

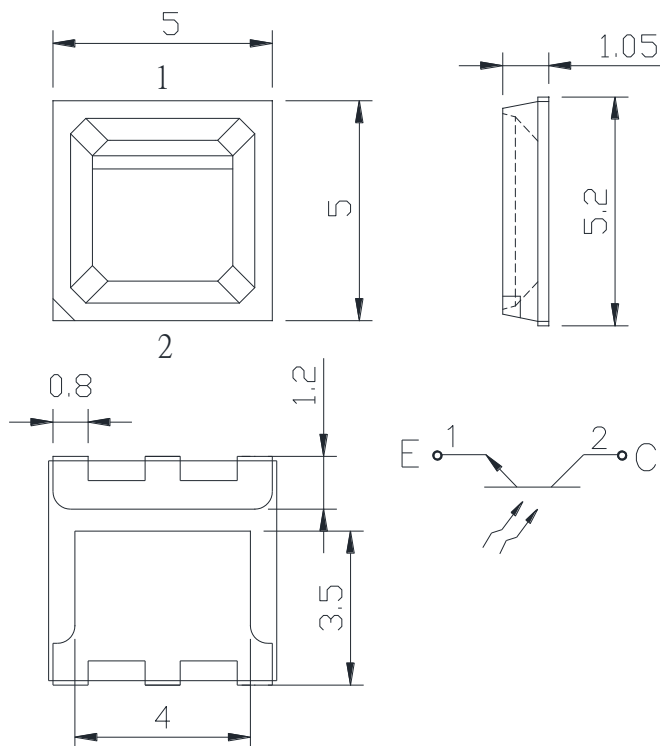
# BRIGHTTEK OPTOELECTRONICS

## PHOTO TRANSISTOR

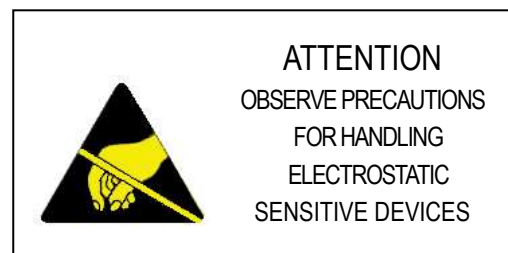
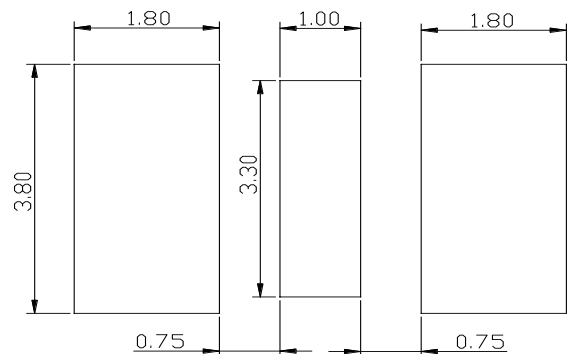
High Performance SMD Top LEDs

Part Number: N0P47S71

### Package outlines



### RECOMMEND PAD LAYOUT



ITEM	MATERIALS
Resin	Silicon
Lens color	Water transparent
Dice	Silicon

#### NOTES:

1. All dimensions are in millimeters (inches);
2. Tolerances are  $\pm 0.2\text{mm}$  (0.008inch) unless otherwise noted.
3. Please add heat sink during usage;

Rev :	Date	Drawn by :	Checked by :	Approved by :
A	2018/12/04	唐云	周書蘭	李用基

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Part Number: N0P47S71

## Absolute maximum ratings (T<sub>A</sub>=25°C)

Parameter	Symbol	Value	Unit
Power dissipation	P <sub>D</sub>	100	mW
Collector-emitter voltage	V <sub>CEO</sub>	30	V
Emitter-collector voltage	V <sub>ECO</sub>	5	V
Operating temperature range	T <sub>OP</sub>	-40 ~+80	°C
Storage temperature range	T <sub>STG</sub>	-40 ~+85	°C

