

Technical Data Sheet

Customer Part No.:

Inhere Part No.: S3030BPRGB0T-001-AM

Part Name: 3030 红绿蓝三色 LED

Spec Issue Date: 2025-03-06

Revision No.: A

Product Gradation : AEC-Q102 Compliance

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To Customer:

We submit herewith the following information for your approval:

- Sample OQC Inspection Record LED Dimension
 Electrical Characteristics Curve Internal Circuit Diagram
 Soldering recommendation

Prepared by : Lily

Checked by : Tom

Approved by : Ares

Date : 2025-03-06

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Customer Opinion

- Approve and no objection
 Reject with the following reason:



东莞市银河光电有限公司

Dongguan Inhere Opto Co.,Ltd.

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Features

3.20mm×2.95mm LED, 0.63mm thickness

Low power consumption

Wide view angle

Package: 4000pcs/reel

RoHS Compliant

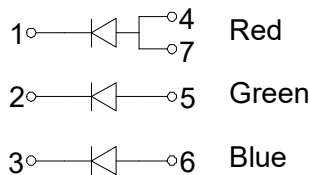
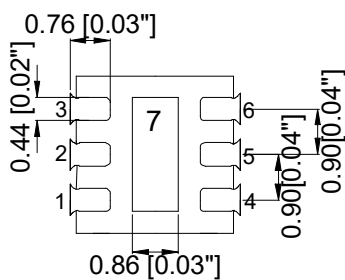
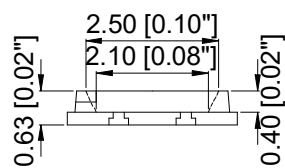
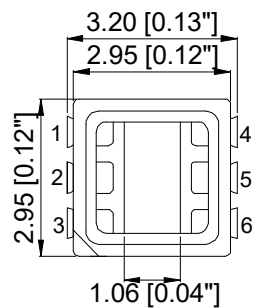
Applications

Automotive backlighting or indicator

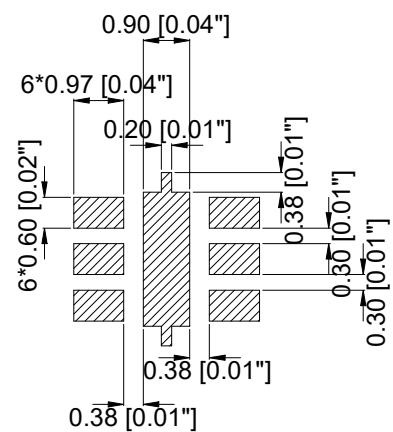
Ideal for back light and indicator

Various colors and lens types available

Package Outlines



Recommend Soldering Pad



Part No.	Emitted color	Dice	Lens color
S3030BPRGB0T-001-AM	Red	AlGaInP	Water transparent
	Green	InGaN/GaN	
	Blue	InGaN/GaN	

Notes:

All dimensions are in millimeters (inches).

Tolerances are $\pm 0.1\text{mm}$ (0.004inch) unless otherwise noted.

