SPECIFICATION
产品规格书

Part No.(品號): N0D03S62

◆Outline (L*W*H): 3.5*2.8*1.9mm

◆Specification: T60120A20C11000

APPROVED SIGNATURES 顧客確認

Table of Contents

1、Features

- § forward current: ≦30mA
- § Wide viewing angle: 120°
- § Operating Temperature: -40~80℃
- § Storage temperature:-40~100℃
- § RoHS and REACH-compliant
- § Max junction temperature: 110℃
- § Package: 2000pcs per reel
- § Qualified according to JEDEC moisturevity Level 2a
- § Chip material: AlGaInP/ InGaN
- § Reverse Voltage: 5V

2、Electrical-Optical Characteristics(Ta=25℃)

Parameter	Symbol		Value			Unit	Test condition
			Min.	Typ.	Max.		
Forward Voltage	Vf	R	1.7	1.9	2.4	V	If=20mA
		G	2.8	3.2	3.8	V	If=20mA
Luminous intensity	Iv	R	210	450	-	mcd	If=20mA
		G	600	900	-	mcd	If=20mA
Dominant Wavelength	λd	R	620	-	635	(nm)	If=20mA
		G	520	-	535	(nm)	If=20mA
Reverse Current	Ir		-	-	10	μA	Vr=5V
Viewing angle	2θ1/2		-	120	-	deg	If=20mA

1. Forward Voltage (V_F) ±0.1V, Luminous Intensity (I_V) ±10%, Dominant Wavelength(λd) ±1.0nm
2. IS standard testing

3、Range of bins

Red		
Bin Code	Min.(V)	Max.(V)
C	1.7	1.9
D	1.9	2.1
E	2.1	2.2
F	2.2	2.4

Green		
Bin Code	Min.(V)	Max.(V)
I	2.8	3.0
J	3.0	3.2
K	3.2	3.4
L	3.4	3.6
M	3.6	3.8

Red		
Bin Code	Min.(mcd)	Max.(mcd)
9	210	270
10	270	350
11	350	460
12	460	600
13	600	780

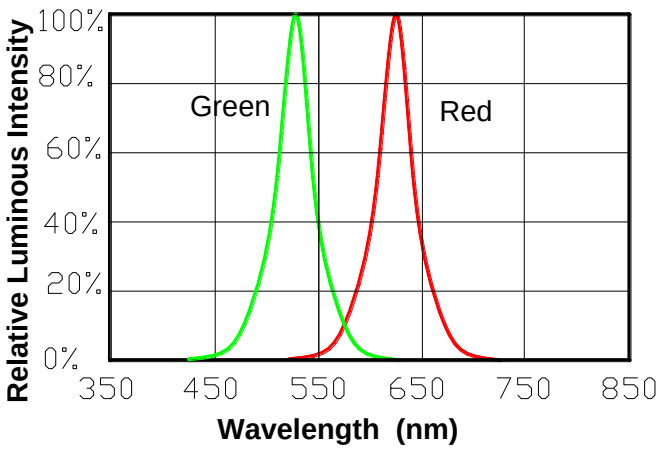
Green		
Bin Code	Min.(mcd)	Max.(mcd)
13	600	780
14	780	1000
15	1000	1300
16	1300	1700
17	1700	2200

Red		
Bin Code	Min.(nm)	Max.(nm)
C	620	625
D	625	630
E	630	635

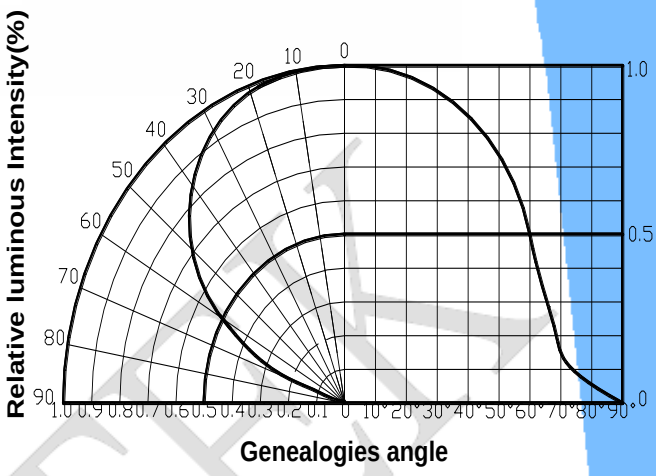
Green		
Bin Code	Min.(nm)	Max.(nm)
F	520	525
G	525	530
H	530	535

