

# Specifications for Approval

Customer Part No.:

Inhere Part No.: S1005ATWWD-001

Part Name: 1005 暖白光 LED

Spec Issue Date: 2018-07-05

Revision No.: A

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  
Date: 2018-07-05

Checked by: Tom  
Date: 2018-07-05

Approved by: Wangxiaojun  
Date: 2018-07-05

Customer Opinion

- Approve and no objection
- Reject with the following reason:

**inhere**   
light for your mind  
银河光电

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Http://www.inhereopto.com

## Features

1.00mm x 0.50mm SMD LED, 0.43mm thickness

Low power consumption

Wide view angle

Package: 3000pcs/reel

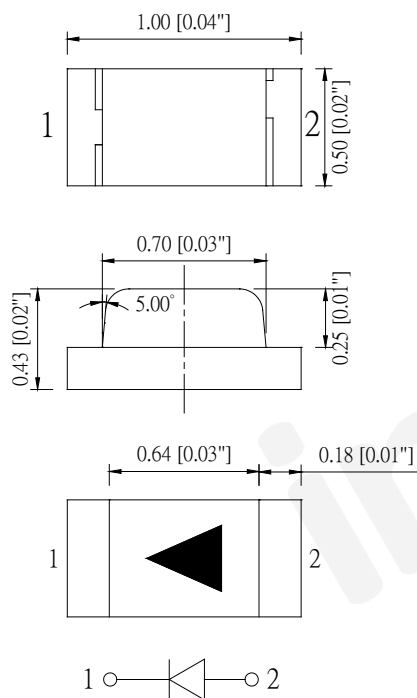
RoHS Compliant

## Applications

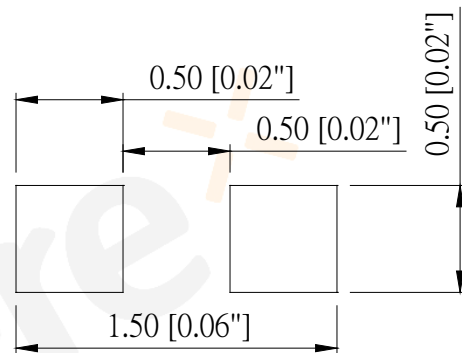
Ideal for back light and indicator

Various colors and lens types available

## Package outlines



## Recommend Pad Layout



Part No.	Emitted color	Dice	Lens color
S1005ATWWD-001	White	InGaN/GaN	Yellow

### Notes:

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

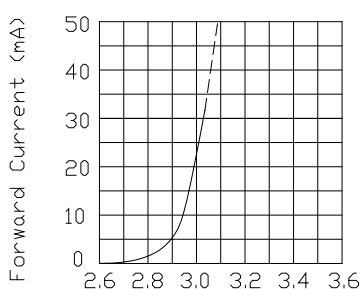
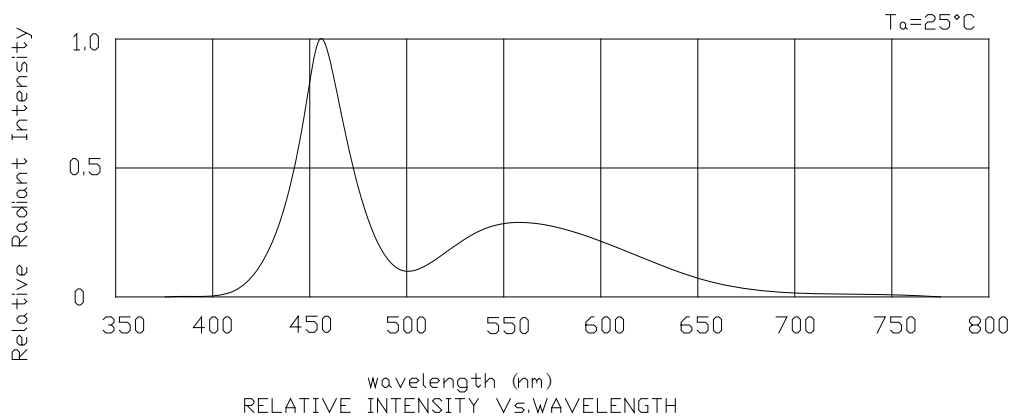
**Absolute Maximum Ratings (Ta=25°C)**

