

# 承認書

## Specification For Approval

Customer: (客戶)

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Description: (產品描述)

SMD3224灯珠带透镜翠绿

Part number: (產品型號)

TJ-S3224SW2T3ALC2G-A5

Date: (日期)

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Approved By: (客戶承認)

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Prepared By: (我司承認)

Approval	Check	Design	Sales

核准

審核

製作

業務

Customer Service Hotline: **400-676-8616**

TEL: 0769-8662 5999    0769-8200 2226

E-MAIL : dg@togialed.com

FAX: 0769-8200 2227

WEB: www.togialed.com

**Features**

3.2mm x 2.4mm SMD LED, 2.4 mm thickness

Low power consumption

Wide view angle

Package: 2000pcs/reel

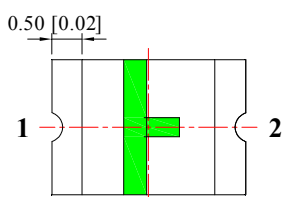
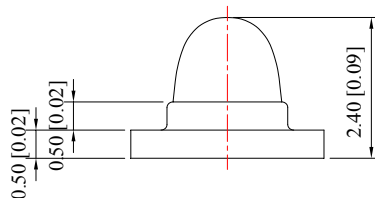
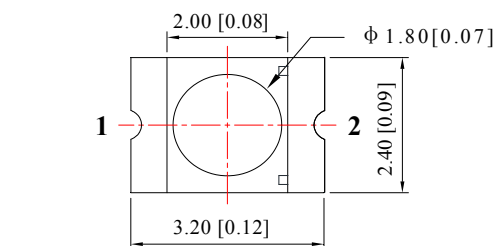
RoHS Compliant

**Applications**

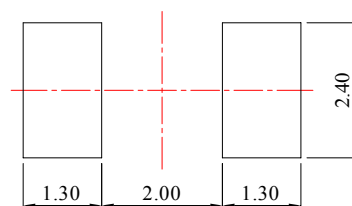
Ideal for back light and indicator

Various colors and lens types available

**Package outlines**



**Recommend Pad Layout**



Part No.	Emitted color	Dice	Lens color
TJ-S3224SW2T3ALC2G-A5	Green	InGaN	Water transparent

**Notes:**

All dimensions are in millimeters (inches);

Tolerances are  $\pm 0.1\text{mm}$  (0.004inch) unless otherwise noted.

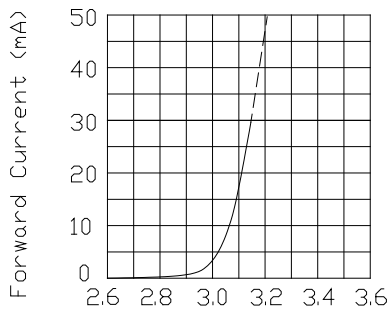
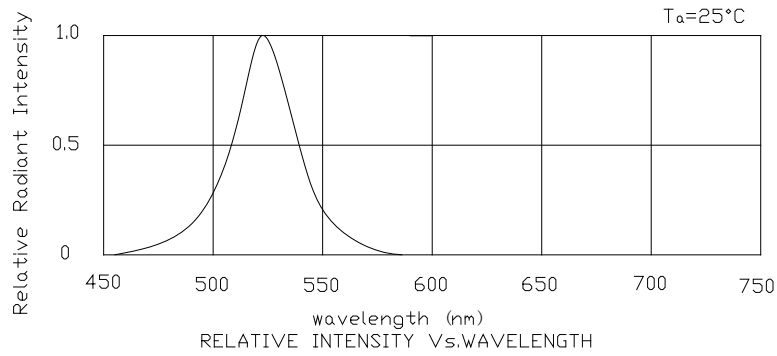
**Absolute Maximum Ratings (TA=25°C)**

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

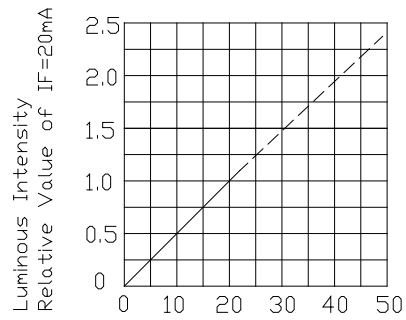
**Electro-Optical Characteristics (TA=25°C)**