4、Optical Characteristics

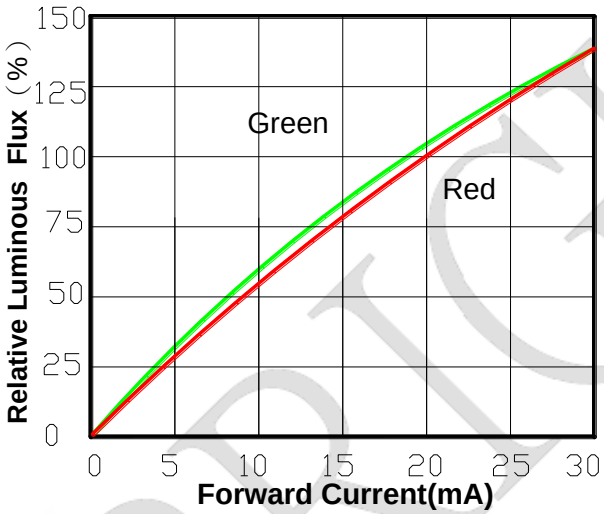
Relative Spectral Distribution



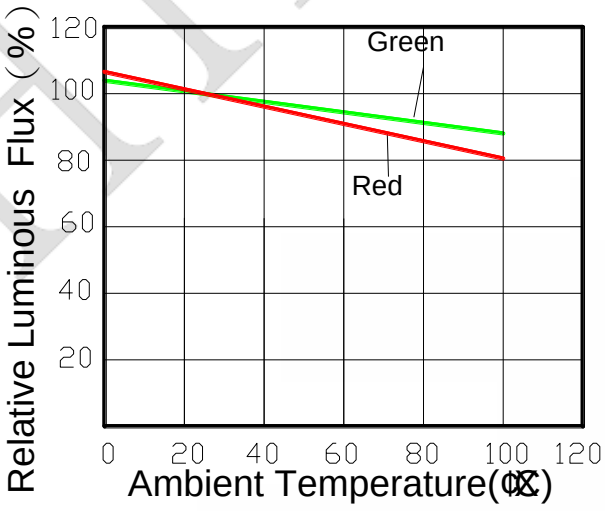
Typical Spatial Distribution



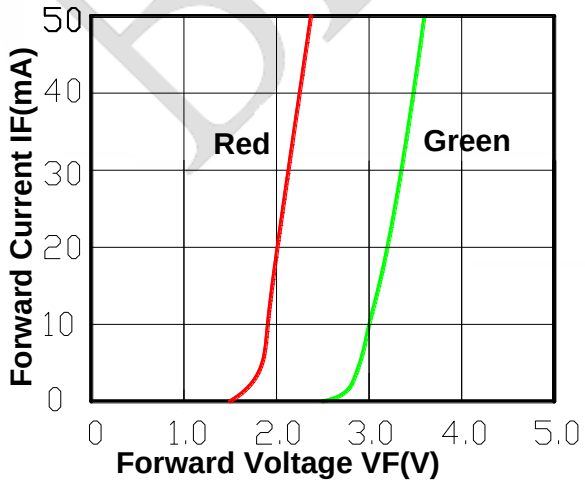
Relative Luminous Flux .Current



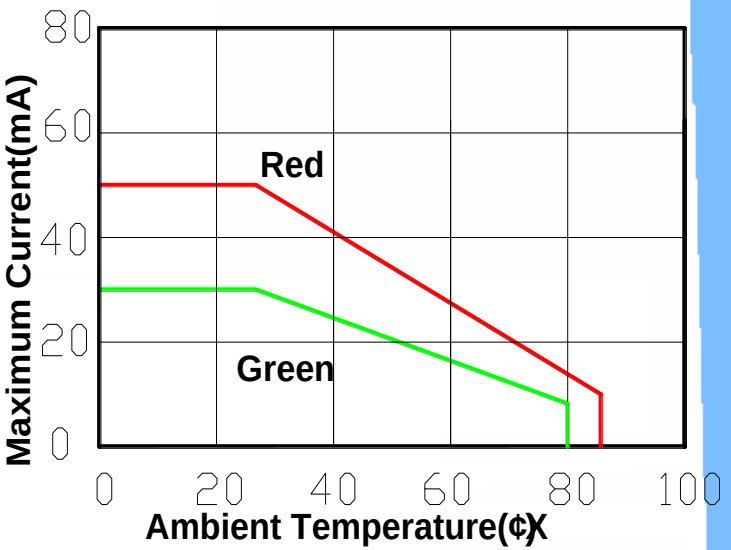
Relative Luminous Flux .Ambient Temperature



