





APPROVAL SHEET

Part No:

BAT5730A-ZRN-150mA

NOTE :

Green Part

MAKER			CUSTOMER	
				
R&D	QA	Sales	Checked	Approved
				

Prepared	Checked	Approved
Rachel Lee	Sky Lin	Kenneth Wu



Drawing No.	*Rev.	Date	Page
BAT5730A-ZRN-150mA	A	2025/02/19	2/11

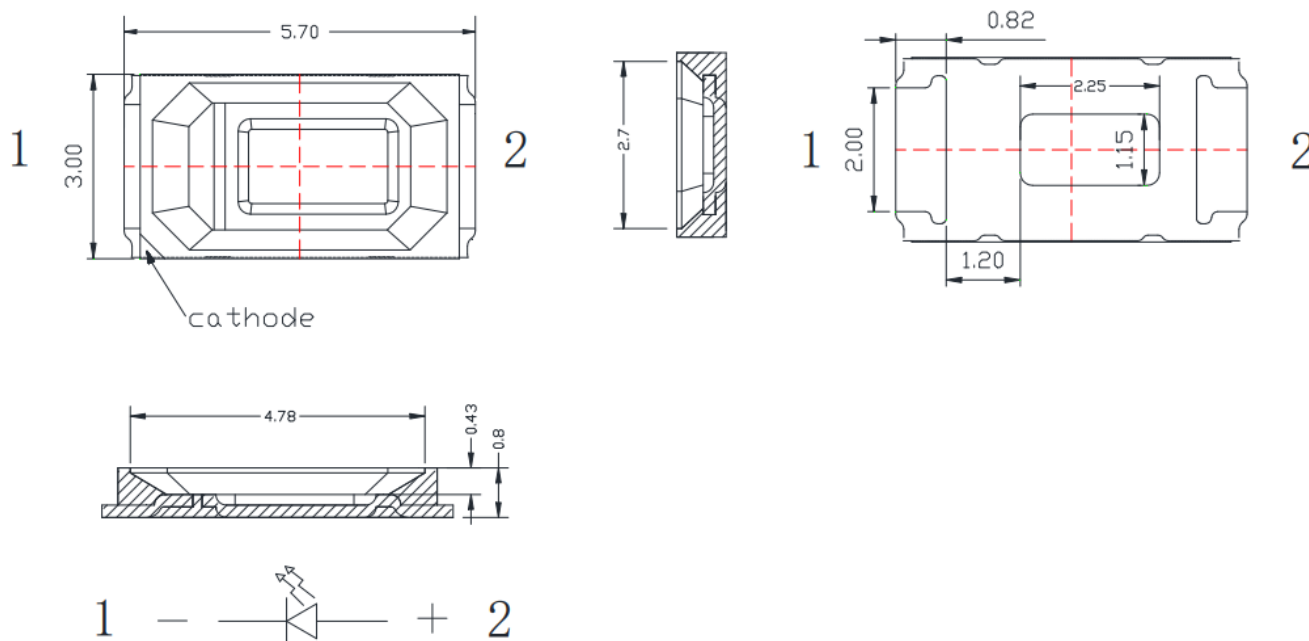
◆ Features:

- * Small package with high efficiency
- * Low voltage operation, Instant light
- * Long operation life
- * Lead free product
- * RoHS compliant

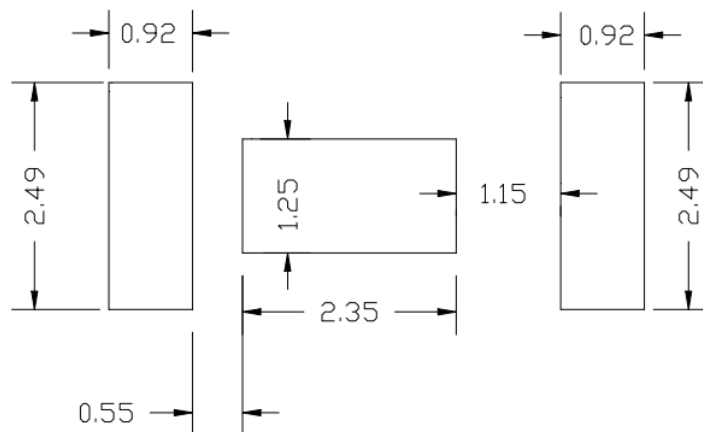
◆ Application:

