Specifications for Approval

Customer Part No.:

Inhere Part No.: S2012CHUGT-003

Part Name: 2012 绿光 LED

Spec Issue Date: 2018-07-12

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	Checked by: Tom	Approved by: Wangxiaojun
Date: 2018-07-12	Date: 2018-07-12	Date: 2018-07-12

Customer Opinion

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

____

inhere light for your mind
银河光电

东莞市银河光电有限公司
DongGuan Inhere Opto CO.,LTD.
地址:东莞市莞城科技园 D 幢
ADD:Guancheng Science & Technology Park, DongGuan
TEL: 0769-23320868 FAX: 0769-23320878
E-mail: bill@inhereopto.com
Http://www.inhereopto.com

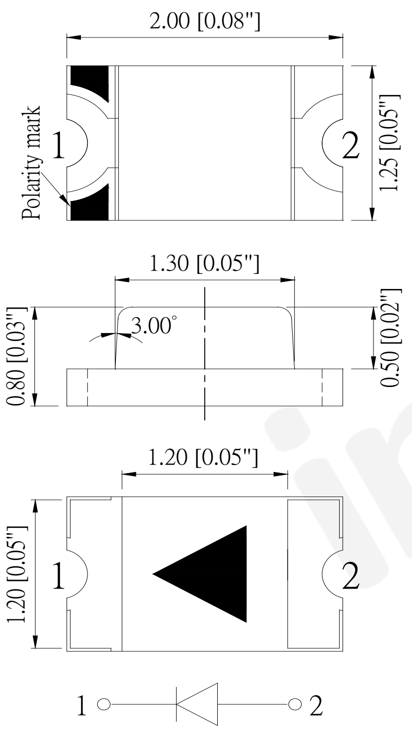
Features

- 2.0mm x 1.25mm SMD LED, 0.8mm thickness
- Low power consumption
- Wide view angle
- Package: 3000pcs/reel
- RoHS Compliant

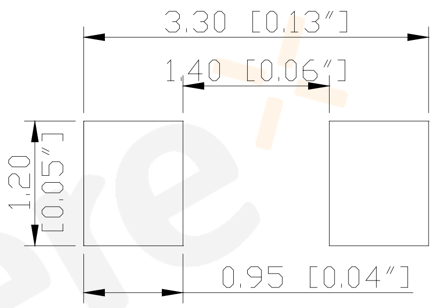
Applications

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

Package outlines



Recommend Pad Layout



ATTENTION

OBSERVE PRECAUTIONS
FOR HANDLING

ELECTROSTATIC
SENSITIVE DEVICES

Part No.	Emitted color	Dice	Lens color
S2012CHUGT-003	Green	InGaN/GaN	Water transparent

Notes:

All dimensions are in millimeters (inches);

Tolerances are ±0.1mm (0.004inch) unless otherwise noted.

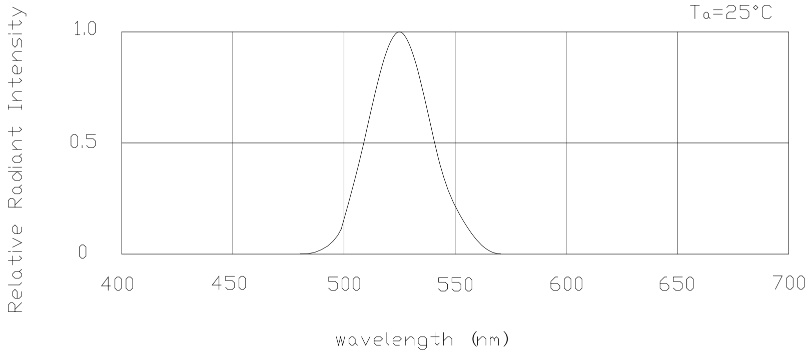
Absolute Maximum Ratings (Ta=25℃)

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

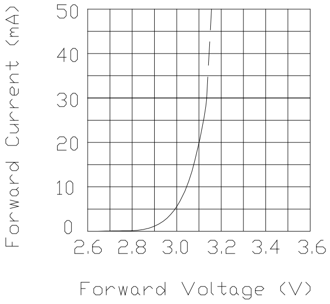
Electro-Optical Characteristics (Ta=25℃)

