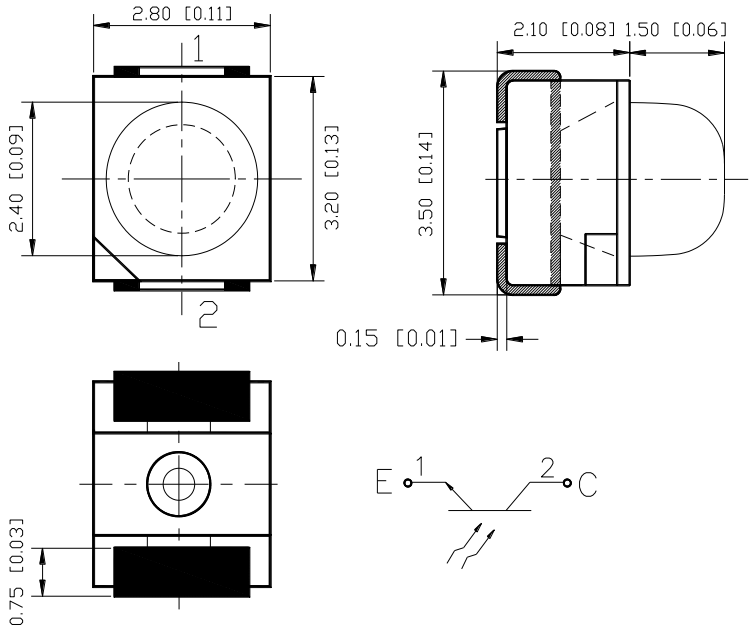
BRIGHTEK OPTOELECTRONICS

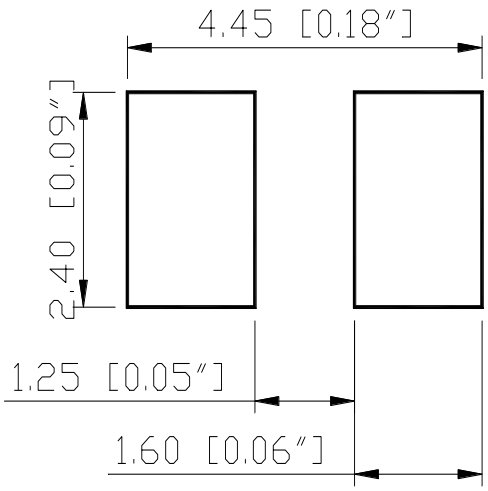
PHOTO TRANSISTOR

Part Number: N0P50S12

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 ±0.2mm (0.008inch) unless otherwise noted.

Rev :	Date	Drawn by :	Checked by :	Approved by :
A	2014/08/28	唐云	許媚鳳	黃靜文

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Absolute maximum ratings (T_A=25℃)

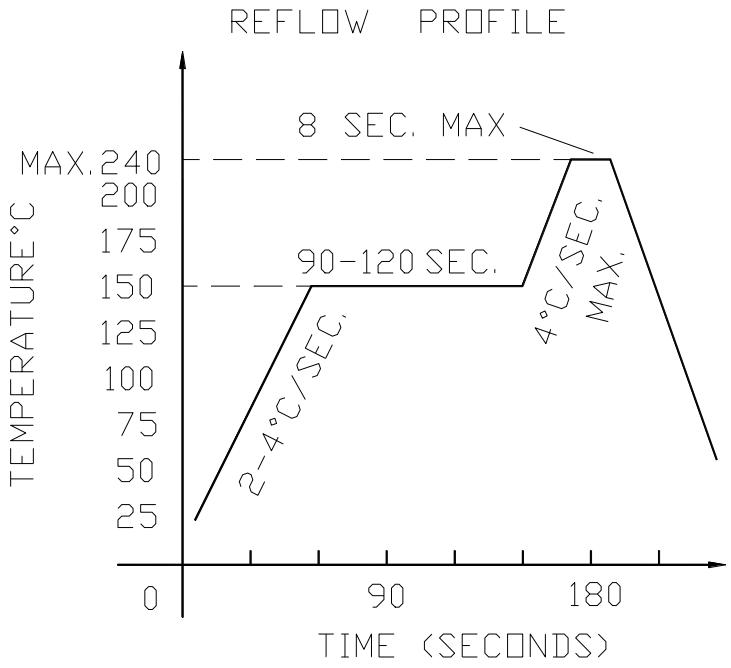
Parameter	Symbol	Value	Unit
Power dissipation	PD	100	mW
Collector-emitter voltage	VCEO	30	V
Emitter-collector voltage	VECO	5	V
Operating temperature range	TOP	-40 ~+80	℃
Storage temperature range	TSTG	-40 ~+85	℃