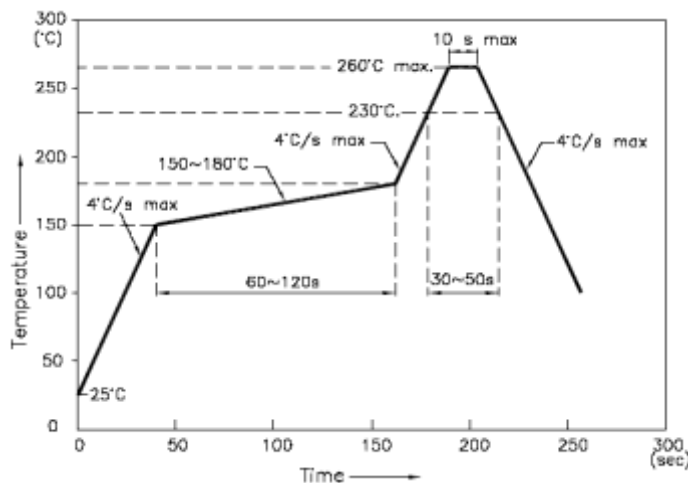
## Electro-optical characteristics (T<sub>A</sub>=25°C)

Parameter	Test Condition	Symbol	Value			Unit
			Min	Typ	Max	
Collector-emitter breakdown voltage	I <sub>ceo</sub> =100 μ A	BV <sub>ceo</sub>	55	--	--	V
Emitter-collector breakdown voltage	I <sub>eco</sub> =10 μ A	BV <sub>eco</sub>	5.5	--	--	V
Collector-base breakdown voltage	I <sub>cbo</sub> =100 μ A	BV <sub>cbo</sub>	95	--	--	V
Collector-emitter saturation voltage	I <sub>b</sub> =100 μ A / I <sub>c</sub> =2mA	V <sub>ce(sat)</sub>	--	--	0.15	V
Dark current	V <sub>ce</sub> =20V	I <sub>ceo</sub>	--	--	0.02	μ A
DC current amplification factor	V <sub>ce</sub> =5V I <sub>b</sub> =3 μ A	h <sub>fe</sub>	440	--	960	--
			860	--	1470	
			1250	--	2000	
			1300	--	2600	

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## Reflow Profile

### ■ Reflow Temp/Time



### NOTES:

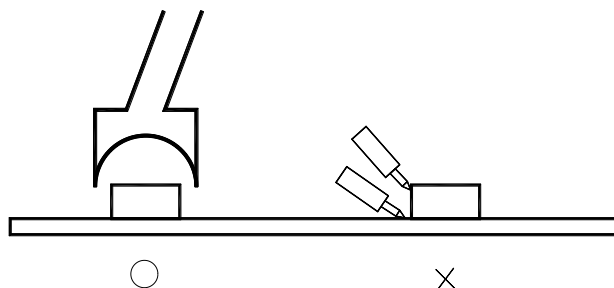
1. We recommend the reflow temperature 245°C ( $\pm 5^\circ\text{C}$ ). the maximum soldering temperature should be limited to 260°C.
2. dont cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

### ■ Soldering iron

Basic spec is  $\leq 5\text{sec}$  when 260°C. If temperature is higher, time should be shorter (+10°C  $\rightarrow$  -1sec). Power dissipation of iron should be smaller than 20W, and temperatures should be controllable. Surface temperature of the device should be under 230°C.

### ■ Rework

1. Customer must finish rework within 5 sec under 260°C.
2. The head of iron can not 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.

# BRIGHTEK OPTOELECTRONICS

## PHOTO TRANSISTOR

### Test circuit and handling precautions

#### ■ 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  $5^{\circ}\text{C}\sim 30^{\circ}\text{C}$  and  $< 60\%$  R.H;

3. After the package is Opened:

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

Baking condition:

a.  $60\pm 5^{\circ}\text{C}$  x (24~48hrs) and  $< 5\%$ RH, taped reel type ;

b.  $110\pm 5^{\circ}\text{C}$  x (8~16hr), bulk type ;

3.2. The products should be used within a week and to be stored at  $\leq 20\%$  R.H. with zip-lock sealed:

a. Baking is required before soldering when the pack is unsealed after 24hrs ;

b. Baking condition as 3.1 baking condition.