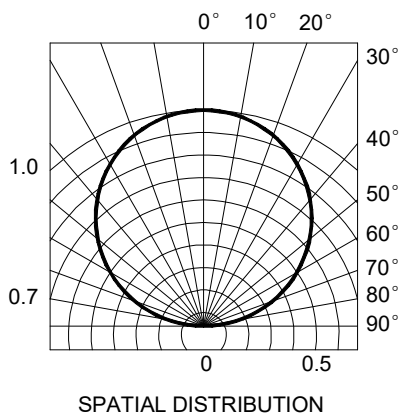
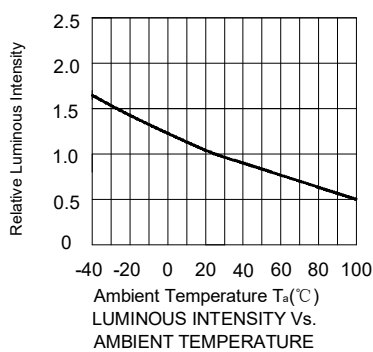
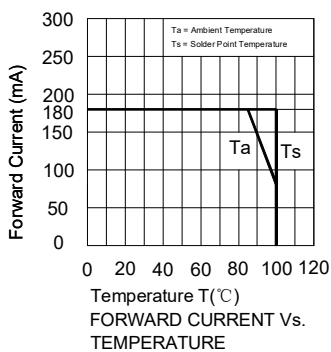
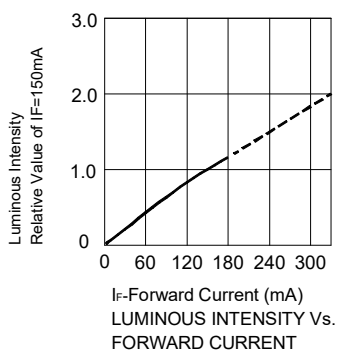
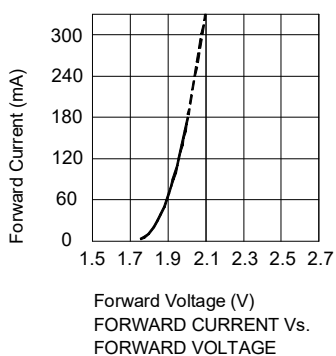
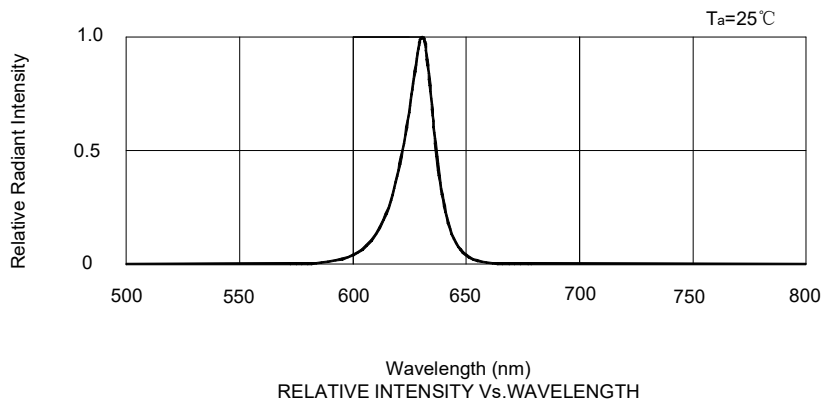
Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Value			Unit
		R	G	B	
Power dissipation	Pd	432	612	612	mW
ESD(HBM,R=100KΩ,C=100pF)	--	2	2	2	KV
Forward current	If	180	180	180	mA
Peak pulsing current (1/10 duty f=1kHz)	Ifp	250	250	250	mA
Reverse voltage	V _R	5	5	5	V
Junction temperature	T _J	115	125	125	℃
Operating temperature	Top	-40 ~+100			℃
Storage temperature	Tstg	-40 ~+100			℃
Humidity sensitive level	MSL	3			--