Parameter	Symbol	Value	Unit
Forward current	If	30	mA
Reverse voltage	Vr	5	V
Power dissipation	Pd	108	mW
Operating temperature	Top	-40 ~+80	°C
Storage temperature	Tstg	-40 ~+85	°C
Peak pulsing current (1/8 duty f=1kHz)	Ifp	125	mA

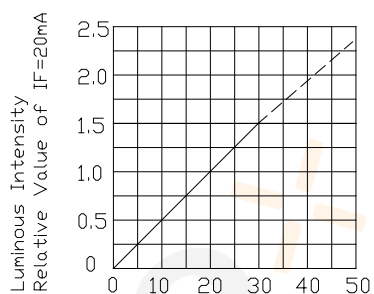
**Electro-Optical Characteristics (Ta=25°C)**

Parameter	Test Condition	Symbol	Value			Unit
			Min	Typ	Max	
CIE Coordinates	If=20mA	X	0.4165	--	0.5053	--
		Y	0.3618	--	0.4150	
Forward voltage	If=20mA	Vf	2.8	--	3.6	V
Luminous intensity	If=20mA	Iv	630	950	--	mcd
Viewing angle at 50% Iv	If=10mA	2θ 1/2	--	140	--	Deg
Reverse current	Vr=5V	Ir	--	--	10	μA

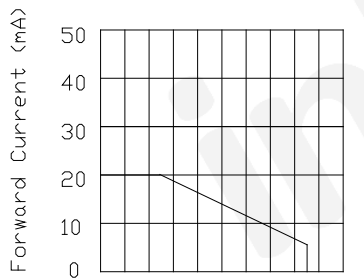
# Optical Characteristic Curves



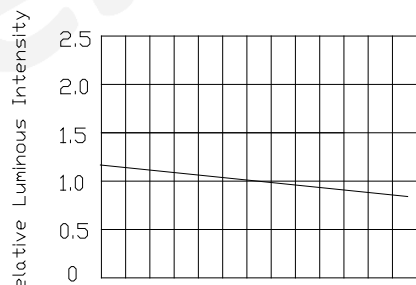
FORWARD CURRENT Vs. FORWARD VOLTAGE



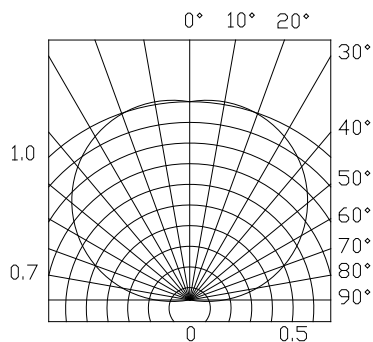
LUMINOUS INTENSITY Vs. FORWARD CURRENT



FORWARD CURRENT DERATING CURVE



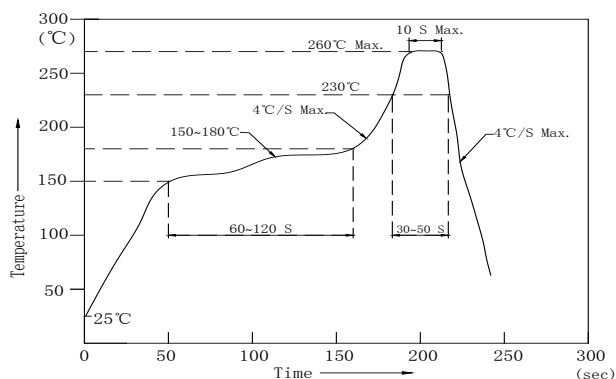
LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE



