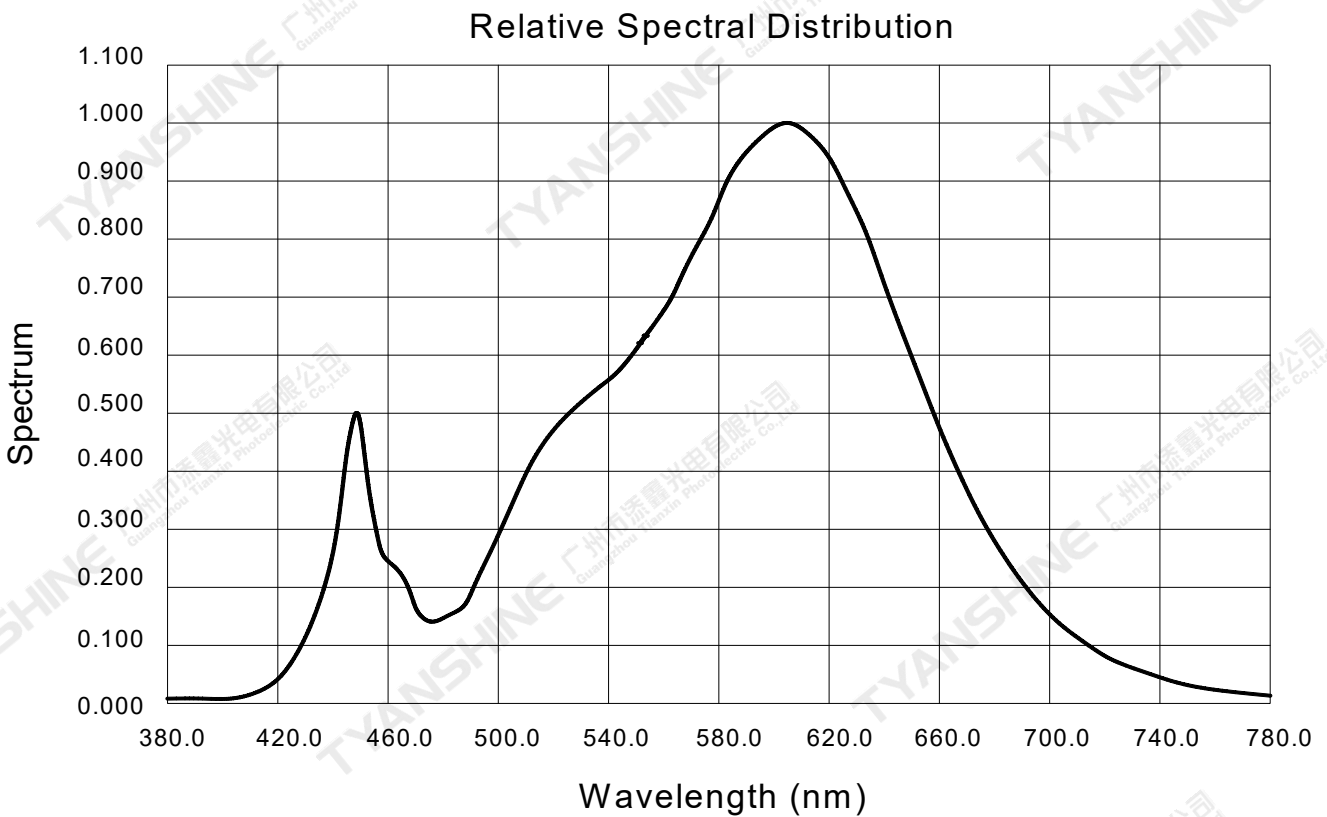
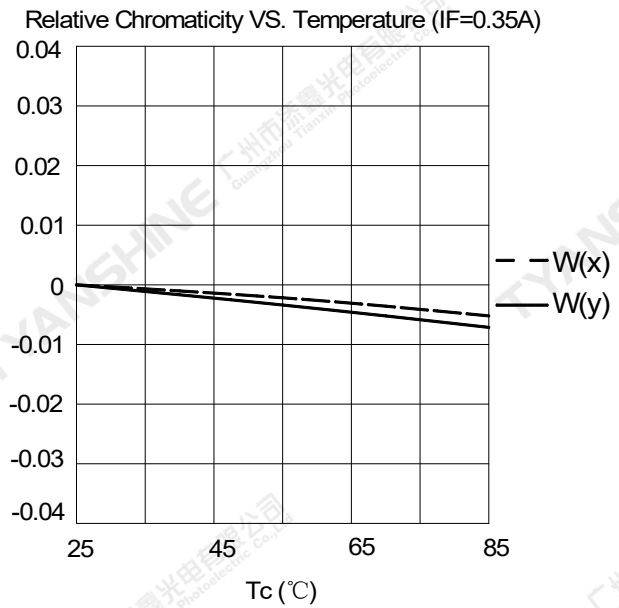
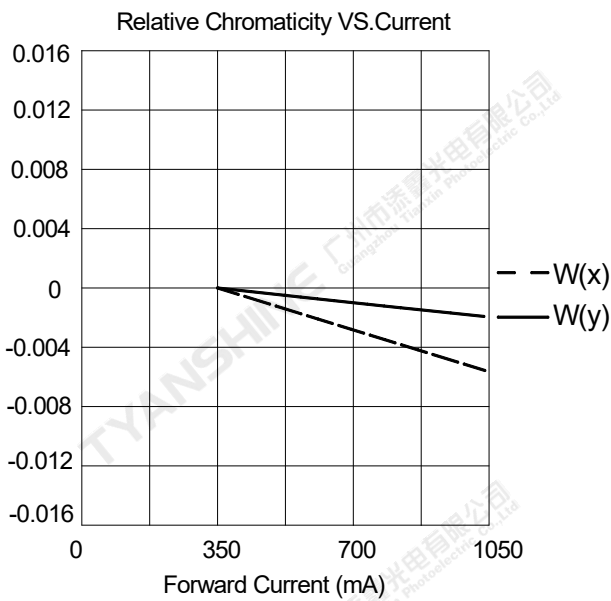
Temperature VS. Relative Forward Voltage (IF=0.35A)