Parameter	Test Condition	Symbol	Value			Unit
			Min	Typ	Max	
Wavelength at peak emission	If=20mA	λ p	--	520	--	nm
Spectral half bandwidth	If=20mA	△ λ	--	35	--	nm
Dominant wavelength	If=20mA	λ d	520	--	530	nm
Forward voltage	If=20mA	Vf	2.8	--	3.6	V
Luminous intensity	If=20mA	Iv	320	500	--	mcd
Viewing angle at 50% Iv	If=10mA	2 θ 1/2	--	120	--	Deg
Reverse current	Vr=5V	Ir	--	--	10	μA

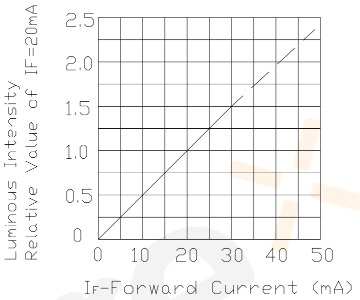
Optical Characteristic Curves



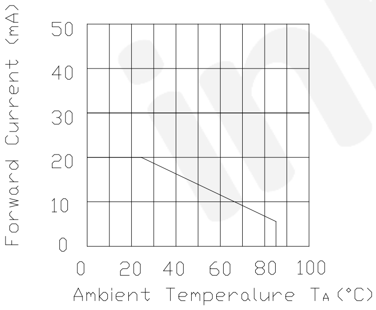
RELATIVE INTENSITY Vs.WAVELENGTH



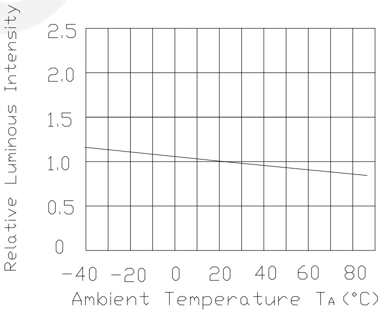
FORWARD CURRENT Vs.
FORWARD VOLTAGE



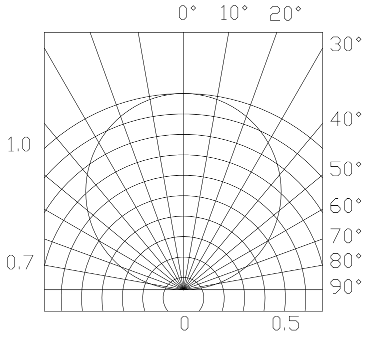
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURE



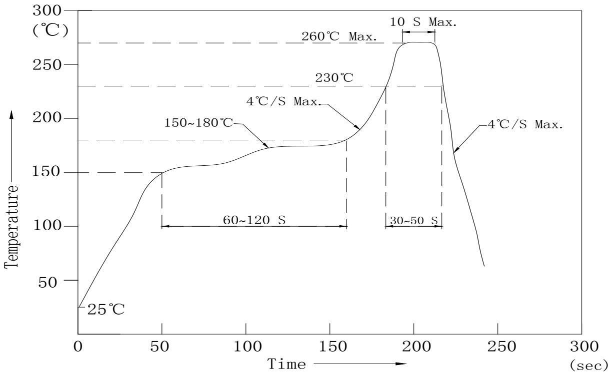
LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE



SPATIAL DISTRIBUTION

Reflow Profile

- ■ Reflow Temp/Time



Notes:

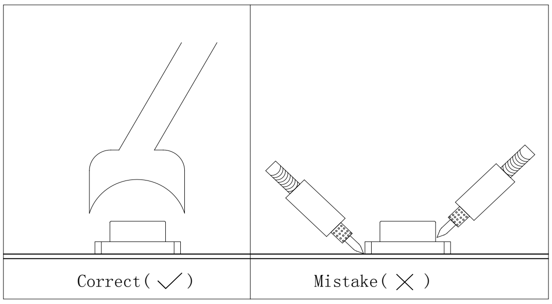
1. We recommend the reflow temperature 245℃ (±5℃).the maximum soldering temperature should be limited to 260℃.
2. Don’t cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

■Soldering iron

Basic spec is ≤ 5sec when 320℃ (±20℃). If temperature is higher, time should be shorter (+10℃→ -1sec). Power dissipation of iron should be smaller than 20W, and temperatures should be controllable .Surface temperature of the device should be under 350℃.