- * Mobile phone flash
- * Automotive interior lighting
- * Automotive forward lighting
- * Architectural lighting
- * LCD TV / Monitor backlight
- * Traffic signals
- * Task lighting
- * Decorative/ Pathway lighting
- * Remote / Solar powered lighting
- * Household appliances

◆ Package Dimensions



Soldering patterns



Notes:

1. All dimensions are in mm.
2. Tolerance is ± 0.15 mm unless otherwise noted.

◆ Electro Optical Characteristics (TA=25°C)

Parameter	Test Condition	Symbol	Min	Typ	Max	Unit
Forward Voltage	I _F =150mA	V _F	1.8	-	2.4	V
Reverse Current	V _R =-5V	I _R	-	-	10	μA
View Angle	I _F =150mA	2θ _{1/2}	-	120	-	deg.
Electrostatic Discharge	HBM	ESD	-	-	2000	V

◆ Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Forward Current	I _F	150	mA
Pulse Forward Current	I _{FP}	300	mA
Power Dissipation	P _O	300	mW
Reverse Voltage	V _R	5	V
Operation Temperature	T _{opr}	-40 to +85	°C
Storage Temperature Range	T _{stg}	-40 to +85	°C
Junction Temperature	T _j	115	°C
Thermal Resistance	R _θ	23	°C/W
Soldering Temperature	T _{sld}	260°C for 10sec	

Notes:

- Frequency 10KHz, duty ratio ≤10%
- The forward pulse current is the maximum current used by the chip at 25°C.

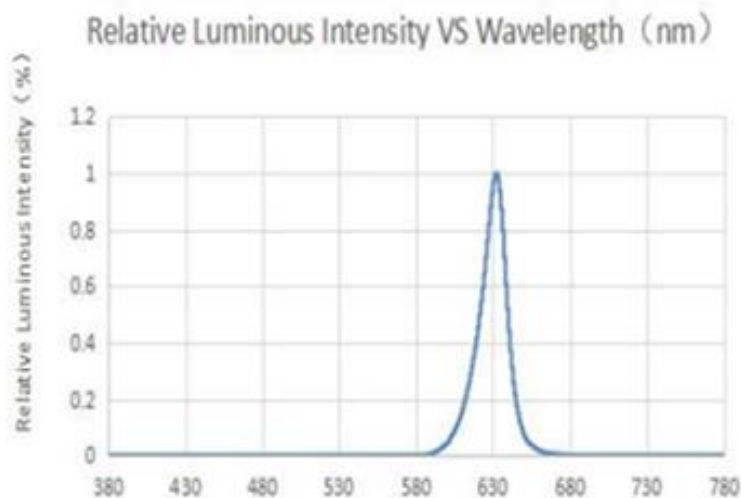
◆ Mass Production List (I_F=150mA; Ta=25°C)

Part NO.	Color Rendering index	λ _d (nm) Min	CCT (K) Typ	λ _d (nm) Max	Φ _e (mW) Min	Φ _e (mW) Max
BAT5730A-ZRN-150mA	0	620	-	630	20	25