SPATIAL DISTRIBUTION

## Reflow Profile

### ■ Reflow Temp/Time



### Notes:

1. We recommend the reflow temperature  $245^{\circ}\text{C}$  ( $\pm 5^{\circ}\text{C}$ ).the maximum soldering temperature should be limited to  $260^{\circ}\text{C}$ .
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

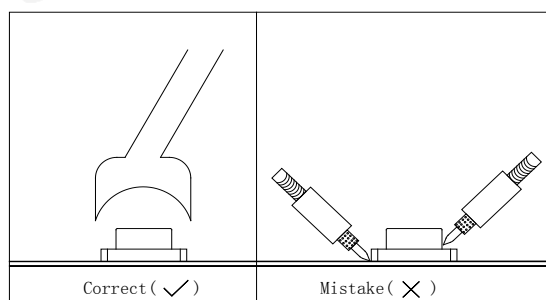
### ■Soldering iron

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

Power dissipation of iron should be smaller than 20W, and temperatures should be controllable .Surface temperature of the device should be under  $350^{\circ}\text{C}$ .

### ■Rework

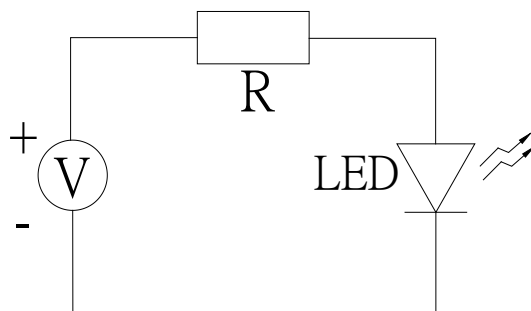
1. Customer must finish rework within 5 sec under  $340^{\circ}\text{C}$ .
2. The head of iron cannot touch copper foil
3. Twin-head type is preferred.



- 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\% \text{ R.H.}</math> after the package is opened, the products should be used within a week or they should be keeping to stored at  $\leq 20$  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 <math>< 5\% \text{RH}</math>, 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

### Test Items and Results of Reliability

Test Item	Test Conditions	Standard Test Method	Note	Number of Test
Reflow Soldering	Ta=260±5℃,Time=10±2S	JB/T 10845-2008	3times	0/22
Salt Atmosphere	Ta=35±3℃,PH=6.5~7.2	GB/T 2423.17-2008	24hrs	0/22
Temperature Cycling	-40±5℃ 30±1min ↑→(25℃/5±1min)↓ 100±5℃ 30±1min	GB/T 2423.22-2012	100cycles	0/22
Thermal Shock	Ta=-40±5℃~100±5℃, 15±1min dwell	GB/T 2423.22-2012	100cycles	0/22
High Humidity High Temp. Cycling	Ta=30±5℃~65±5℃, 90±5%RH,24hrs/1cycle	GB/T 2423.4-2008	10cycles	0/22
High Humidity High Temp. Storage Life	Ta=85±5℃,ψ(%)=85±5%RH	GB/T 2423.3-2006	1000hrs	0/22
High Temperature Storage Life	Ta=100±5℃,non-operating	GB/T 2423.2-2008	1000hrs	0/22
Low Temperature Storage Life	Ta=-40±5℃,non-operating	GB/T 2423.1-2008	1000hrs	0/22
Life Test	Ta=26±5℃,@20mA, ψ(%)=25%RH~55%RH	--	1000hrs	0/22
High Humidity High Temp. Operating Life	Ta=85±5℃,@20mA, ψ(%)=85%RH	GB/T 2423.3-2006	500hrs	0/22
Low Temperature Operating Life	Ta=-20±5℃,@20mA	GB/T 2423.1-2008	1000hrs	0/22

**Forward Voltage Rank Combination (IF=20mA)**

Rank	Min.	Max.	Unit
H	2.8	2.9	V
I	2.9	3.0	
J	3.0	3.1	
K	3.1	3.2	
L	3.2	3.3	
M	3.3	3.4	
N	3.4	3.5	
O	3.5	3.6	