■Rework

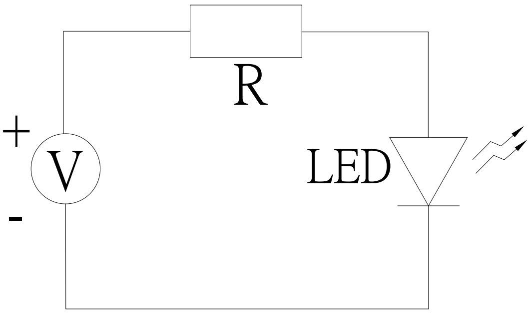
1. Customer must finish rework within 5 sec under 340℃.
2. The head of iron cannot touch copper foil
3. Twin-head type is preferred.



- ■ 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℃~30℃

2.2 Shelf life in sealed bag: 12 month at ＜5℃~30℃ and ＜30% R.H. after the package is opened, the products should be used within a 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 72hrs. The Conditions are as followings:

3.1 60±3℃ x(12~24hrs) and ＜5%RH, taped reel type

3.2 100±3℃ x 45min~1hr), bulk type

3.3 130±3℃ 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
O	320	400	mcd
P	400	500	
Q	500	630	
R	630	800	
S	800	--	

Dominant wavelength Rank Combination (IF=20mA)

Rank	Min.	Max.	Unit
Gk	520	522	nm
Gl	522	524	
Gm	524	526	
Gn	526	528	
Go	528	530	

Name on Label (Example DATA: K P Gk 20)

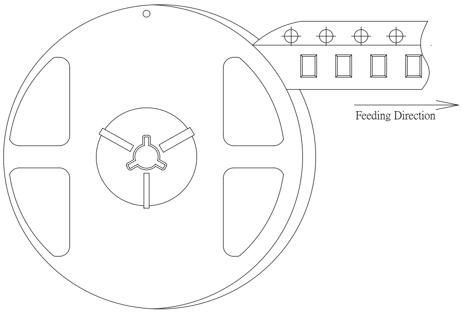
DATA: K P Gk 20	Vf(V)	Iv (mcd)	λd (nm)	Test Condition
K→P→Gk→20	3.1~3.2	400~500	520~522	IF=20mA

Notes:

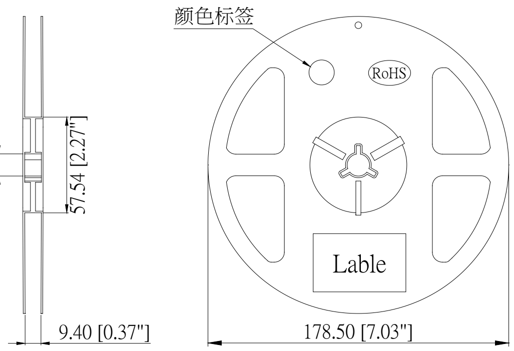
1. The tolerance of luminous intensity (Iv)is ±15％.
2. The tolerance of dominant wavelength is±1nm.
3. This specification is preliminary.
4. This specification is a standard specification of our factory, can make in accordance with customer's special requirement.