Temperature VS. Relative Luminous Flux (IF=0.35A)



**Notes:** — White (W) :



**Notes:** — 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

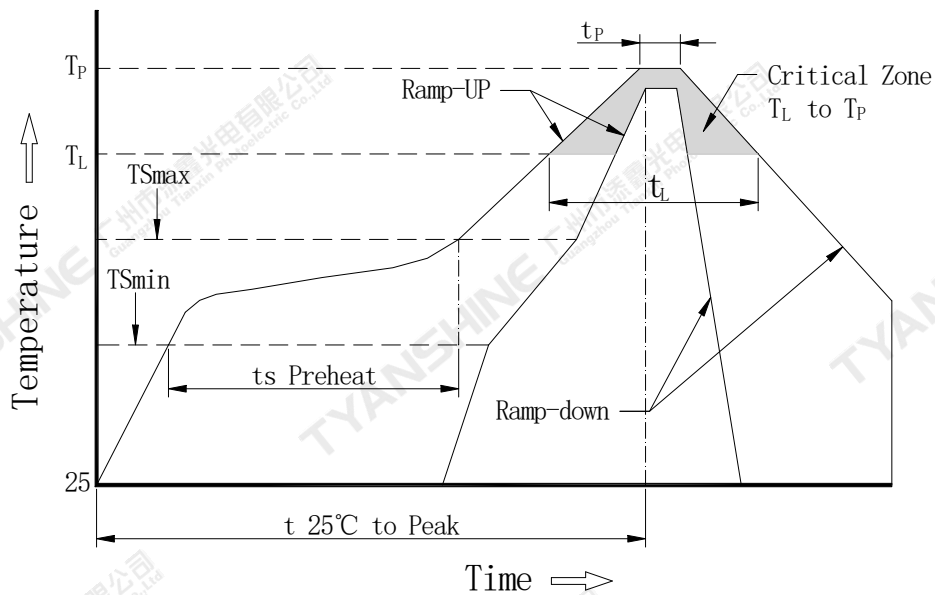
### Storage Environment Condition

Temperature:  $5^\circ\text{C} \sim 30^\circ\text{C}$  ( $41^\circ\text{F} \sim 86^\circ\text{F}$ )

Humidity: 60% RH Max.

### Soldering Condition

Use the conditions shown to the under figure.