Electro-optical characteristics (T_A=25℃)

Parameter	Test Condition	Symbol	Value			Unit
			Min	Typ	Max	
Collector-emitter breakdown voltage	I_C = 100μA IB=0	$V_{(BR)\ CEO}$	30	--	--	V
Emitter-collector breakdown voltage	I_E= 100μA IB=0	$V_{(BR)\ ECO}$	5	--	--	V
Collector-emitter saturation voltage	Ic= 2mA I_B= 100μA	$V_{CE\ (SAT)}$	--	--	0.3	V
Rise time	V_{CE} = 5V I_C=1 mA R_L = 1000Ω	T_R	--	15	--	μS
Fall time		T_F	--	15	--	μS
Collector dark current	V_{CE} = 20V E_e = 0mW/cm^2	I_{CEO}	--	--	100	nA
Current gain	VCE = 5V, IC=2mA	hFE	200	--	--	--

Reflow Profile

■ Reflow Temp/Time



■ Soldering iron

Basic spec is ≤ 5sec when 260℃. 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 230℃.

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 months at 5℃~30℃ 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℃ x (36~48hrs) and ＜5%RH, taped reel type；

b. 110±3℃ x (8~16hr), bulk type；

3.2 The products should be used within a week or they should be keeping to stored at ≦20 R.H. with zip-lock sealed:

a. It is recommended to baking before soldering when the pack is unsealed after 72hrs；

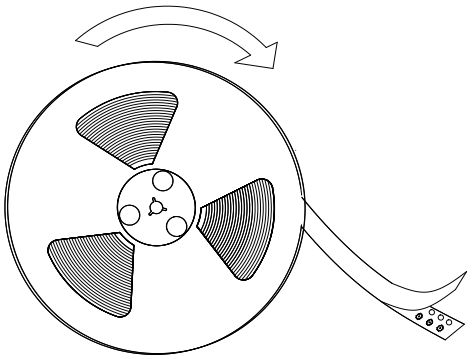
b. Baking condition as 3.1 baking condition.

Test items and results of reliability

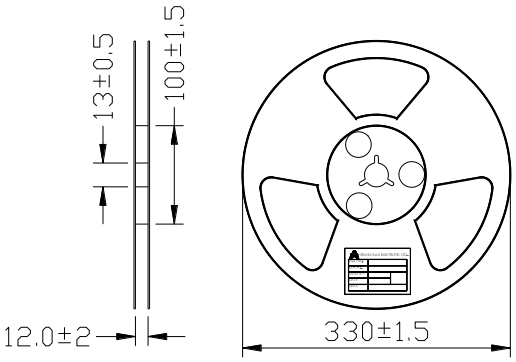
Type	Test Item	Test Conditions	Device Hours/Cycle	Device Tested	Failures
1	Temperature Cycle	-20℃ 30min 50min ↑ ↓ 100min 80℃ 30min	50 cycle	22	0
2	Thermal Shock	-20℃ 15min ↑ ↓ 80℃ 15min	50 cycle	22	0
3	High Temperature High Humidity Test	T_a=85℃ RH 85%	1000 hrs	22	0
4	High Temperature Storage	T_a=80℃	1000 hrs	22	0
5	Low Temperature Storage	T_a= -30℃	1000 hrs	22	0
6	DC Operating Life	V_{CE} = 5V T_a= 25℃ Ee=1mW/cm^2	1000 hrs	22	0

