

# Specifications for Approval

Customer Part No.:

JOINHANDS Part No.: JH-CB55E12SEP001

Part Name: 1606 冰蓝光 LED

Spec Issue Date:2019-01-08

Revision No.: A0

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To Customer:

1. Accessory: Samples  Samples Data
2. Customer's Proposal : Agree Disagree

Reason :

Draw by :	Checked by :	Approved by :
李飞	卢伟昌	钟志鸿
Customer Approve		



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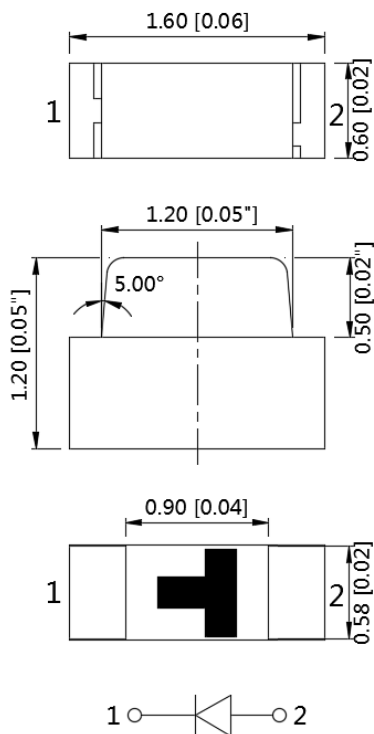
## Features

- 1.6mm × 0.6mm SMD LED, 1.2mm thickness
- Low power consumption
- Wide view angle
- Package: 4000pcs/reel
- RoHS Compliant

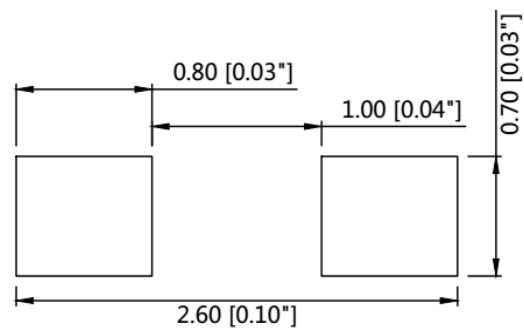
## Applications

- Ideal for back light and indicator
- Various colors and lens types available

## Package outlines



## Recommend Pad Layout



Part No.	Emitted color	Dice	Lens color
JH-CB55E12SEP001	White	InGaN/GaN	Yellow

## Notes:

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

## Absolute Maximum Ratings (Ta=25°C)

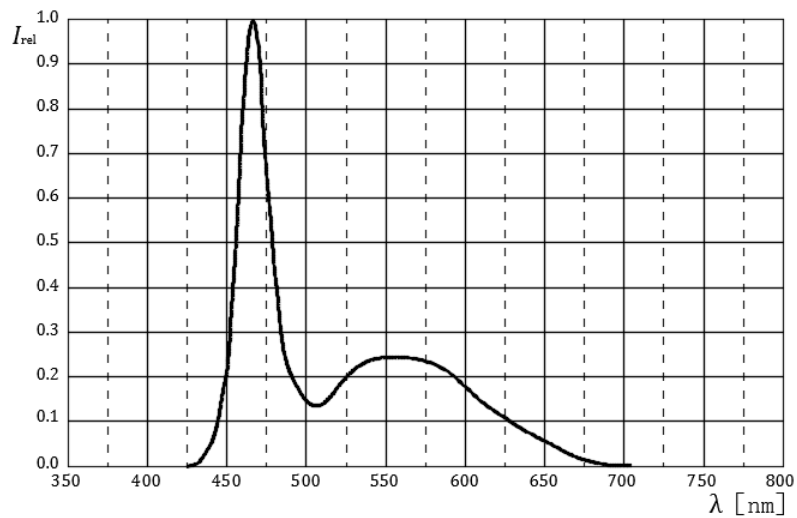
Parameter	Symbol	Value	Unit
Forward current	If	30	mA
Reverse voltage	Vr	5	V
Power dissipation	Pd	108	mW
Operating temperature	Top	-40 ~+85	°C
ESD(Human-body mode)	--	2	KV
Storage temperature	Tstg	-40 ~+85	°C
Peak pulsing current (1/8 duty f=1kHz)	Ifp	125	mA