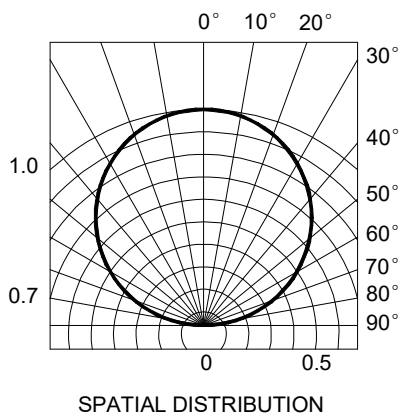
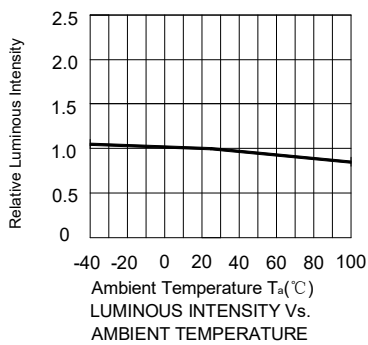
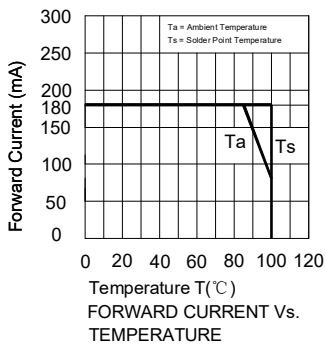
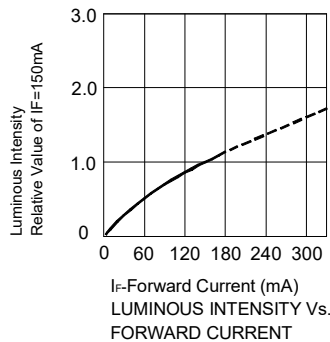
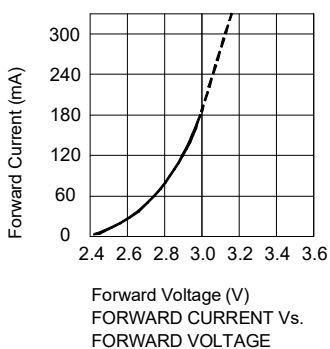
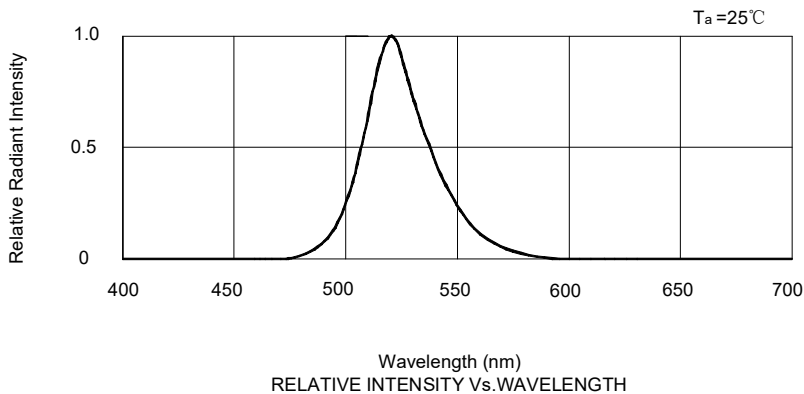
Electro-Optical Characteristics (Ta=25℃)

Parameter	Test Condition	Symbol		Value			Unit
				Min	Typ	Max	
Wavelength at peak emission	If=150mA	λ_p	R	--	632	--	nm
			G	--	522	--	
			B	--	458	--	
Spectral half bandwidth	If=150mA	$\Delta \lambda$	R	--	16	--	nm
			G	--	32	--	
			B	--	18	--	
Dominant wavelength	If=150mA	λ_d	R	620	--	630	nm
			G	520	--	530	
			B	460	--	470	
Forward voltage	If=150mA	Vf	R	1.8	--	2.4	V
			G	2.8	--	3.4	
			B	2.8	--	3.4	
Luminous flux	If=150mA	Φ	R	18	--	28	lm
			G	30	--	50	
			B	7	--	11	
Viewing angle	If=150mA	$2\theta_{1/2}$	R	--	120	--	Deg
			G	--	120	--	
			B	--	120	--	
Reverse current	Vr=5V	Ir	R	--	--	10	μ A
			G	--	--	10	
			B	--	--	10	