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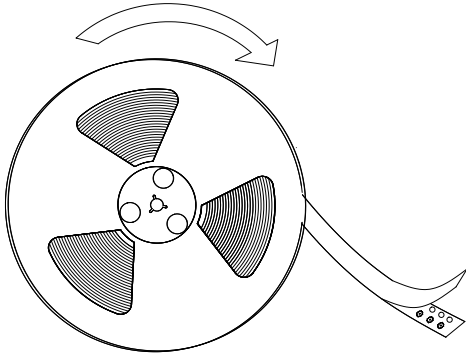
## Test items and results of reliability

Type	Test Item	Test Conditions	Note	Number of Damaged
Environmental Sequence	Temperature Cycle	-20°C 30min ↑ ↓ 80°C 30min	100 cycle	0/22
	Thermal Shock	-20°C 15min ↑ ↓ 80°C 15min	100 cycle	0/22
	High Humidity Heat Cycle	30°C ↔ 65°C 90%RH 24hrs/1cycle	10 cycle	0/22
	High Temperature Storage	T <sub>a</sub> =80°C	1000 hrs	0/22
	Humidity Heat Storage	T <sub>a</sub> =60°C RH=90%	1000 hrs	0/22
	Low Temperature Storage	T <sub>a</sub> =-30°C	1000 hrs	0/22
Operation Sequence	Life Test	T <sub>a</sub> =25°C I <sub>F</sub> =20mA	1000 hrs	0/22
	High Humidity Heat Life Test	60°C RH=90% I <sub>F</sub> =10mA	500 hrs	0/22
	Low Temperature Life Test	T <sub>a</sub> =-20°C I <sub>F</sub> =20mA	1000 hrs	0/22