2012 Series SMD Chip LED Lamps Packaging Specifications

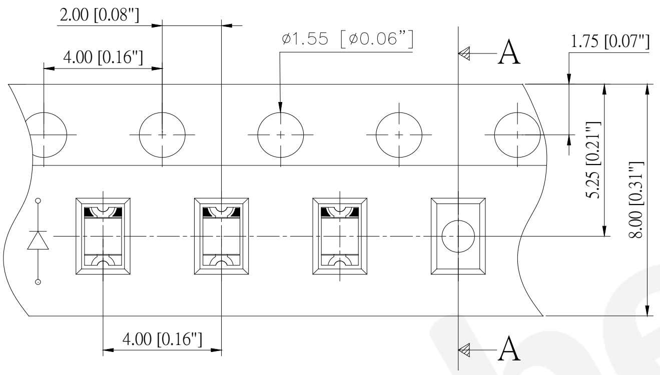
- **Feeding Direction**

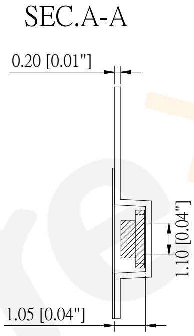


- **Dimensions of Reel (Unit: mm)**

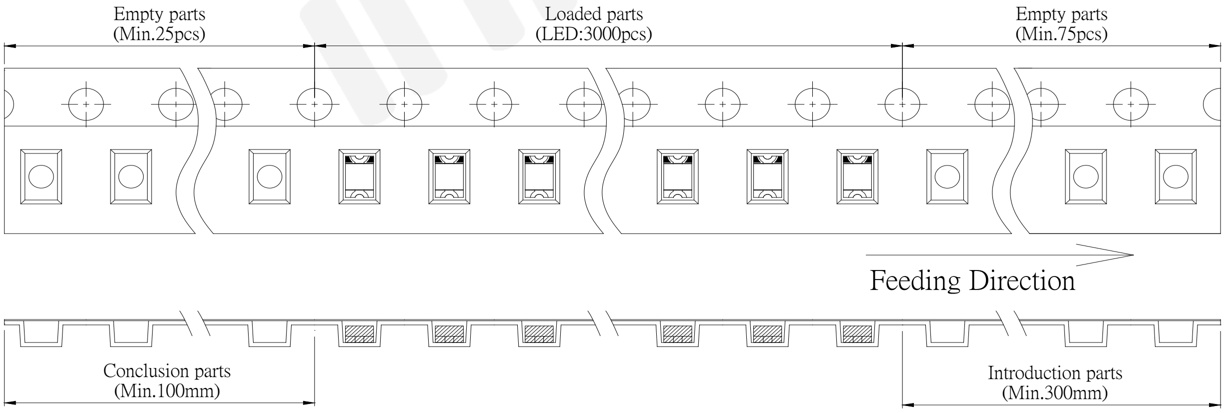


- **Dimensions of Tape (Unit: mm)**





- **Arrangement of Tape**

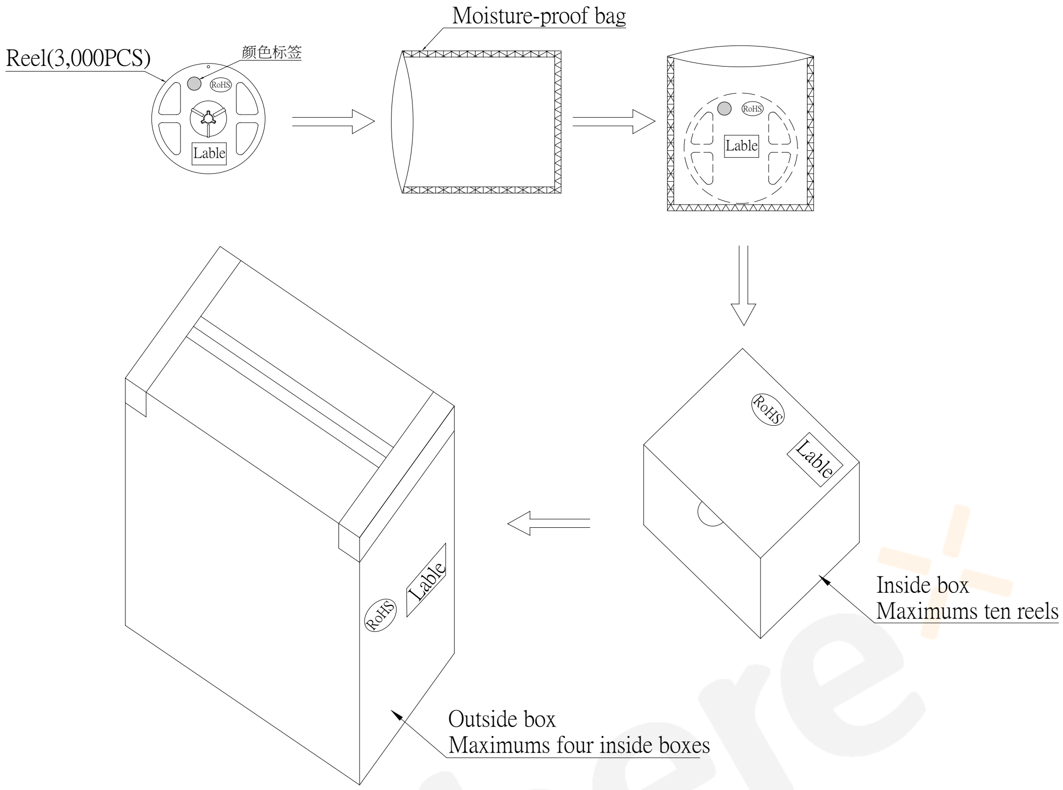


Notes:

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.

2012 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.