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

Parameter	Test Condition	Symbol	Value			Unit
			Min	Typ	Max	
CIE Coordinates	If=20mA	X	0.12	--	0.18	--
		Y	0.185	--	0.305	
Forward voltage	If=20mA	Vf	2.8	--	3.6	V
Luminous intensity	If=20mA	Iv	200	300	450	mcd
Viewing angle at 50% Iv	If=10mA	2θ1/2	--	140	--	Deg
Reverse current	Vr=5V	Ir	--	--	10	μA

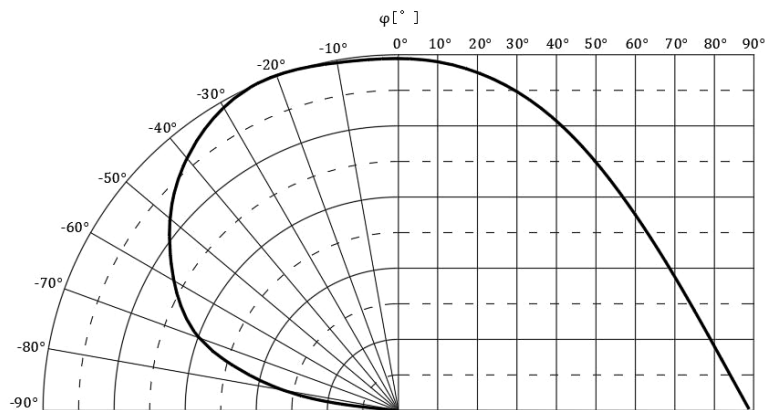
## Relative Spectral Emission

$I_F=5\text{mA}, T_a=25^\circ\text{C}$



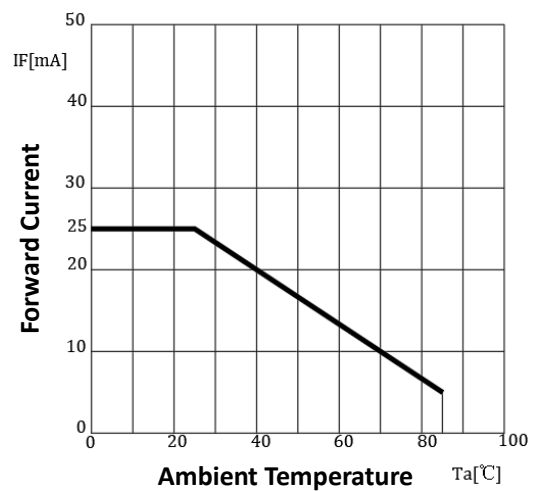
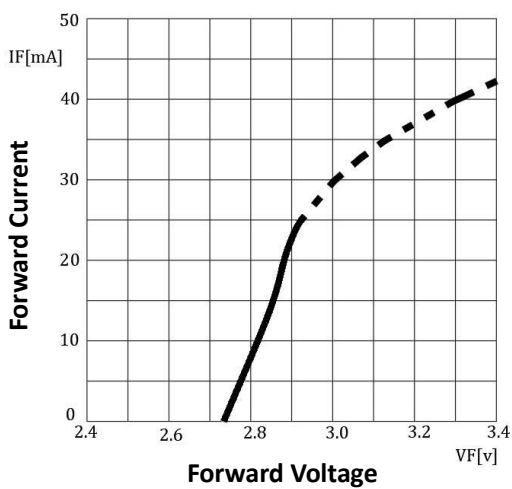
## Radiation Characteristi...

$I_F=10\text{mA}, T_a=25^\circ\text{C}$



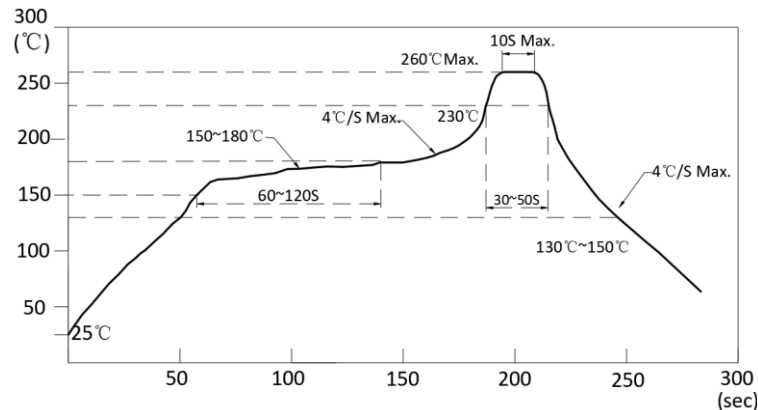
## Forward Current vs Forward Voltage Forward Current Derating Curve