Parameter	Test Condition	Symbol	Value			Unit
			Min	Typ	Max	
Wavelength at peak emission	If=20mA	$\lambda_p$	--	515	--	nm
Spectral half bandwidth	If=20mA	$\Delta\lambda$	--	25	--	nm
Dominant wavelength	If=20mA	$\lambda_d$	520	--	530	nm
Forward voltage	If=20mA	Vf	2.8	--	3.4	V
Luminous intensity	If=20mA	Iv	2000	4000	--	mcd
Viewing angle at 50% Iv	If=10mA	2 $\theta$ 1/2	--	20	--	Deg
Reverse current	Vr=5V	Ir	--	--	10	$\mu$ A

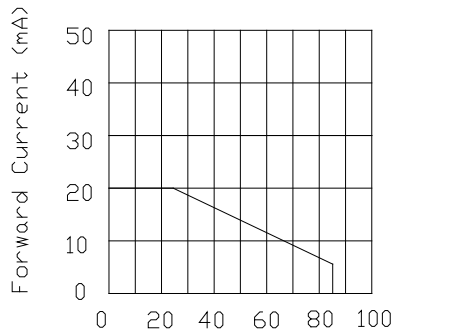
**Optical Characteristic Curves**



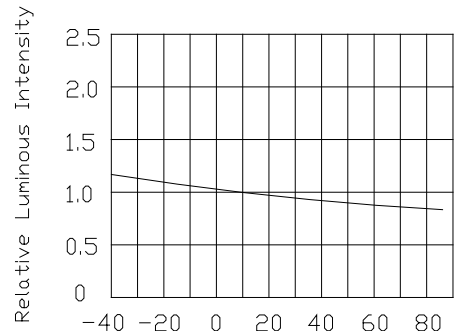
FORWARD CURRENT Vs. FORWARD VOLTAGE



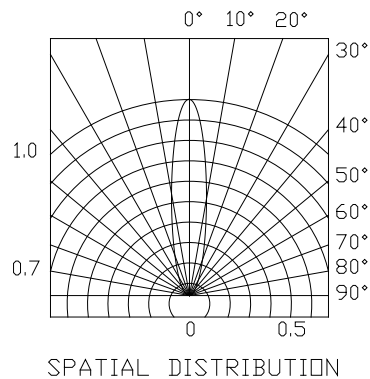
LUMINOUS INTENSITY Vs. FORWARD CURRENT



FORWARD CURRENT DERATING CURVE

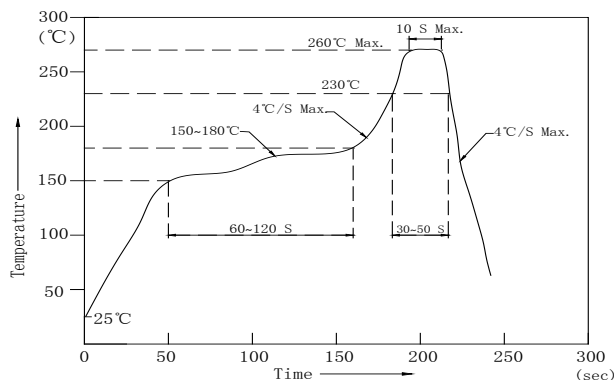


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE



**Reflow Profile**

■ Reflow Temp/Time



Notes:

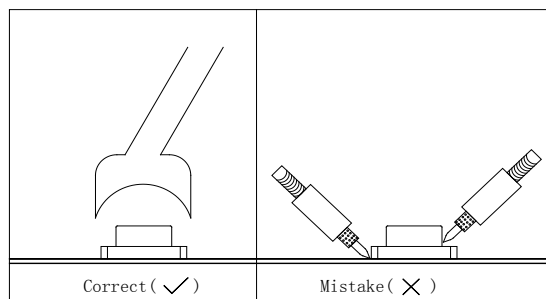
1. We recommend the reflow temperature 245°C (±5°C), the maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

■ Soldering iron

Basic spec is ≤ 5sec 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

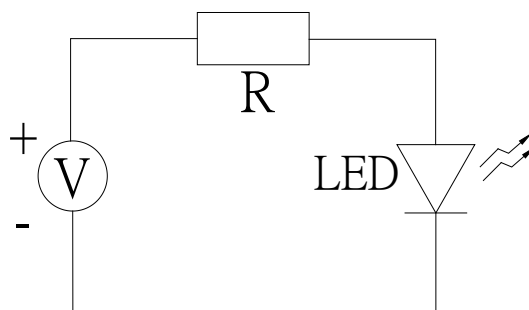
1. Customer must finish rework within 5 sec under 340°C.
2. The head of iron cannot touch copper foil
3. Twin-head type is preferred.