Electrical Characteristics

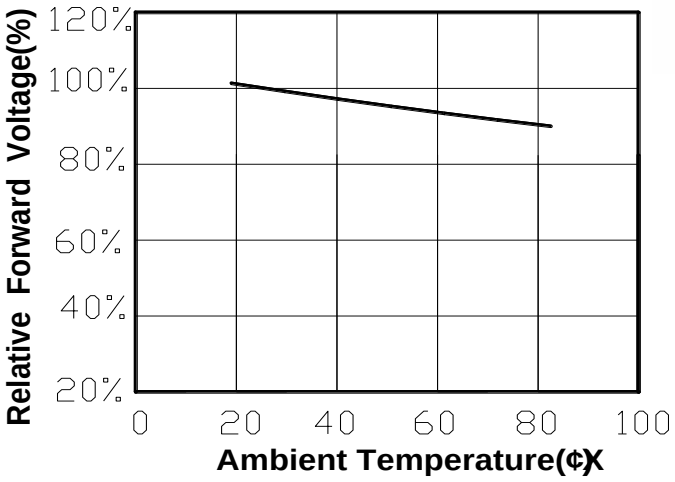


Thermal Design

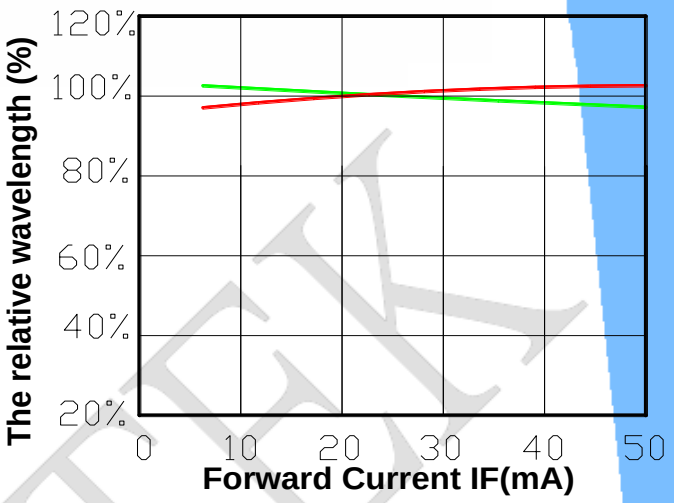


5、Optical Characteristics

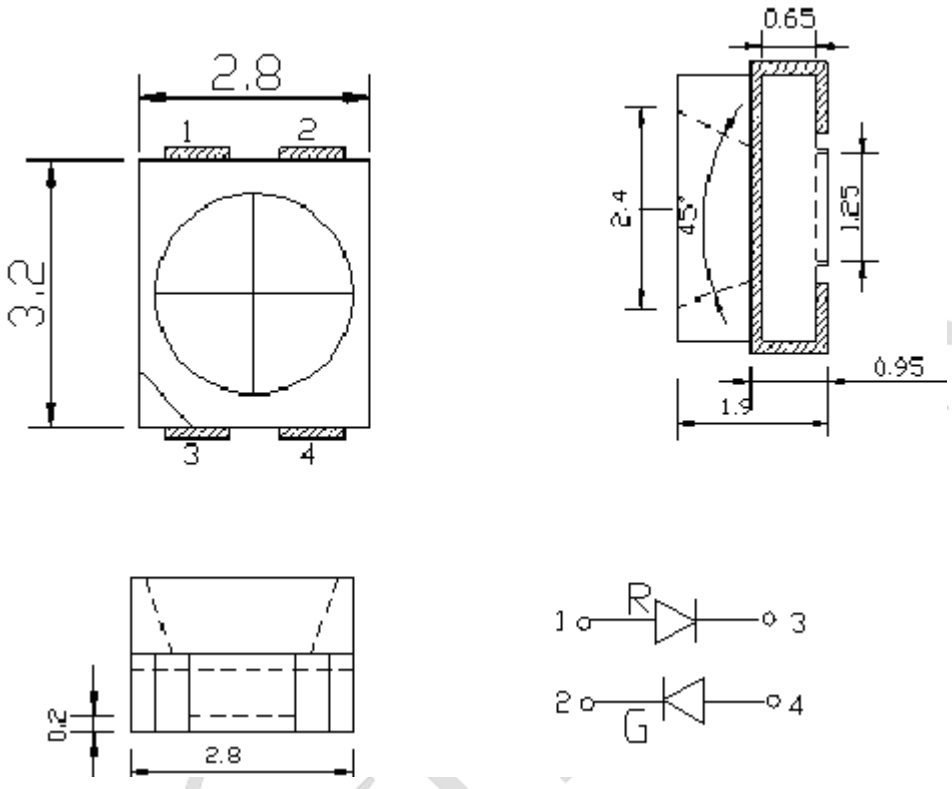
Forward Voltage Temperature



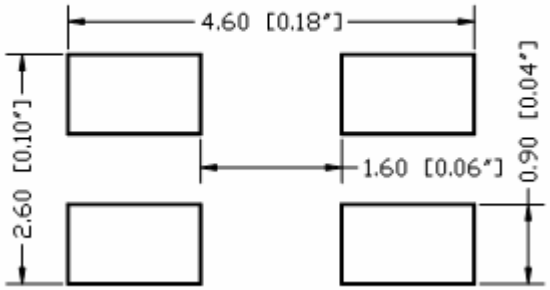
Relative Wavelength and current