$T_a=25^\circ\text{C}$



## Reflow Profile

### ■ Reflow Temp/Time



### Notes:

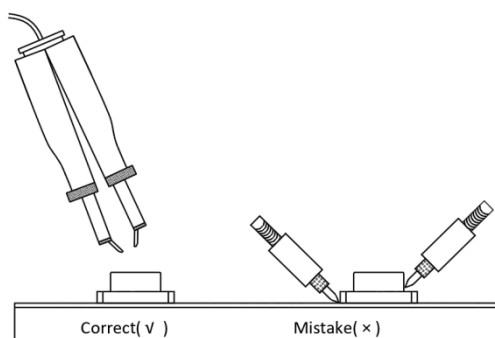
1. We recommend the reflow temperature 245°C(±5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

### ■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). Powerdissipation 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.

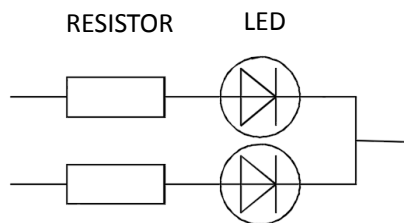


- Avoid rubbing or scraping the resin by any object, during high temperature, for example reflow solder etc.

## Handling precautions

### 1. Drive Method

A LED is a current-operated device. In order to ensure intensity uniformity on multiple LEDs connected in parallel in an application, it is recommended that a current limiting resistor be incorporated in the drive circuit, in series with each LED as shown in Circuit below.



### 2. Storage

2.1 Do not open moisture proof bag before the products are ready to use.

2.2 Before opening the package: The LEDs should be kept at 30°C or less and 60% RH or less.

2.3 After the package is opened, the products should be used within a week or they should be kept to store 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±3°C x(12~24hrs) and <5%RH, taped reel type

3.2 100±3°C x(45min~1hr), bulk type

3.3 130±3°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	
J	3	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
9	200	250	mcd
A	250	300	
B	300	350	
C	350	400	
D	400	450	

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

Rank	Chromaticity coordinates				
	X	Y	Z	u'	v'
BA	X	0.12	0.12	0.15	0.15
	Y	0.185	0.225	0.225	0.185
BD	X	0.15	0.15	0.18	0.18
	Y	0.185	0.225	0.225	0.185
BB	X	0.12	0.12	0.15	0.15
	Y	0.225	0.265	0.265	0.225
BE	X	0.15	0.15	0.18	0.18
	Y	0.225	0.265	0.265	0.225
BC	X	0.12	0.12	0.15	0.15
	Y	0.265	0.305	0.305	0.265
BF	X	0.15	0.15	0.18	0.18
	Y	0.265	0.305	0.305	0.265

## Group Name on Label ( Example DATA: KB BE 20)

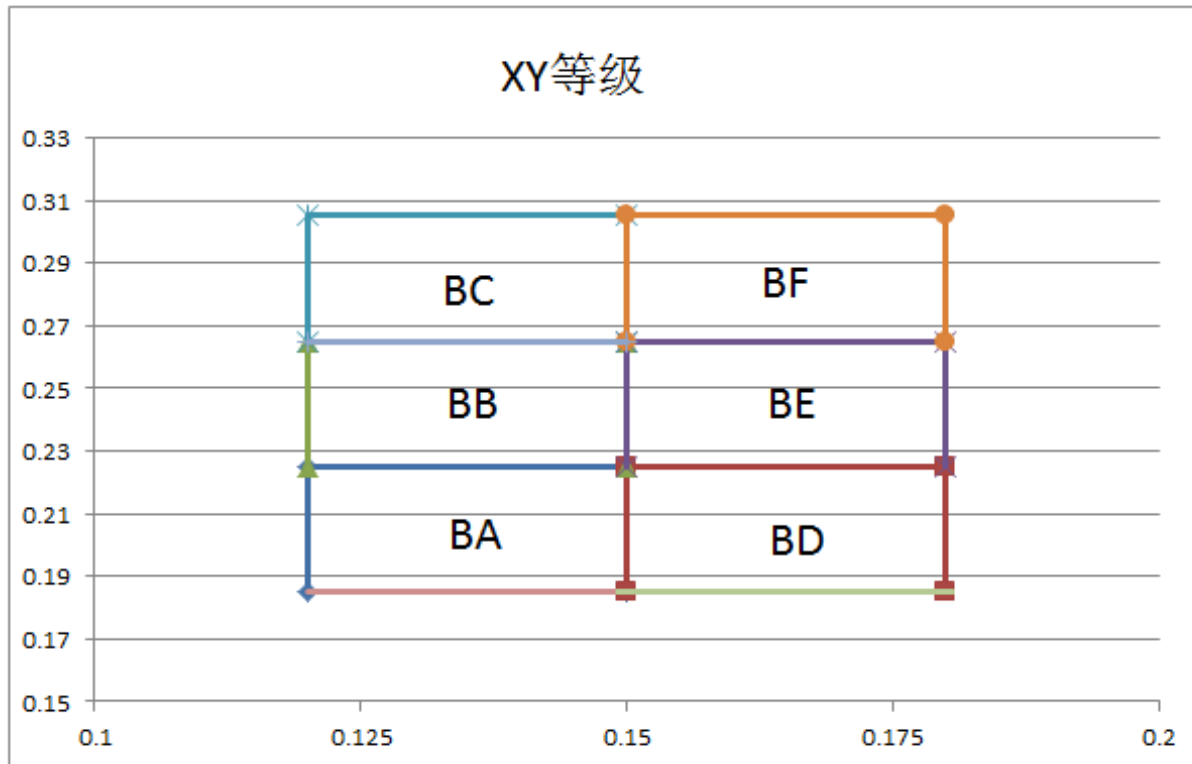
DATA: KB BE 20	Vf(V)	Iv (mcd)	CIE(X,Y)	Test Condition
K→B→BE →20	3.1~3.2	300~350	X(0.15~0.18),Y(0.225~0.265)	IF=20mA