- 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. 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\%</math> R.H. 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\%</math>RH, taped reel type

3.2  $100\pm 3^{\circ}\text{C}$  x (45min~1hr), bulk type

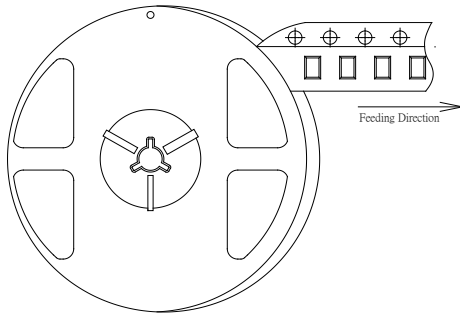
3.3  $130\pm 3^{\circ}\text{C}$  x (15~30min), bulk type

**Test Items and Results of Reliability**

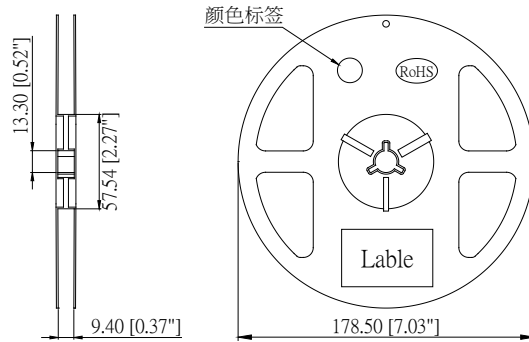
Test Item	Test Conditions	Standard Test Method	Note	Number of Test
Reflow Soldering	Ta=260±5℃,Time=10±2S	JB/T 10845-2008	3times	0/22
Salt Atmosphere	Ta=35±3℃,PH=6.5~7.2	GB/T 2423.17-2008	24hrs	0/22
Temperature Cycling	-40±5℃ 30±1min ↑→(25℃/5±1min)↓ 100±5℃ 30±1min	GB/T 2423.22-2012	100cycles	0/22
Thermal 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

**Series SMD Chip LED Lamps Packaging Specifications**

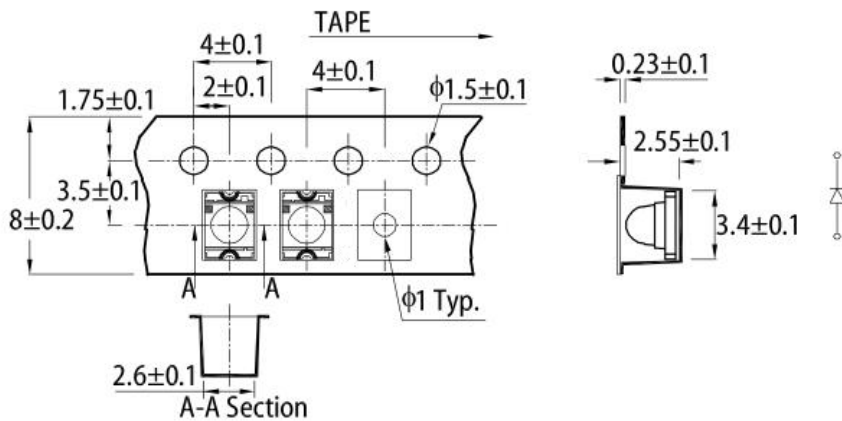
● **Feeding Direction**



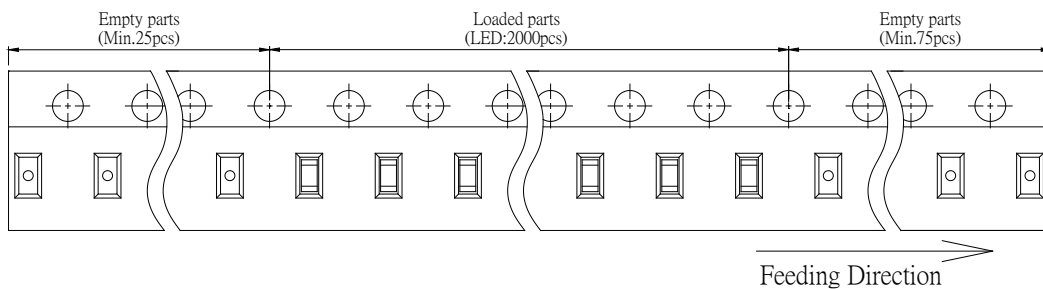
● **Dimensions of Reel (Unit: mm)**



● **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. 2,000 pcs/Reel.