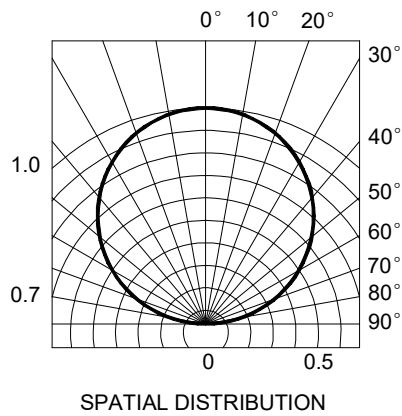
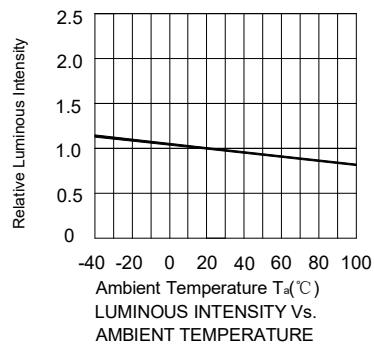
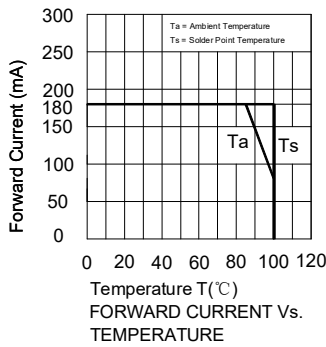
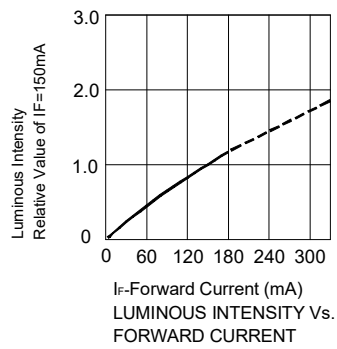
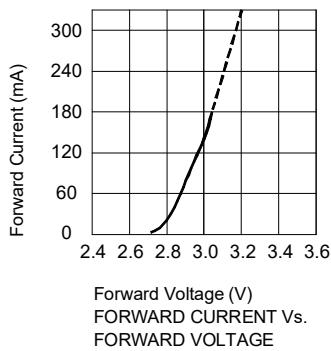
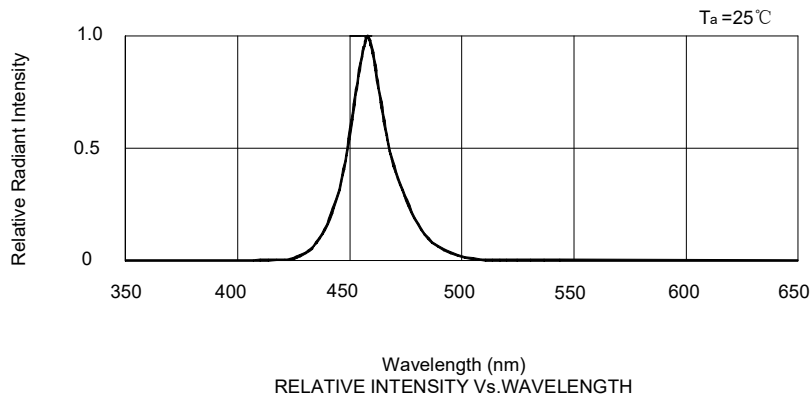
Optical Characteristic Curves (Red)



Optical Characteristic Curves (Green)

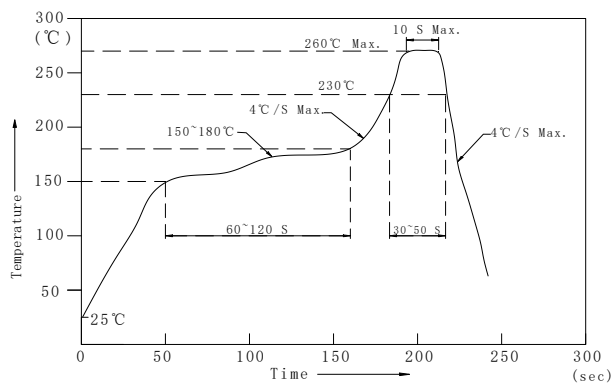


Optical Characteristic Curves (Blue)



Reflow Profile

■ Reflow Temp/Time



Notes:

1. We recommend the reflow temperature 245°C (±5°C).the maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Times of reflow process shall be 2 or less.

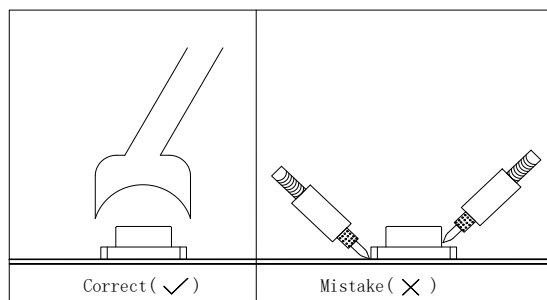
■Soldering iron

Basic spec is $\leq 5\text{sec}$ when 320°C (±20°C). If temperature is higher, time should be shorter (+10°C → -1sec).