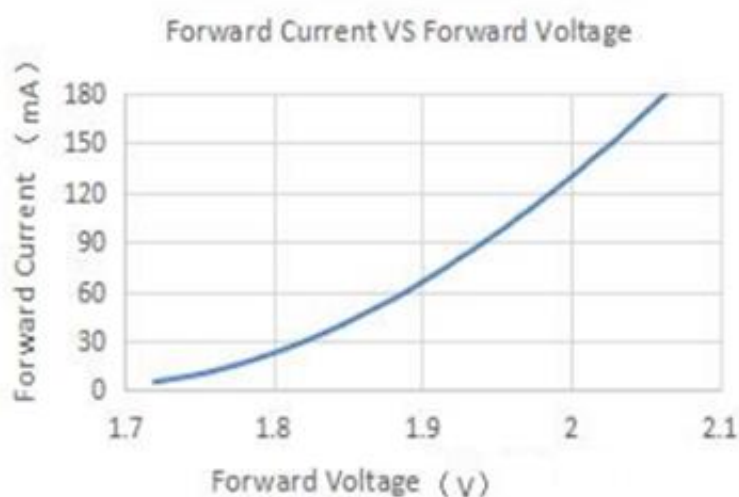
Note: The test error

V_F: ±2% λ_d: ±5% Φ_e: ±10%

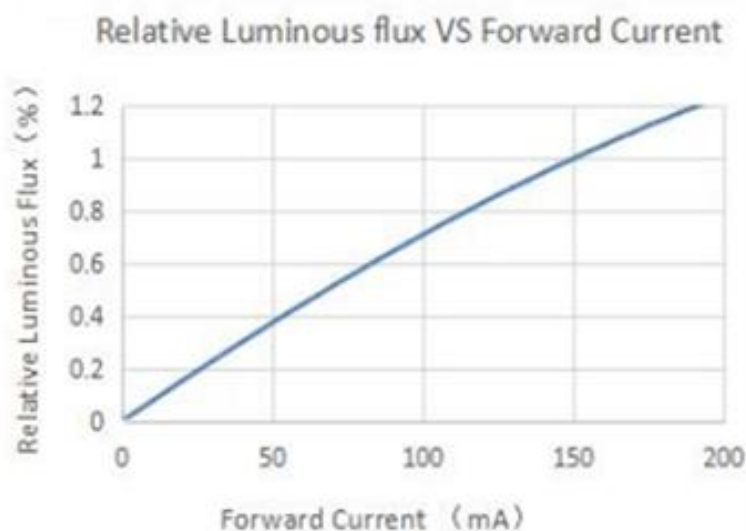
◆Spectral Distribution



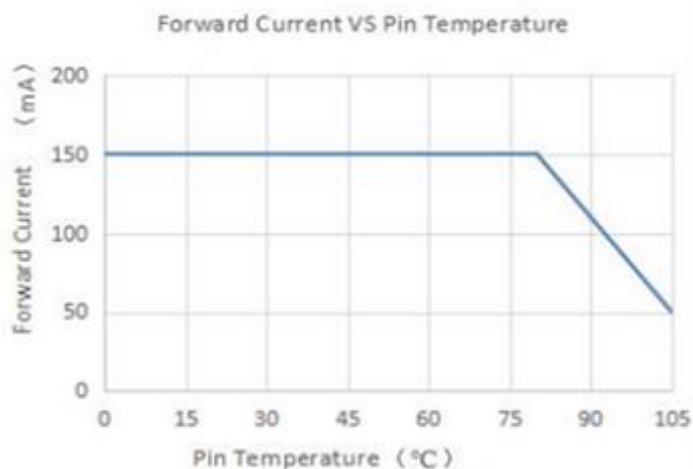
◆Forward Voltage vs. Forward Current



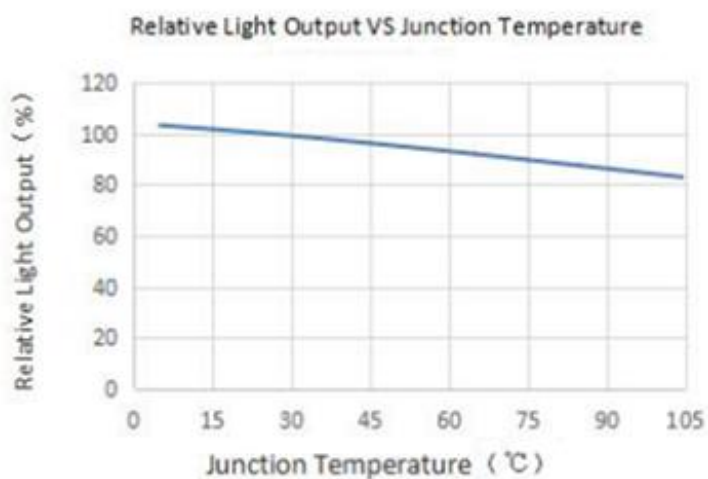
◆Relative Luminous vs Forward Current



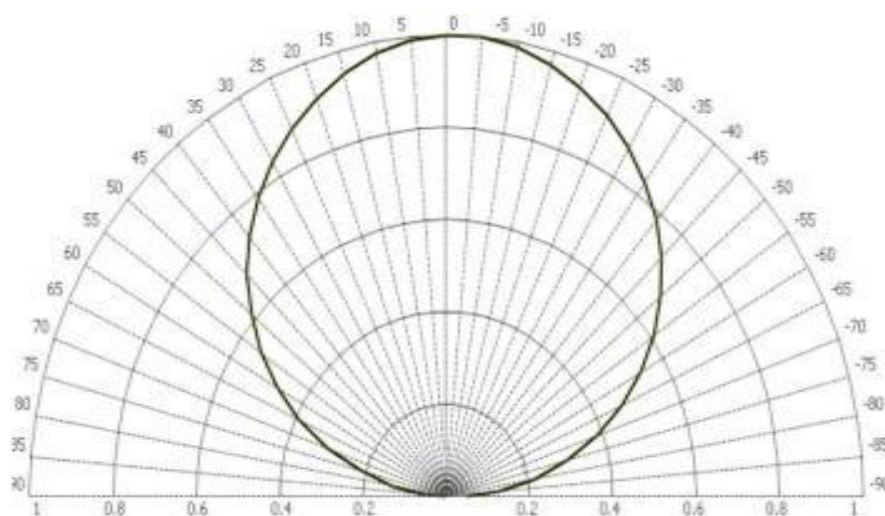
◆ Ambient Temperature vs Forward Current



◆ Relative Flux vs Junction Temperature



◆ View Angle Distribution



◆Reliability

1. Test Items And Results

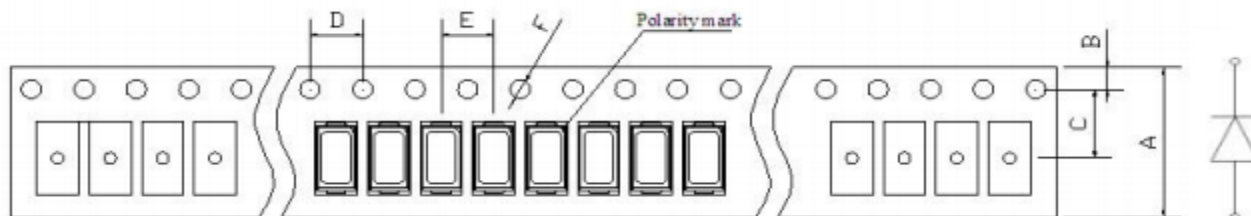
Item	Test conditions	Note	Number of Damaged
Reflow	Temp:260℃ max T=10 sec	2 time	0/22
Thermal Shock	-40~100℃ 30min, 10s, 30min	100cycles	0/22
High Temperature High Humidity Storage	Ta=60℃, RH=90%	300hrs	0/22
Steady State Operating life	Ta=25℃, IF=150mA	1000hrs	0/22
Steady State Operating life of High Humidity Heat	Ta=60℃ RH=90%, IF=150mA	1000hrs	0/22
High Temperature Storage	Ta=100℃	1000HRS	0/22
Low Temperature Storage	Ta=-40℃	1000HRS	0/22

2. Criteria for Judging The Damage

Item	Symbol	Test Conditions	Criteria for Judgment	
			Min.	Max.
Forward Voltage	V _F	IF =150 mA	---	Initial Data ×1.1
Luminous Intensity	I _V	IF =150mA	Initial Data × 0.7	---
Reverse Current	I _R	VR = 5V	---	>10uA

