

Specifications for Approval

Customer Part No.:

Inhere Part No.: R3528LDUBT-001

Part Name: 3528 蓝光 LED

Spec Issue Date: 2018-07-24

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: 2018-07-24

Checked by: Tom

Date: 2018-07-24

Approved by: Wangxiaojun

Date: 2018-07-24

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

3.5mm x 2.8mm SMD LED, 3.53mm thickness

Low power consumption

Wide view angle

Package: 2000pcs/reel

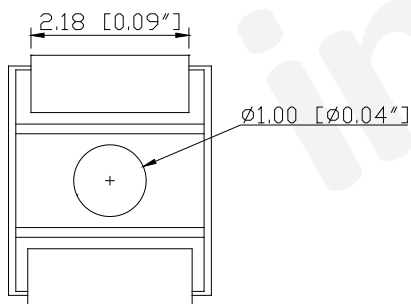
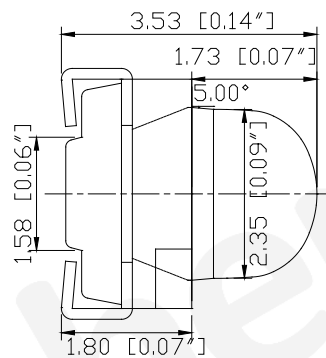
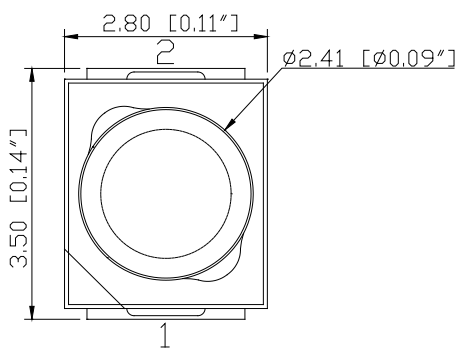
RoHS Compliant

Applications

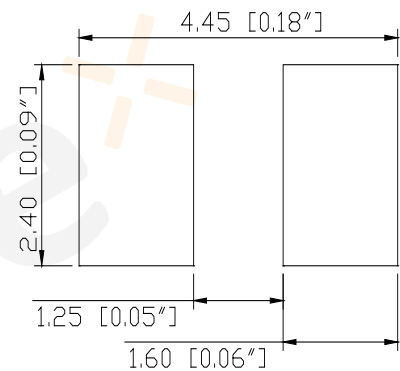
Ideal for back light and indicator

Various colors and lens types available

Package outlines



Recommend Pad Layout



Part No.	Emitted color	Dice	Resin	Lens color
R3528LDUBT-001	Blue	InGaN/GaN	Epoxy	Water transparent

Notes:

1. All dimensions are in millimeters (inches);
2. Tolerances are $\pm 0.2\text{mm}$ (0.008inch) unless otherwise noted.

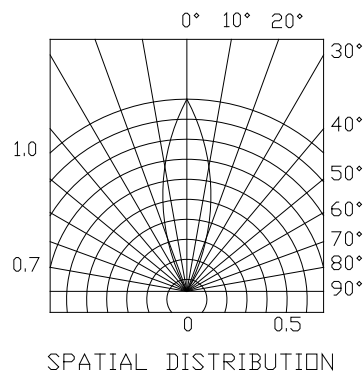
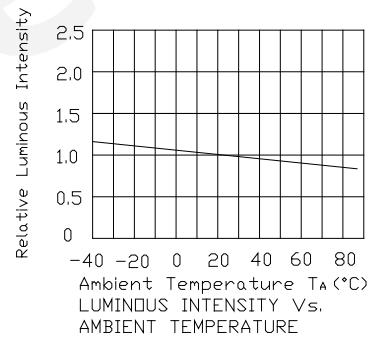
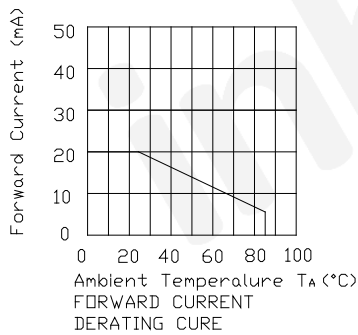
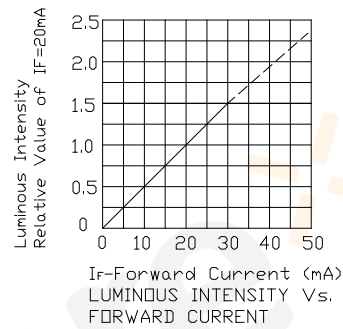
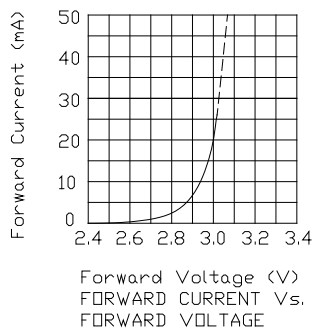
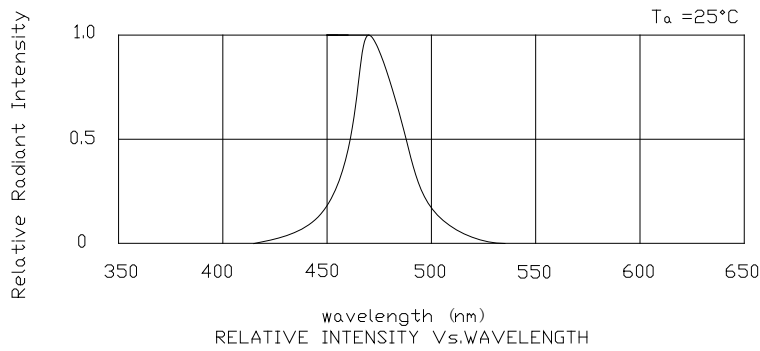
Absolute Maximum Ratings (TA=25 °C)