Power dissipation of iron should be smaller than 20W, and temperatures should be controllable. Surface temperature of the device should be under 350°C.

■Rework

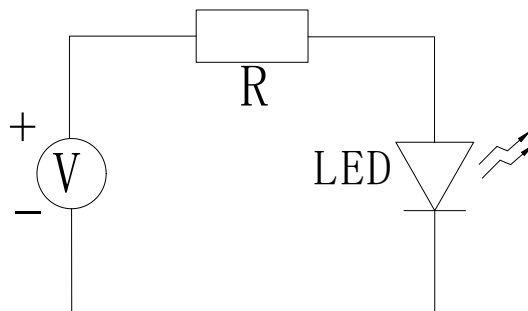
1. Customer must finish rework within 5 sec under 340°C.
2. The head of iron cannot touch copper foil.
3. Twin-head type is preferred.



- Avoid rubbing or scraping the resin by any object, during high temperature, for example reflow solder etc.

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

2.2 Shelf life in sealed bag: 12 month at <math><5^{\circ}\text{C}\sim 30^{\circ}\text{C}</math> and <math><30\%</math> R.H. after the package is opened, the products should be used within 168hrs 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 168hrs.

The Condition is: $65\pm 5^{\circ}\text{C}/24\text{hrs}$.

Test Items and Results of Reliability (1)

Test Item	Test Conditions	Standard Test Method	Note	Number of Test
External Visual	Ta=25±3℃ ψ(%)=40%RH~60%RH	JESD22 B-101B	--	--
Parametric Verification	Ta=25±3℃ ψ(%)=40%RH~60%RH	JESD22 A-108C	--	0/25
D.P.A	Ta=25±3℃ ψ(%)=40%RH~60%RH Random Sample H3TRB, HAST,TC	AEC-Q101-004-C	--	0/3
ESD	Ta=25±3℃ ψ(%)=40%RH~60%RH HBM: R=1.5KΩ C=100pF	JESD22 A-114E	3 times Negative/ Positive	0/30
Physical Dimension	Ta=25±3℃ ψ(%)=40%RH~60%RH	JESD22 B-100B	--	0/3
Vibration Variable Frequency	Ta=25±3℃ ψ(%)=40%RH~60%RH 0.06inch displacement,20 to 100Hz,50g 100Hz to 2KHz	JESD22 B-103B	4times	0/30
Mechanical Shock	Ta=25±3℃ ψ(%)=40%RH~60%RH 1500g's for 0.5s,5blows, 3orientation	JESD22 B-104C	3times	0/30
Temperature Cycling	Ta=-40°-100℃,30min dwell, 5min transfer,1000 cycles	JESD22 A-104C	1000cycles	0/77
Power Temperature Cycling	Ta=-40~85℃ 20min dwell/1hour transition 2 min ON / 2 min OFF	JESD22 A-105C	1000cycles	0/77
Steady-state temperature-humidity bias life test	Ta=85℃,ψ(%)=85%RH	JESD22 A-101C	1000hrs	0/77

Test Items and Results of Reliability (2)

Test Item	Test Conditions	Standard Test Method	Note	Number of Test
High Temperature Operating Life	Ta=100℃	JESD22 A-101C	1000hrs	0/77
Low Temperature Operating Life	Ta=-40℃	JESD22 A-101C	1000hrs	0/77
Low Temperature Storage Life	Ta=-40℃, non-operating	JESD22 A-119	1000hrs	0/77
High Temperature Storage Life	Ta=100℃,non-operating	JESD22 A-103C	1000hrs	0/77
Thermal Cycles	Ta=-40~100℃,20min dwell, <10 second transfer	JESD22 A-104C	1000cycles	0/77
High Temperature Reverse Bias Test	Ta=85℃,VR=5V	JESD22 A-108C	1000hrs	0/77
Bond Shear/Die Shear	Ta=25±3℃ ψ(%)=40%RH~60%RH	AEC-Q101-D1	--	0/10
Sulphur resistance	Ta=40±3℃ ψ(%)=90%RH Concentration:H2S/15PPM	IEC60810	336hrs	0/10
Salt Atmosphere	Ta=35±3℃,PH=6.0~7.5	JESD22 A-107B	24hrs	0/5
Reflow soldering	Ta=260±5℃,Time=10S	JESD22 B-106C	5 times	0/30