6、Outline Dimensions



RECOMMEND PAD LAY OUT



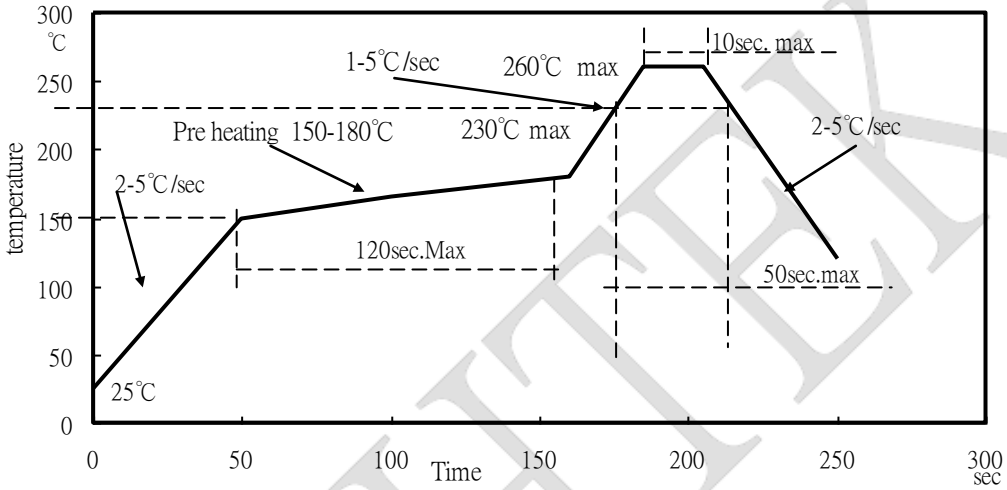
§ All dimensions are in millimeters.(inch)

§ Tolerance is ±0.1(0.004)mm unless other specified

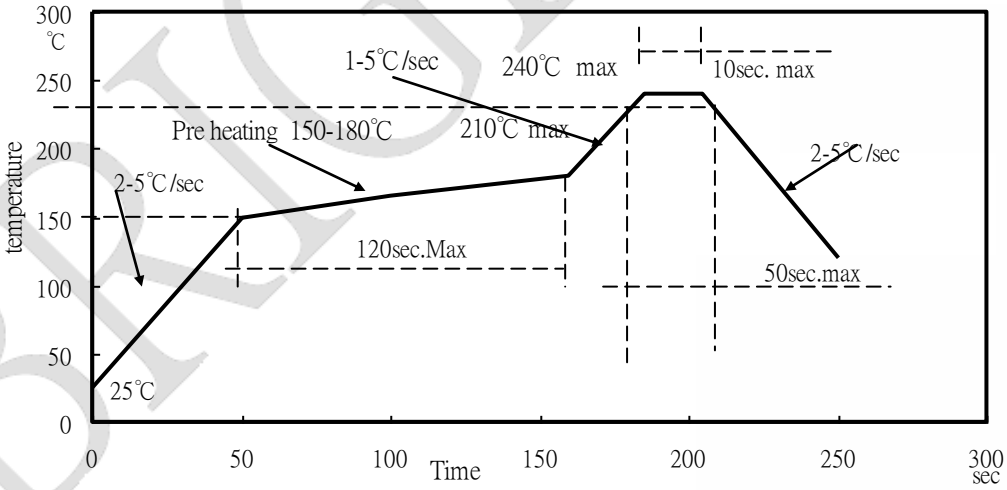
§ Specifications are subject to change without notice.