**Luminous Intensity Rank Combination (IF=20mA)**

Rank	Min.	Max.	Unit
R	630	800	mcd
S	800	1000	
T	1000	1250	
U	1250	1600	
V	1600	--	



**Chromaticity coordinates Ranks combination (IF=20mA)**

Rank	Chromaticity coordinates				
Lb	X	0.4287	0.4165	0.4229	0.436
	Y	0.3655	0.3618	0.3752	0.3792
Lc	X	0.436	0.4229	0.4296	0.4436
	Y	0.3792	0.3752	0.3892	0.3935
Ld	X	0.4436	0.4296	0.4366	0.4516
	Y	0.3935	0.3892	0.4039	0.4085
Mb	X	0.442	0.4287	0.436	0.4504
	Y	0.3683	0.3655	0.3792	0.3822
Mc	X	0.4504	0.436	0.4436	0.4591
	Y	0.3822	0.3792	0.3935	0.3968
Md	X	0.4591	0.4436	0.4516	0.4682
	Y	0.3968	0.3935	0.4085	0.412
NB	X	0.458	0.442	0.4504	0.4668
	Y	0.3706	0.3683	0.3822	0.3846
Nc	X	0.4668	0.4504	0.4591	0.4761
	Y	0.3846	0.3822	0.3968	0.3992
Nd	X	0.4761	0.4591	0.4682	0.4858
	Y	0.3992	0.3968	0.412	0.4145
Ob	X	0.4751	0.458	0.4668	0.4847
	Y	0.3712	0.3706	0.3846	0.3852
Oc	X	0.4847	0.4668	0.4761	0.4948
	Y	0.3852	0.3846	0.3992	0.3998
Od	X	0.4948	0.4761	0.4858	0.5053
	Y	0.3998	0.3992	0.4145	0.415

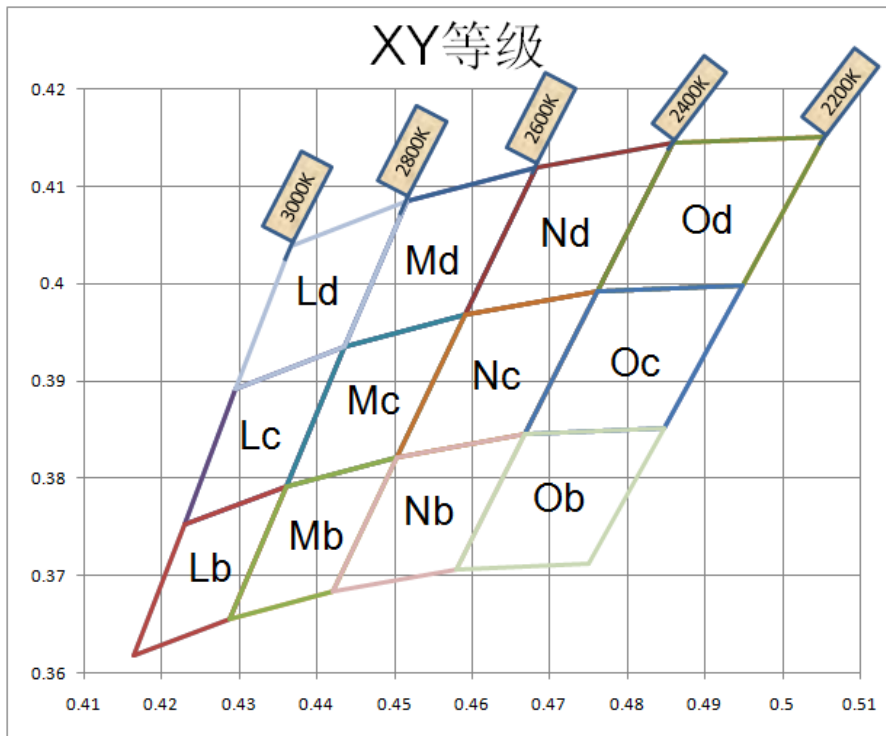
**Group Name on Label (Example DATA: J S Mc 20)**