Forward Voltage Rank Combination (IF=150mA)

Rank	Min.	Max.	Unit
Red	1.8	2.0	V
	2.0	2.2	
	2.2	2.4	
Green	2.8	3.0	
	3.0	3.2	
	3.2	3.4	
Blue	2.8	3.0	
	3.0	3.2	
	3.2	3.4	

Note:

1. The tolerance of forward voltage is $\pm 0.1V$.
2. This specification is a standard specification of our factory, can make in accordance with customer's special requirement.

Luminous Flux Rank Combination (IF=150mA)

Rank	Min.	Max.	Unit
Red	18	20	lm
	20	22	
	22	24	
	24	26	
	26	28	
Green	30	35	
	35	40	
	40	45	
	45	50	
Blue	7	8	
	8	9	
	9	10	
	10	11	

Notes:

1. The tolerance of luminous flux (Φ) is $\pm 11\%$.
2. This specification is a standard specification of our factory, can make in accordance with customer's special requirement.

Dominant Wavelength Rank Combination (IF=150mA)

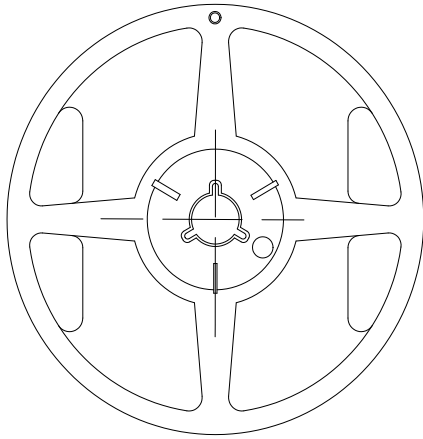
Rank	Min.	Max.	Unit
Red	620	622	nm
	622	624	
	624	626	
	626	628	
	628	630	
Green	520	522	
	522	524	
	524	526	
	526	528	
	528	530	
Blue	460	462	
	462	464	
	464	466	
	466	468	
	468	470	

Notes:

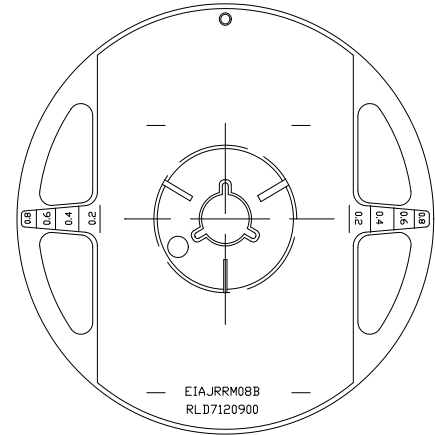
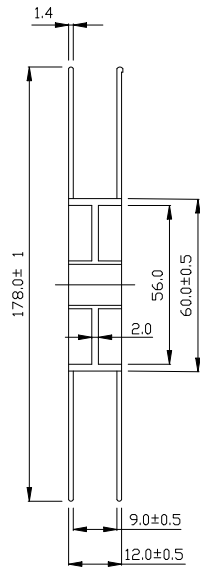
1. The tolerance of dominant wavelength is $\pm 1\text{nm}$.
2. This specification is a standard specification of our factory, can make in accordance with customer's special requirement.