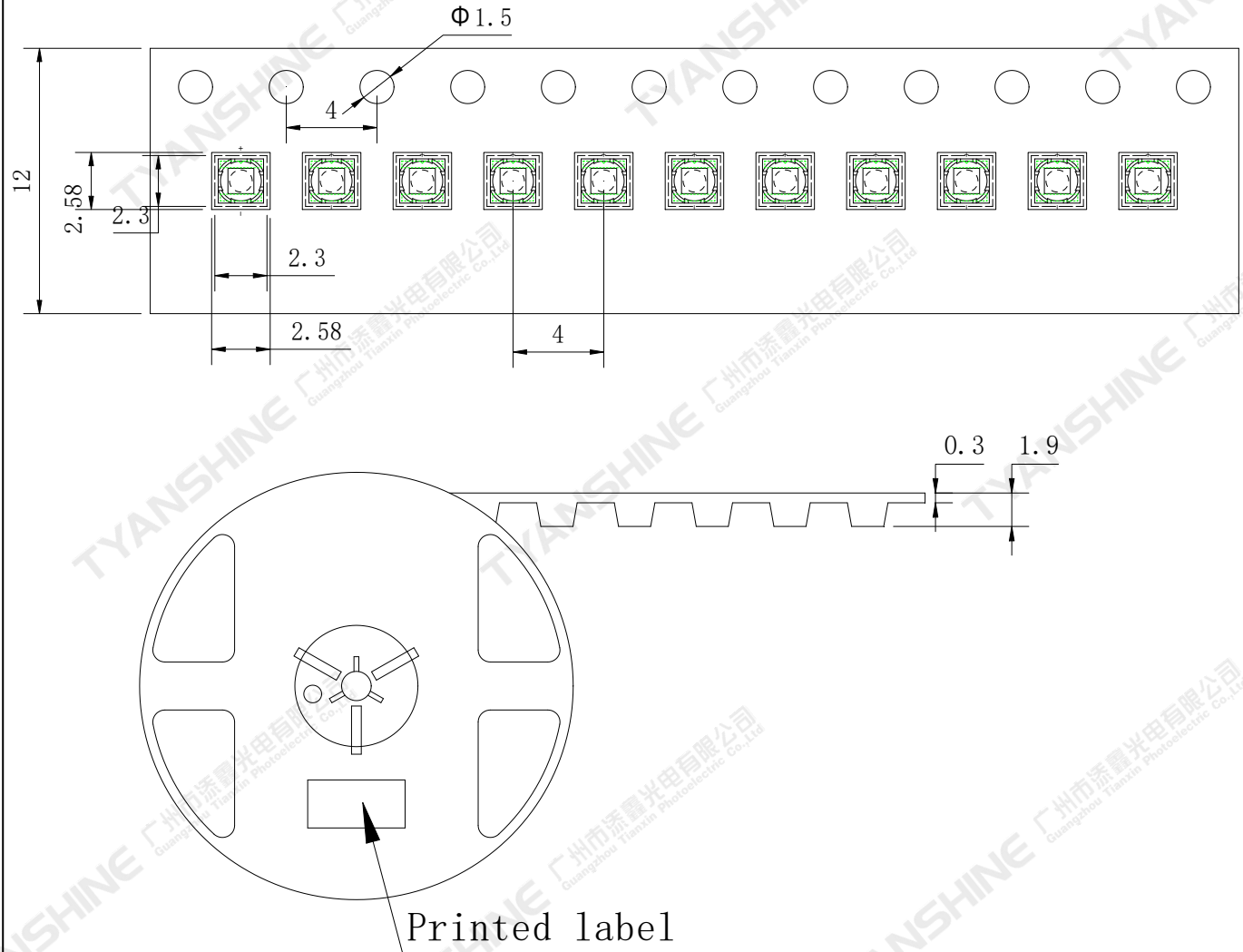
Profile Feature	Pb-Free Solder(SnBi35Ag0.3)
Average Ramp-Up Rate ( $T_{Smax}$ to $T_P$ )	3°C/second max.
Preheat: Temperature Min ( $T_{Smin}$ )	100°C
Preheat: Temperature Max ( $T_{Smax}$ )	150°C
Preheat: Time ( $T_{Smin}$ to $T_{Smax}$ )	60-120 seconds
Time Maintained Above: Temperature ( $T_L$ )	183°C
Time Maintained Above: Time ( $T_L$ )	60-150 seconds
Peak/Classification Temperature ( $T_P$ )	225°C
Time Within 5°C of Actual Peak Temperature ( $T_P$ )	10-30 seconds
Ramp-Down Rate	6°C/second max.
Time 25°C to Peak Temperature	6 minutes max.

#### Note:

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

**Dimensions For Cannulation And Packaging**

**Quantity:2000 PCS**



**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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