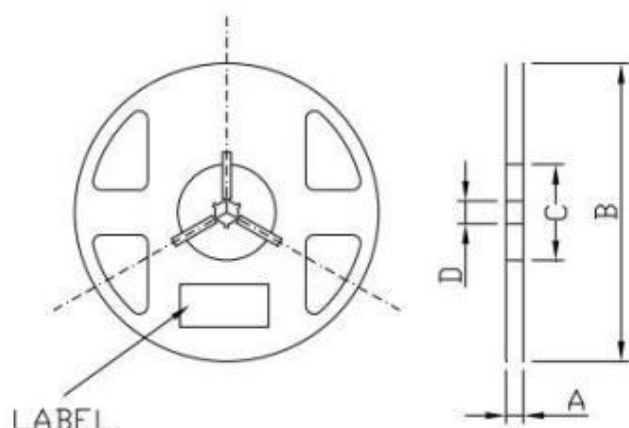
◆Packaging Specifications

Dimensions of Tape



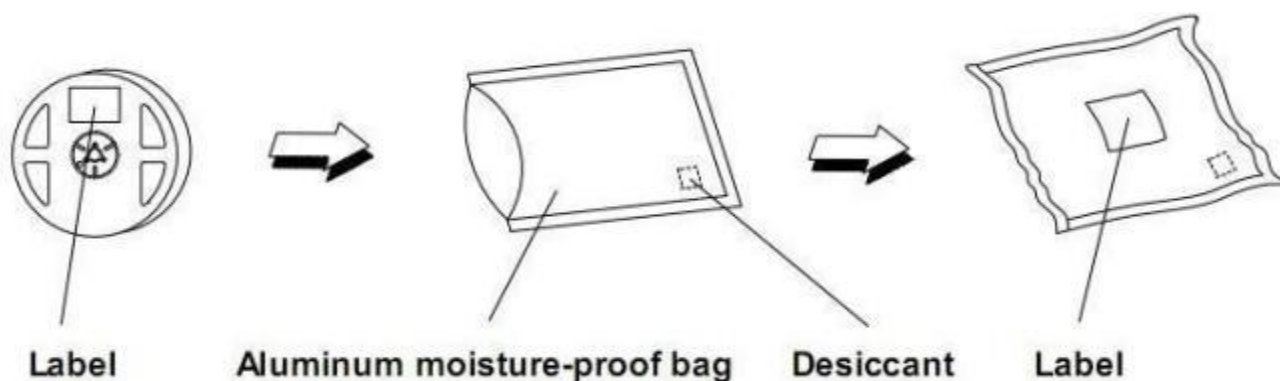
A	B	C	D	E	F
12.00±0.3mm	1.75±0.1mm	5.5±0.05mm	4.0±0.1mm	4.0±0.1mm	1.5±0.05mm

Dimensions of Reel




A	13.6±0.1mm
B	179±1mm
C	58±1mm
D	13.5±0.5mm

Packaging Specifications

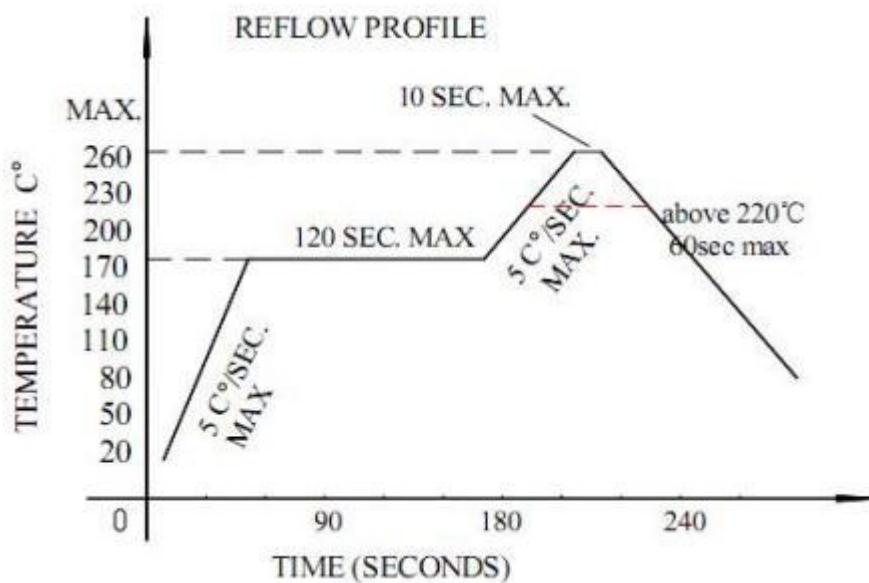


- ◆ 4000pcs/reel
- ◆ 15000pcs/reel

◆Label

Solidlite Corp. 	
P/N :	_____.
Lot :	_____.
Date:	_____. Rank:_____.
Q'ty :	_____. QA :_____.