DATA: J S Mc 20	Vf(V)	Iv (mcd)	CIE(X,Y)	Test Condition
J→S→Mc→20	3.0~3.1	800~1000	X(0.436~0.4591),Y(0.3792~0.3968)	IF=20mA

**Notes:**

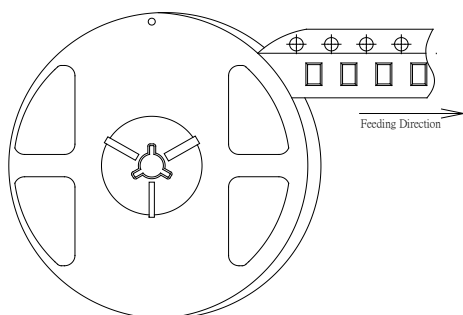
- 1.The tolerance of luminous intensity (Iv )is  $\pm 15\%$  .
2. The tolerance of CIE Coordinates(X,Y)  $\pm 0.01$ .
3. This specification is preliminary.
4. This specification is a standard specification of our factory, can make in accordance with customer's special requirement.

XY chromaticity coordinate

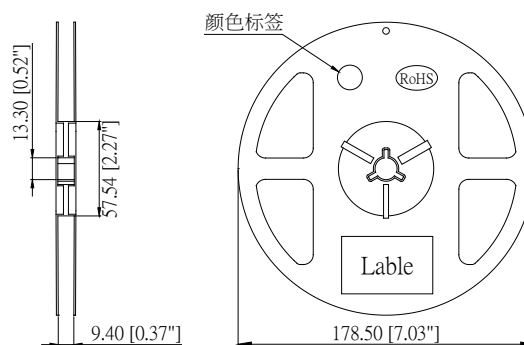


# 1005 Series SMD Chip LED Lamps Packaging Specifications

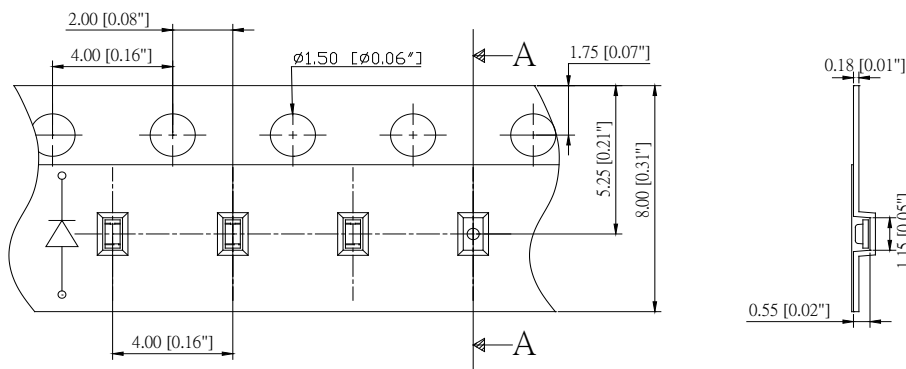
## ● Feeding Direction



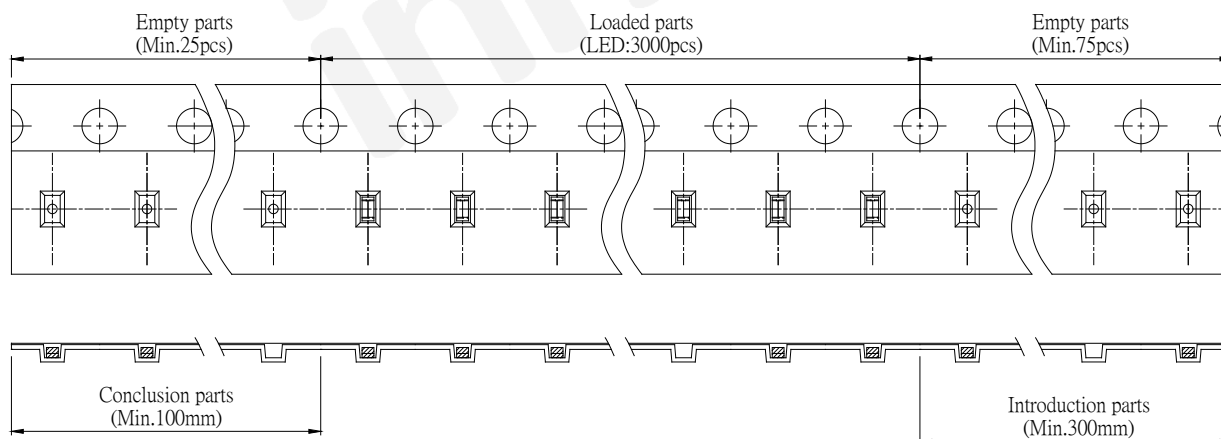
## ● Dimensions of Reel (Unit: mm)