3030 Series SMD Top LED Lamps Packaging Specifications

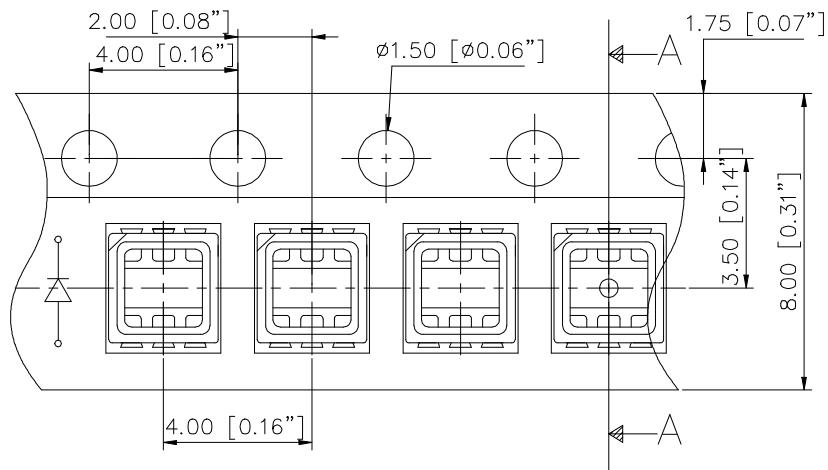
● Feeding Direction



● Dimensions of Reel (Unit: mm)



● Dimensions of Tape (Unit: mm)

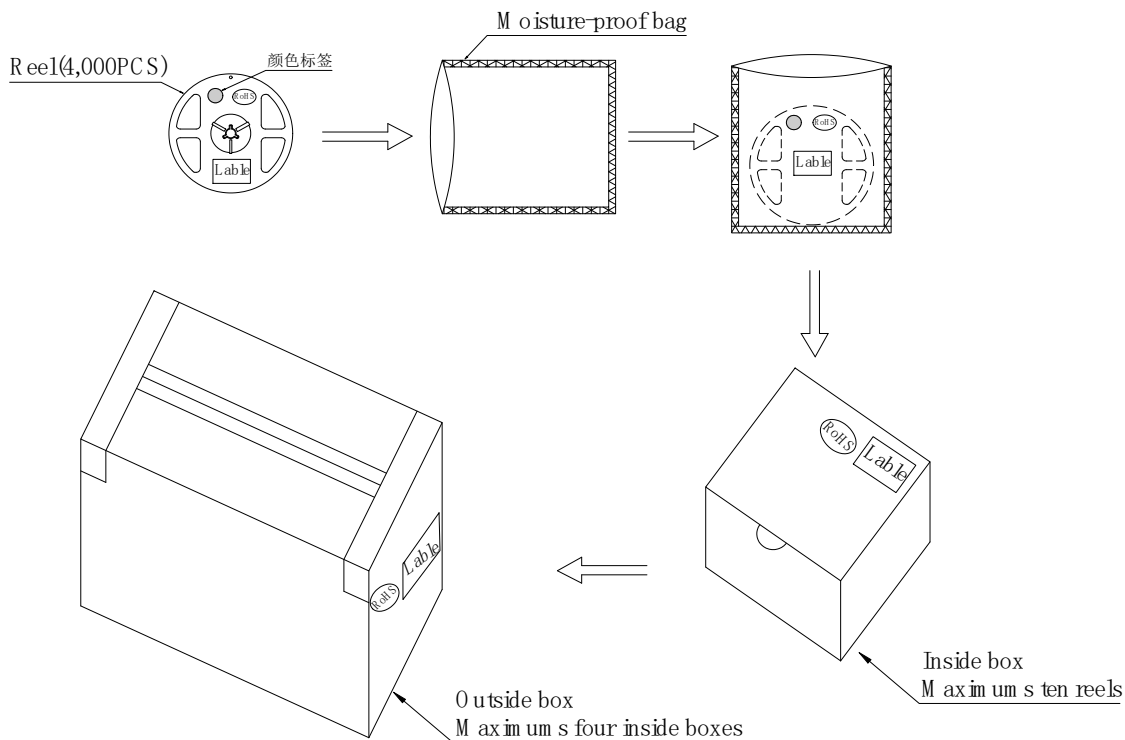


Notes:

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. 4,000pcs/Reel.

3030 Series SMD Top LED Lamps Packaging Specifications

- Packaging specifications



Notes:

Reeled products (numbers of products are 4,000pcs) packed in a seal off moisture-proof bag along with a desiccant one by one, ten moisture-proof bag of maximums (total maximum number of products are 40,000pcs) packed in an inside box (about size: 240x 230x 130mm) and four inside boxes of maximums are put in the outside box (about size: 545mm x 260mm x 250mm) 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.