◆SMT Reflow Soldering Instructions SMT



1. Reflow soldering should not be done more than two times
2. When soldering, do not put stress on the LEDs during heating.

◆CARTIONS

1. The encapsulated material of the LEDs is silicone. Therefore, the LEDs have a soft surface on the top of package. The pressure to the top surface will be influence to the reliability of the LEDs. Precautions should be taken to avoid the strong pressure on the encapsulated part. So, when using the picking up nozzle, the pressure on the silicone resin should be proper.

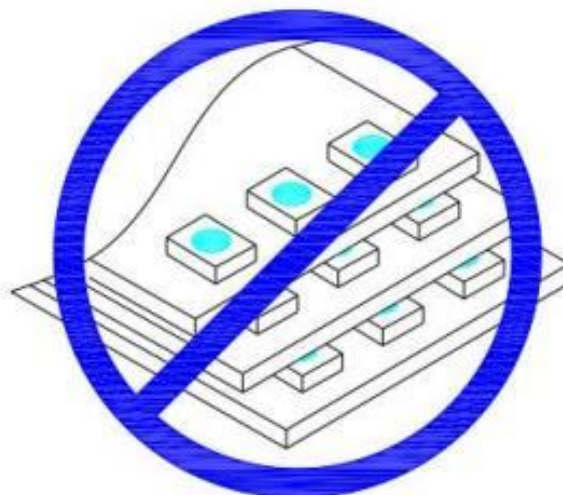
2. Comparing to epoxy encapsulant that is hard and brittle, silicone is soft er and flexible. Although its character is tics significantly reduces thermal stress, it is more prone to damage by external mechanical force. As a result, special handling precautions must be observed during assembling using silicone.

Encapsulated LED products, Failure to comply might lead to damage and premature failure of the LED.

2.1 Handle the component along the side surface by using force or appropriate tools; do not directly to Handle the silicone lens surface, it may damage the internal circuitry.



2.2 Do not stack to get her assembled PCBs containing LEDs. Impact may scratch the silicone lens or damage the internal circuitry.



3. Material confirmation. Whether the LED Bin specifications of the material are consistent , such as whether V_F , XY, bright ness and soon belong to the same specification, the same specification should be used together, if not the same specification LED is applied to the same object, it should be evaluated first, (if different V_F or XY cast together may produce difference in bright ness or color).

4. Packaging and storage

4.1 Before opening packaging, avoid moisture entry into LED. SMD series LED is suggested to be stored in a drying cabinet with built-in desiccant. The storage environment is 5-30 centigrade, no more than 50% humidity. If storage time is over 3 months, LED needs to be dehumidified (65 °C degrees centigrade for more than / 24 hours).

4.2 Open the precautions after packing. LED is a surface mount. When the LED is welded, the internal separation of LED may occur. The luminescence efficiency is affected and the luminance decreases or the color variation. The following are the matters to be paid attention to:

A. Before opening the package, please check the packaging bag for air leak age. If there is any air leakage, please return it to our company to re-bake the dehumidifying package before use.

B. After opening the package, welding should be completed as soon as possible (within 12 hours).

C. The remaining materials are sealed or placed in an environment of 5~40 °C Canv dno more than 30% humidity.

D. If the open package is more than 24 hours (< 168 hours) or the humidity card is changed from Blue to pink, LED needs to be dehumidified again (65 °C degrees centigrade for more than / 24 hours). If the package is opened for more than 168 hours, it is necessary to dismantle the tape and remove the moisture at 150°C / 2 hours.

4.3 LED electrode and bracket are made of silver plated copper alloy. The silver layer on the surface is easy to be affected by corrosive gases. Please avoid contacting with corrosive environment to cause LED discoloration, so as to avoid the poor weld ability of LED and influence the photoelectric performance. Avoid sudden changes in temperature and humidity of the environment, especially under high humidity environment, easy to produce water vapor condensation.

5. Electrostatic protection. LED is a chip sensitive electronic component. Various measures should be taken to avoid static electricity, such as wearing an electrostatic bracelet or anti-static gloves during use. All devices, equipment and instruments should be well grounded.