## ● Dimensions of Tape (Unit: mm)



## ● Arrangement of Tape

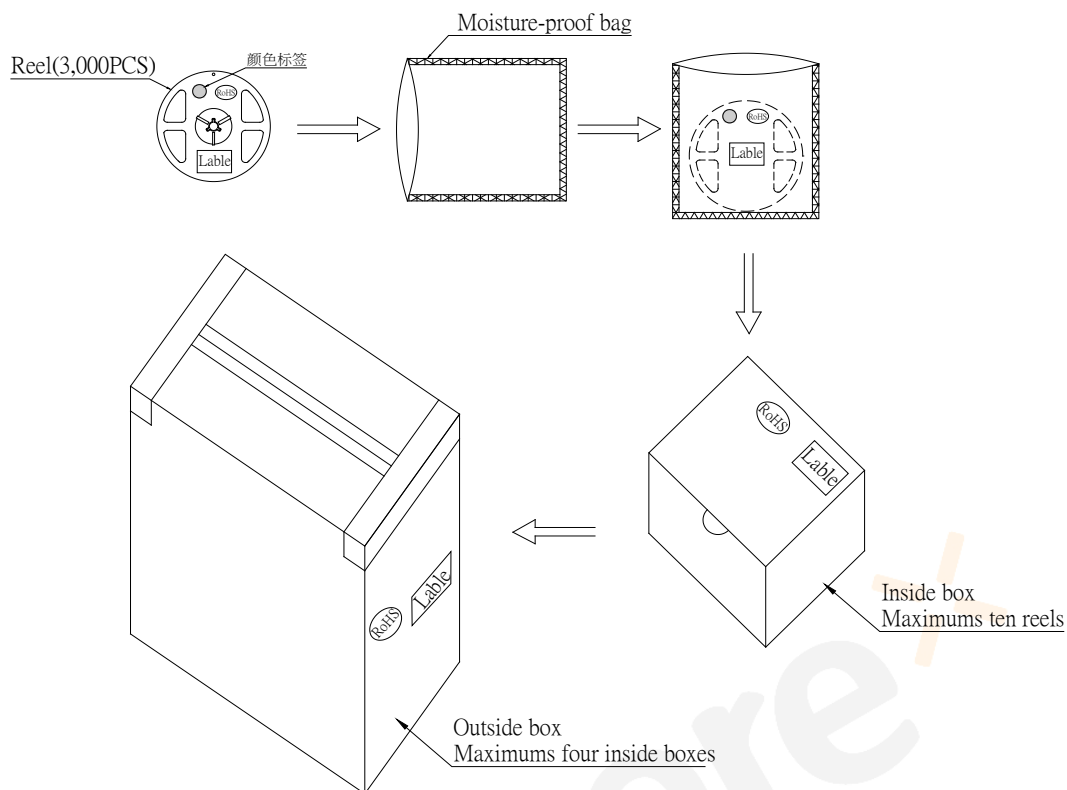


### Notes:

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. 3,000pcs/Reel.

## 1005 Series SMD Chip LED Lamps Packaging Specifications

- **Packaging specifications**



### Notes:

Reeled products (numbers of products are 3,000pcs) 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 30,000pcs) 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.