7、Reflow Profile

1. IR reflow soldering Profile
Lead Free solder



2. IR reflow soldering Profile
Lead solder

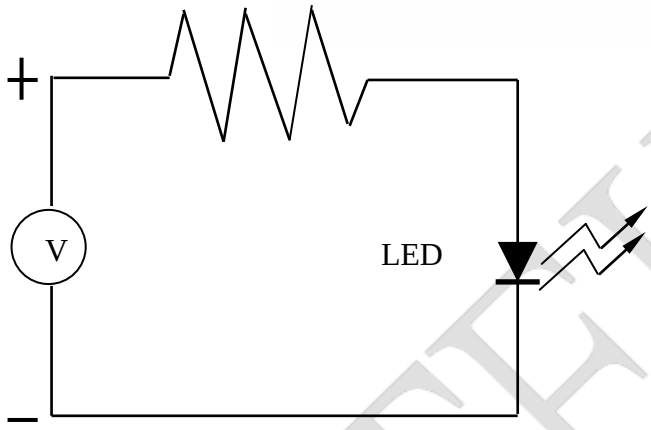


Notes:

1. We recommend the reflow temperature 240℃(±5℃).the maximum soldering temperature should be limited to 260℃.
2. Don't cause stress to the silicone resin while it is exposed to high temperature.
3. Number of reflow process shall be less than 3 times.

8、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℃~30℃(41℉~86℉)

2.2 Shelf life in sealed bag: 12 month at ＜5℃~30℃and ＜60% R.H. after the package is Opened, the products should be used within four week 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 24hrs. The Conditions are as followings:

3.1 70±3℃ x 24hrs and ＜5%RH,for reel

3.2 100±3℃ x 2hrs, for single LED

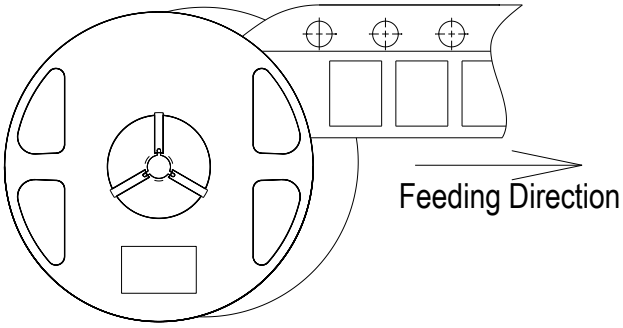
3.3 130±3℃(15~30min), for single LED

It shall be normal to see slight color fading of carrier(light yellow) after baking in process