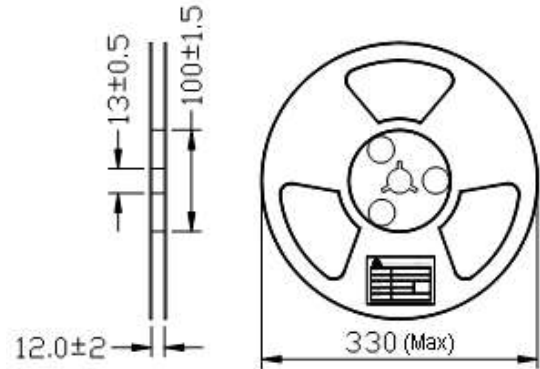
# PACKAGING SPECIFICATIONS

## Packaging Specifications

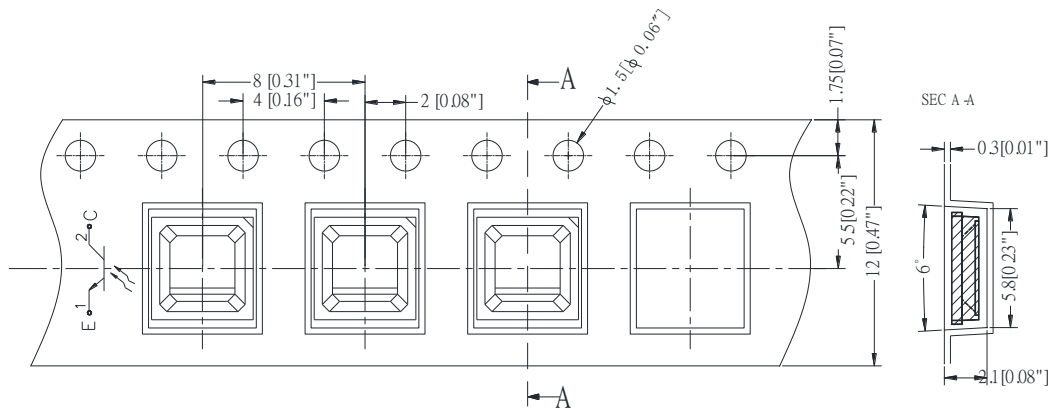
### ● Feeding Direction



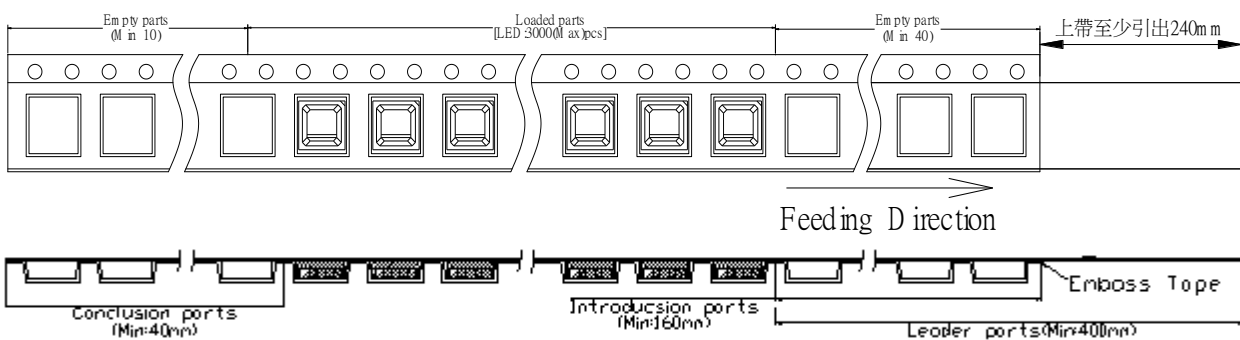
### ● Dimensions of Reel (Unit: mm)



### ● Dimensions of Tape (Unit: mm)



### ● Arrangement of Tape



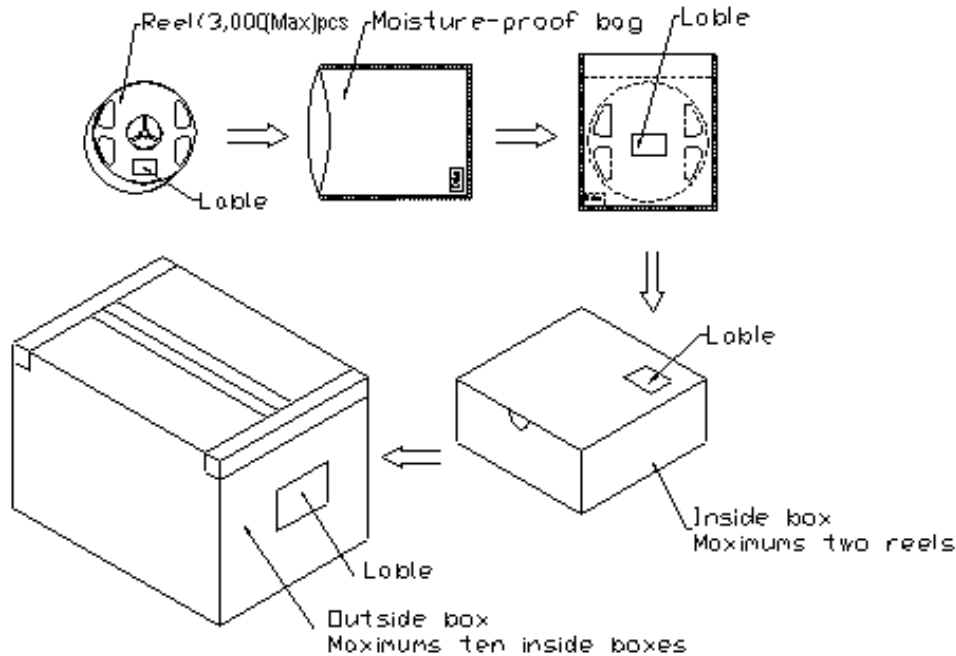
### NOTES

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;
4. 3,000(Max)pcs/Reel

# PACKAGING SPECIFICATIONS

## Packaging Specifications

- Packaging specifications



### NOTES:

Reeled products [numbers of products are 3,000(Max)pcs] packed in a seal off moisture-proof bag along with a desiccant one by one and with a Humidity-Sensor one by one, Two moisture-proof bag of maximums [total maximum number of products are 6,000(Max)pcs] packed in an inside box(size: about 380mm x about 380mm x about 52 mm) and ten inside boxes of maximums are put in the outside box(size: about 398mm x about 398mm x about 541mm) 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.