Parameter	Symbol	Value	Unit
Forward current	I _f	30	mA
Reverse voltage	V _r	5	V
Power dissipation	P _d	108	mW
Operating temperature	T _{op}	-40 ~+80	°C
Storage temperature	T _{stg}	-40 ~+85	°C
Peak pulsing current (1/8 duty f=1kHz)	I _{fp}	125	mA

Electro-Optical Characteristics (TA=25 °C)

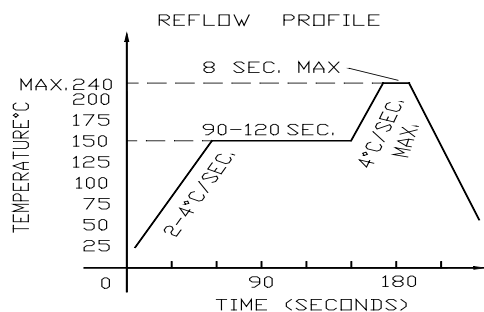
Parameter	Test Condition	Symbol	Value			Unit
			Min	Typ	Max	
Wavelength at peak emission	I _f =20mA	λ_p	--	464	--	nm
Spectral half bandwidth	I _f =20mA	$\Delta \lambda$	--	27	--	nm
Dominant wavelength	I _f =20mA	λ_d	464	--	474	nm
Forward voltage	I _f =20mA	V _f	2.8	--	3.6	V
Luminous intensity	I _f =20mA	I _v	800	1300	--	mcd
Viewing angle at 50% I _v	I _f =10mA	2 θ 1/2	--	25	--	Deg
Reverse current	V _r =5V	I _r	--	--	10	μ A

Optical characteristic curves



Reflow Profile

■ Reflow Temp/Time



Notes:

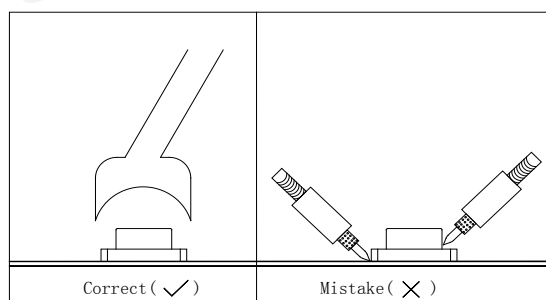
1. We recommend the reflow temperature 240°C (±5°C).the maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

■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). 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

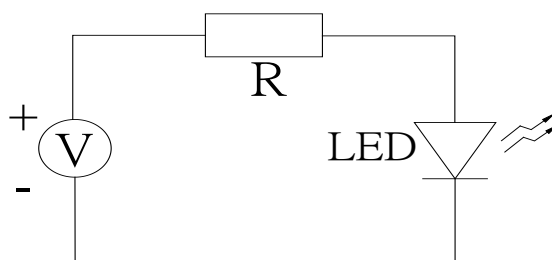
1. Customer must finish rework within 5 sec under 340°C.
2. The head of iron cannot touch copper foil
3. Twin-head type is preferred.



- 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. Shelf life in sealed bag: 12 month at 5°C~30°C and <60% R.H;

3. After the package is opened:

3.1. It is recommended to baking before the first use:

Baking condition:

- a. 60±3°C x (36~48hrs) and <5%RH, taped reel type;
- b. 110±3°C x (8~16hr), bulk type;

3.2 The products should be used within a week:

- a. It is recommended to baking before soldering when the pack is unsealed after 72hrs;
- b. Baking condition as 3.1 baking condition.