Notes:

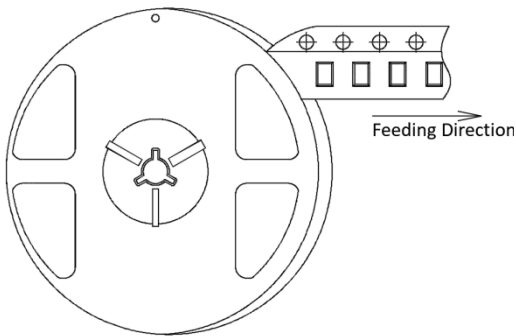
1. The tolerance of luminous intensity (Iv) is  $\pm 15\%$ .
2. The tolerance of CIE Coordinates(X,Y) is  $\pm 0.01$ .
3. This specification is preliminary.
4. This specification is a standard specification of our factory, can make in accordance with customer's special requirement.

XY chromaticity coordinate

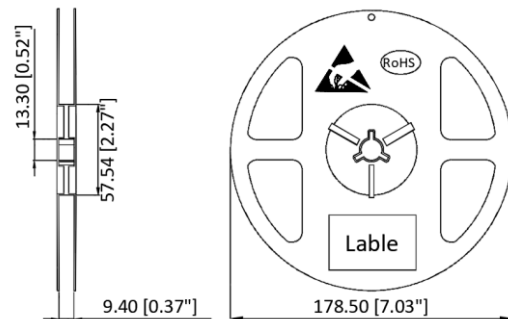


## 1606 Series SMD Chip LED Lamps Packaging Specifications

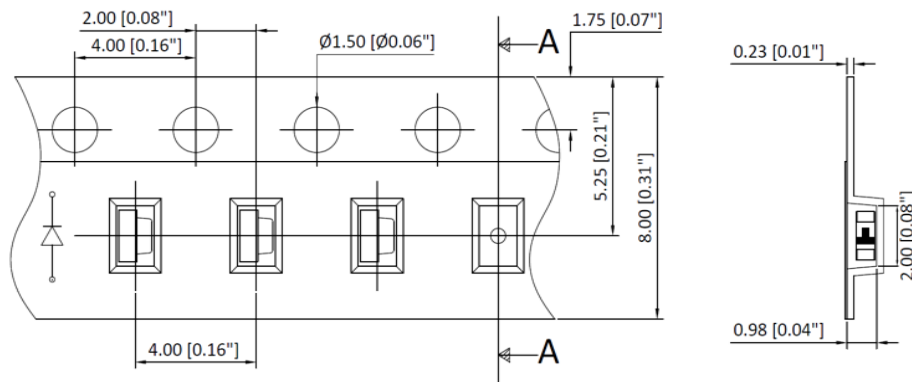
### ● Feeding Direction



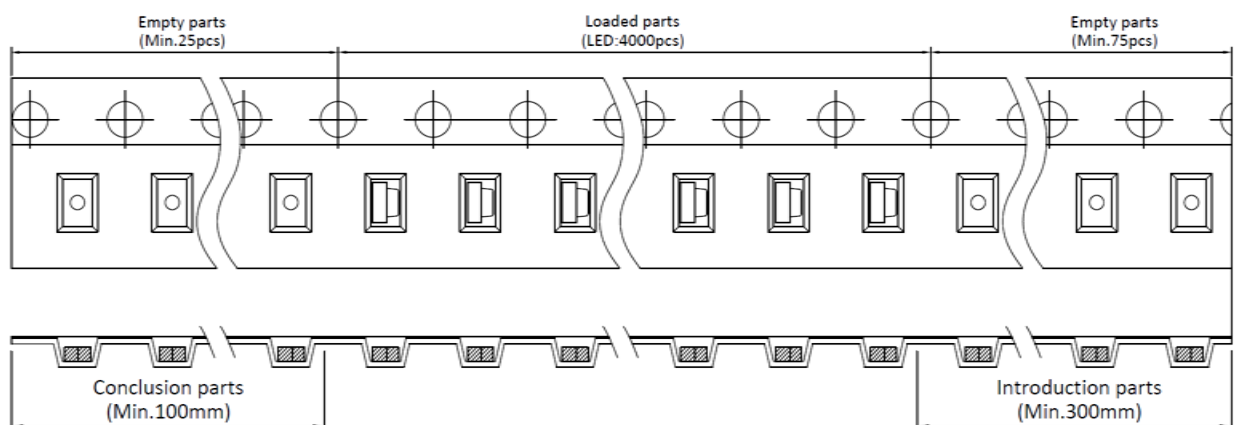
### ● Dimensions of Reel (Unit: mm)



### ● 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. 4,000pcs/Reel.

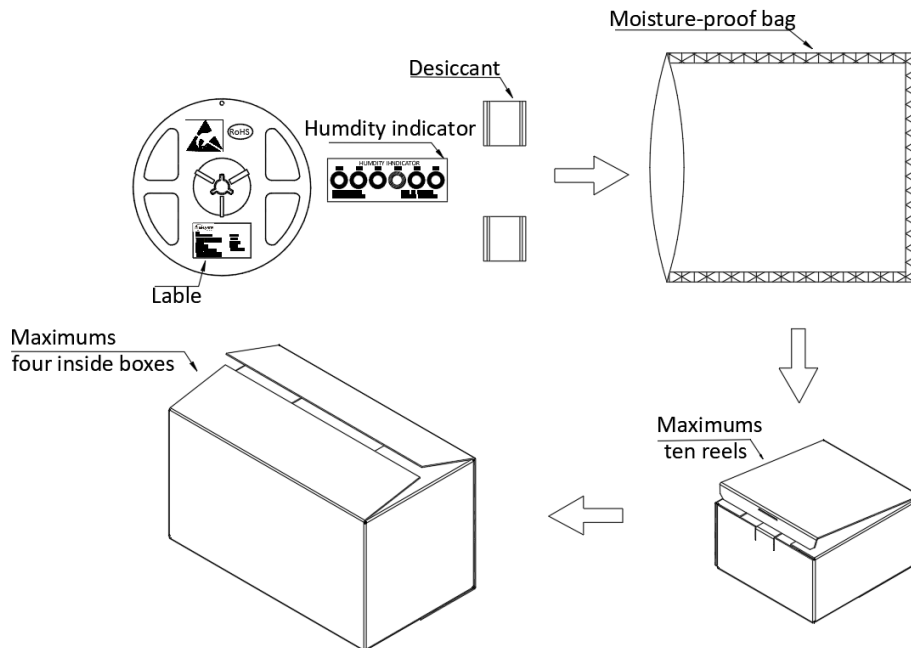
## 1606 Series SMD Chip LED Lamps Packaging Specifications

### ● Label Explanation



CPN:Customer's Product Number  
 P/N:Product Number  
 QTY:Packing Quantity  
 LOT NO:Lot Number  
 VF:Forward Voltage Rank  
 IV:Luminous Intensity Rank  
 CIE: Chromaticity coordinates Rank  
 BIN:BIN Code  
 DATE:Date Of Dispatch

### ● Transportation Packing



#### Notes:

Reeled products (numbers of products are 4,000pcs) packed in a seal off moisture-proof bag along with two desiccant one by one, ten moisture-proof bag of maximums packed in an inside box (about size: 240x 220x 120mm) and four inside boxes of maximums are put in the outside box (about size: 460mm x 246mm x 250mm) Together with buffer material, and it is packed. The number of the loading steps of outsidebox (cardboard box) has it to three steps.