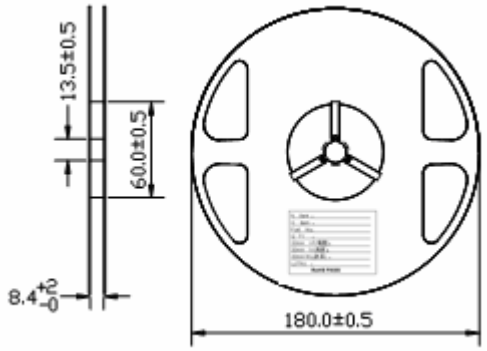
9、Packing

3528 Single-Color High Performance SMD Top LEDs Packaging Specifications

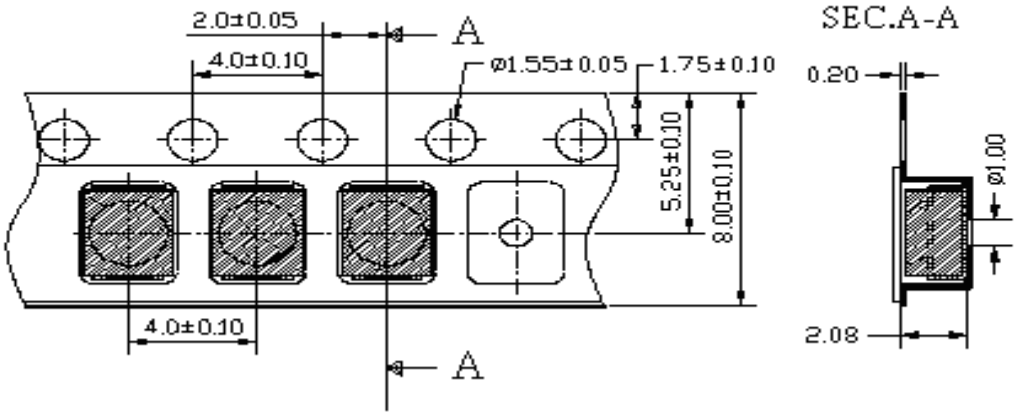
- **Feeding Direction**



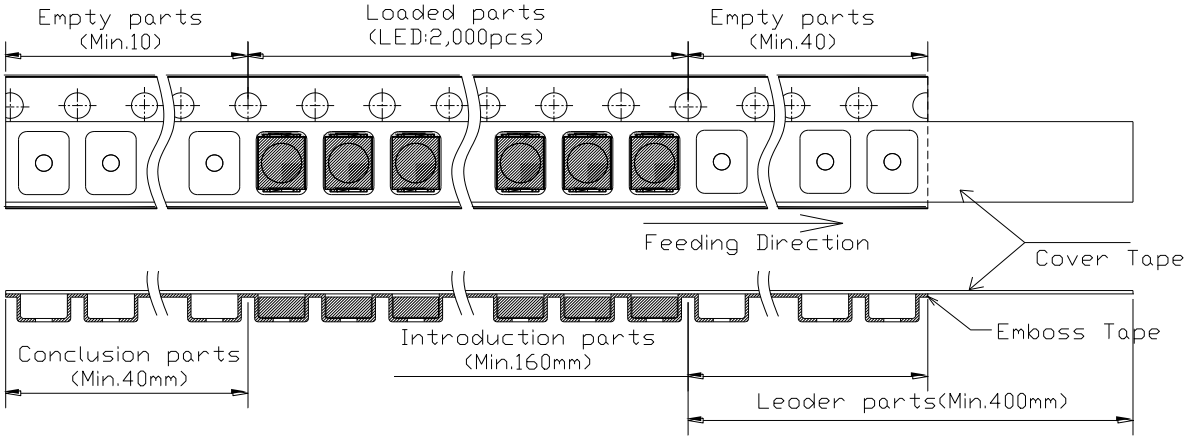
- **Dimensions of Reel (Unit: mm)**



- **Dimensions of Tape (Unit: mm)**



- **Arrangement of Tape**



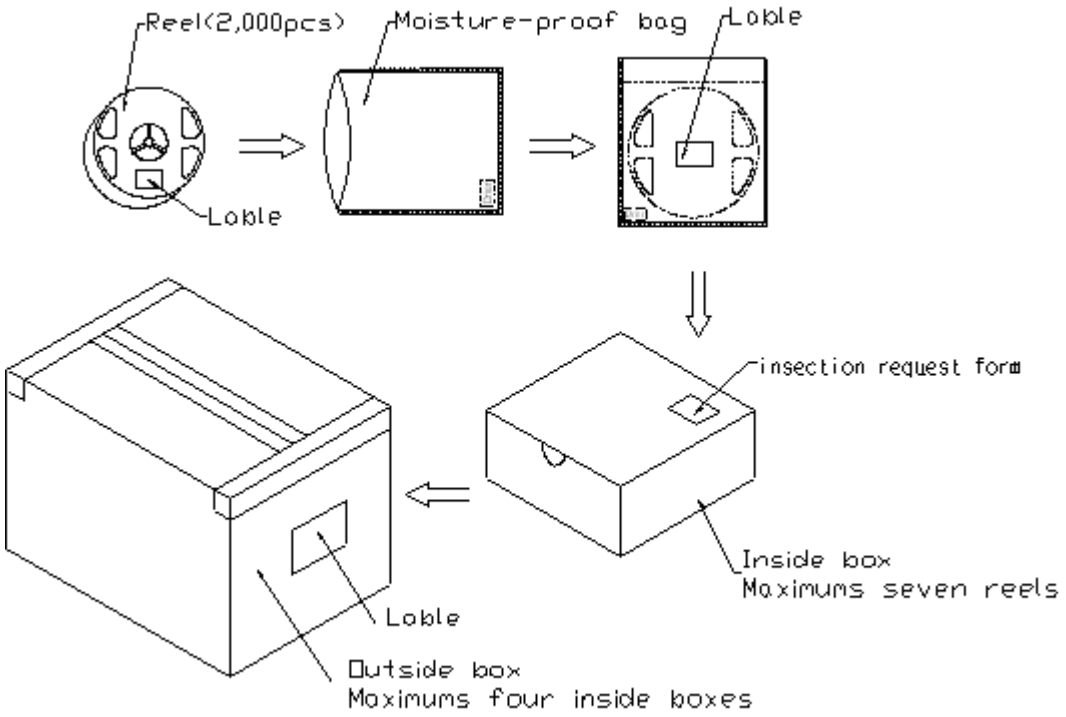
Notes:

1. Empty component pockets are sealed with top cover tape;
2. The max loss number of SMD is 2pcs;
3. The cathode is oriented towards the tape sprocket hole in accordance with ANSI/EIA RS-481 specifications;
4. 2,000pcs per reel

9、Packing

3528 Single-Color High Performance SMD Top LEDs Packaging Specifications

- **Packaging specifications**



Notes:

Reeled products (The most numbers of products are 2,000pcs) packed in a seal off moisture-proof bag along with a desiccant one by one, Seven moisture-proof bag of maximums (total maximum number of products are 14,000pcs) packed in an inside box (size: about 260mm x about 230mm x about 100mm) and four inside boxes of maximums are put in the outside box (size: about 480mm x about 275mm x about 215mm) 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 in section request form on the cardboard box.) .

10、Precautions

1、Abnormal situation caused by improper setting of collet

To choose the right collet is the key issue in improving the product's quality. LED is different from other electronic components, which is not only about electrical output but also for optical output. This characteristic made LED more fragile in the process of SMT. If the collet's lowering down height is not well set, it will bring damage to the gold wire at the time of collet's picking up and loading which will cause the LED fail to light up, light up now and then or other quality problems

2、How to choose the collet

During SMT, please choose the collet that has larger outer diameter than the lighting area of lens, in case that improper position of collet will damage the gold wire inside the LED. Different collets fit for different products, please refer to the following pictures cross out.

Outer diameter of collet should be larger than the lighting area

Picture 1（√）　　Picture 2（×）

3、Other points for attention

A、No pressure should be exerted to the epoxy shell of the SMD under high temperature.

B、Do not scratch or wipe the lens since the lens and gold wire inside are rather fragile and cross out easy to break.

C、LED should be used as soon as possible when being taken out of the original package, and should be stored in anti-moisture and anti-ESD package.

4、This usage and handling instruction is only for your reference.

11、Test items and results of reliability

Type	Test Item	Test Standard	Test Conditions	Note	Number of Damaged
Environmental Sequence	Temperature Cycle	JEITA ED-4701 300 303	-40℃30min ↑↓1min 100℃30min	100 cycle	0/22
	High Temperature Storage	JEITA ED-4701 200 201	T_a=100℃	1000 hrs	0/22
	Humidity Heat Storage	JEITA ED-4701 100 103	T_a=85℃ RH=85%	1000 hrs	0/22
	Low Temperature Storage	JEITA ED-4701 200 202	T_a=-40℃	1000 hrs	0/22
Operation Sequence	Life Test	Tested with Brightek standard	T_a=25℃ I_F=20mA	1000 hrs	0/22
	High Humidity Heat Life Test	Tested with Brightek standard	T_a=85℃RH=85% I_F=15mA	500 hrs	0/22
	Low Temperature Life Test	Tested with Brightek standard	T_a=-20℃ I_F=20mA	1000 hrs	0/22

12、Judgment criteria of failure for the reliability

Measuring items	Symbol	Measuring Conditions	Judgment criteria for failure
Forward voltage	Vf(V)	IF=20mA	Over V_{f0}×1.2
Reverse current	I_R(uA)	Vr=5V	Over 20 uA

Notes: V_{f0} is initial state value

Revision History

Date	Revision History	Text		Writer	
				Drawn	Approved
2012/04/04	新增	-	1.0	Huan Huan Yi	
2012/07/01	升級版本	1.0	1.1	WenZhanGao	
2013/07/11	亮度提升	1.1	1.2	HH.YI	
2013/12/24	版本更改	1.2	1.3	Zixin.li	
2015/08/06	防潮等級修改為 3	1.3	1.4	Yang.gan	