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	
O	3.5	3.6	

Luminous Intensity Rank Combination (IF=20mA)

Rank	Min.	Max.	Unit
S	800	1000	mcd
T	1000	1250	
U	1250	1600	
V	1600	2000	
W	2000	--	

Dominant wavelength Rank Combination (IF=20mA)

Rank	Min.	Max.	Unit
Bh	464	466	nm
Bi	466	468	
Bj	468	470	
Bk	470	472	
Bl	472	474	

Group Name on Label (Example DATA: M U Bi 20)

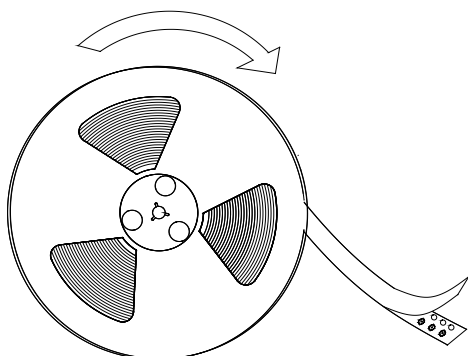
DATA: M U Bi 20	Vf(V)	Iv (mcd)	λ_d (nm)	Test Condition
M→U→Bi→20	3.3~3.4	1250~1600	466~468	IF=20mA

Notes:

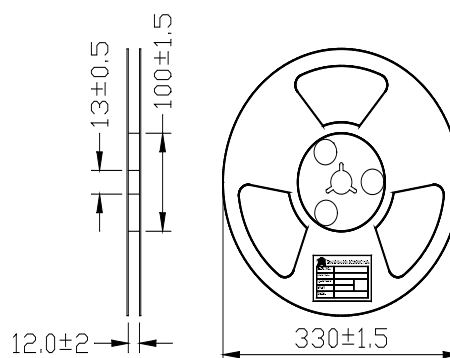
- 1.The tolerance of luminous intensity (Iv)is $\pm 15\%$.
2. The tolerance of dominant wavelength is $\pm 1\text{nm}$.
3. This specification is preliminary.
4. This specification is a standard specification of our factory, can make in accordance with customer's special requirement.

3528+Lens Series SMD Top LED Lamps Packaging Specification

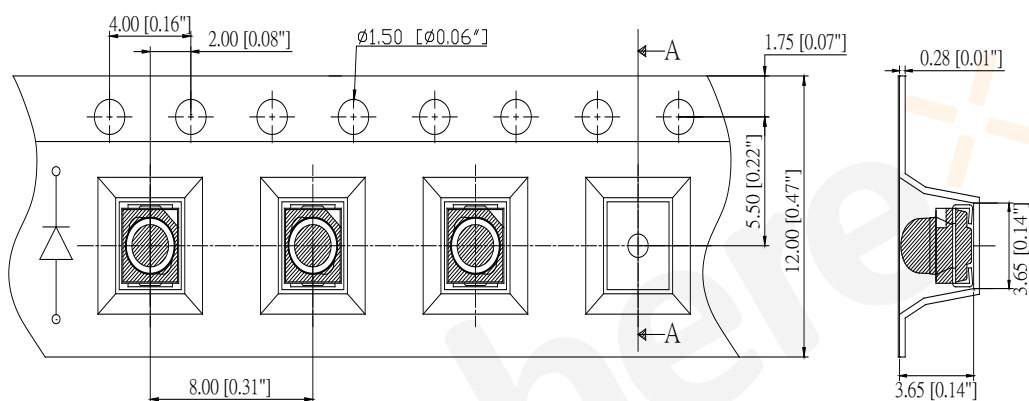
● Feeding Direction



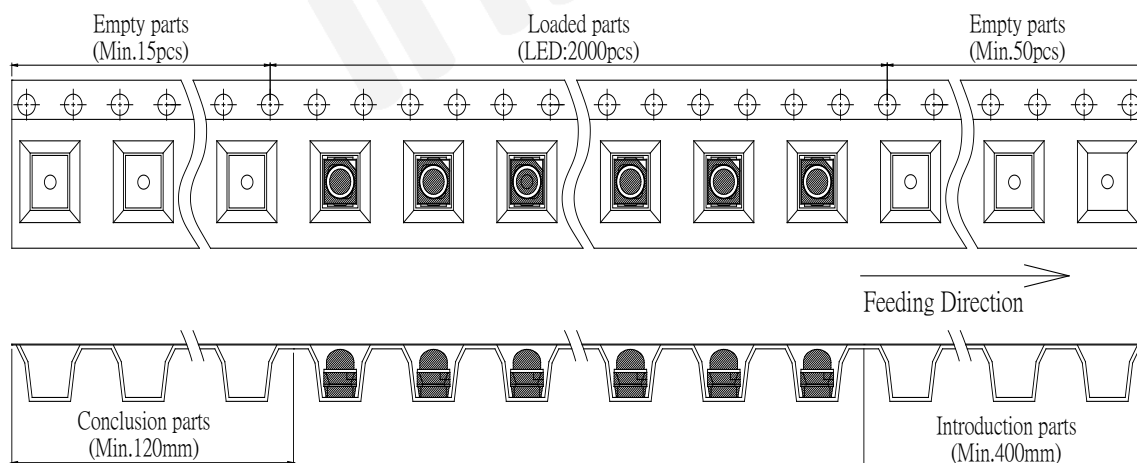
● Dimensions of Reel (Unit: mm)



● 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. 2,000pcs/Reel.