Packaging Specifications

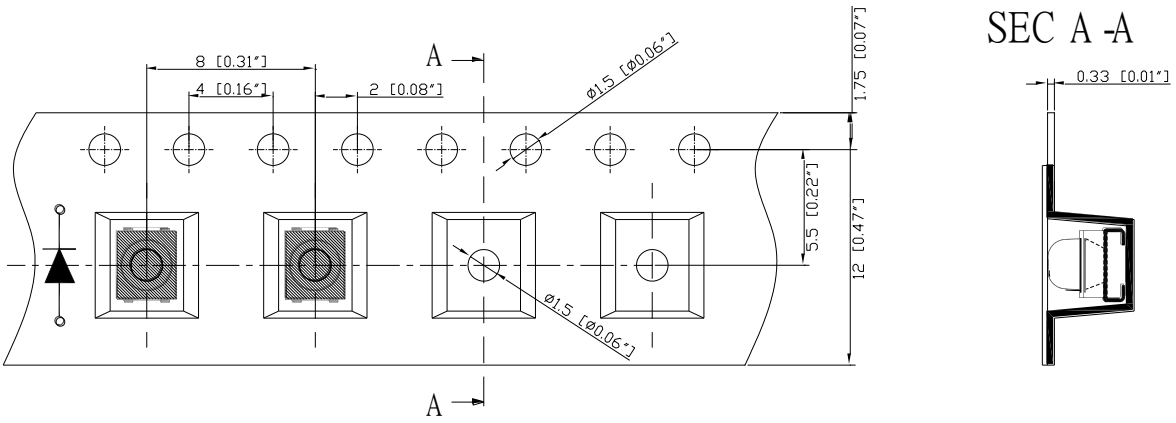
- **Feeding Direction**



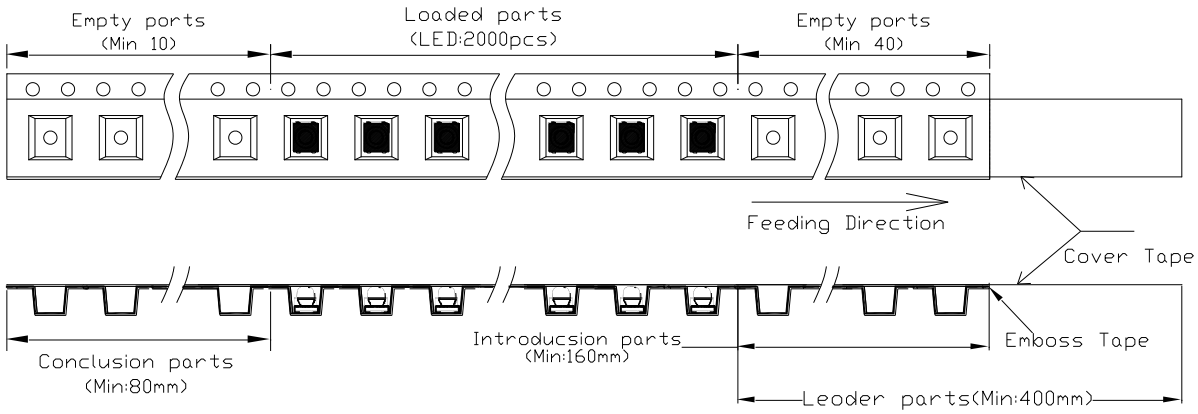
- **Dimensions of Reel (Unit: mm)**



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



- **Arrangement of Tape**

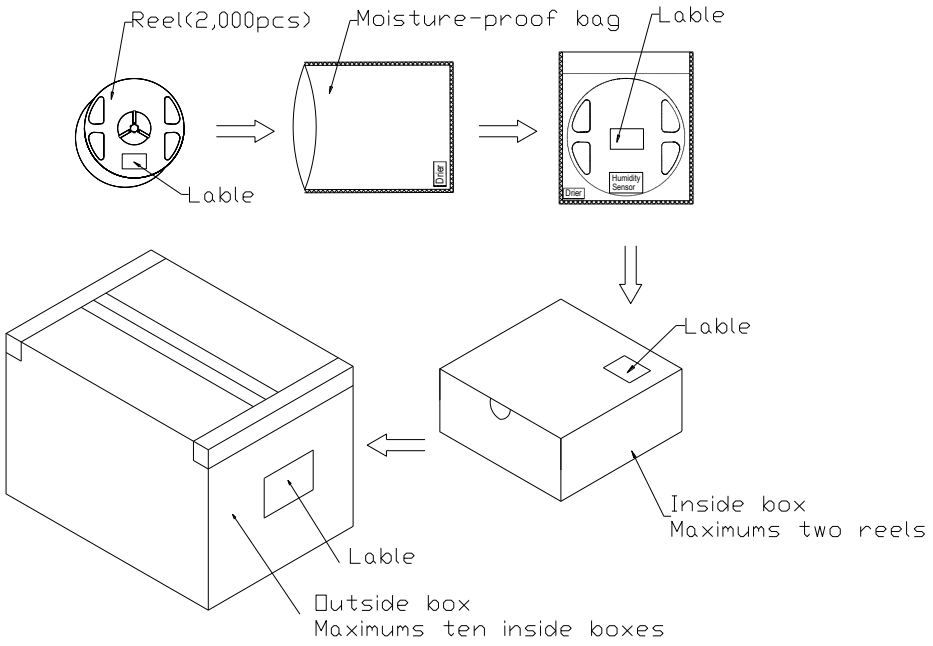


NOTES

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. 2,000pcs/Reel

Packaging Specifications

- **Packaging specifications**



NOTES:

Reeled products (numbers of products are 2,000pcs) packed in a seal off moisture-proof bag along with desiccant and Humidity card one by one, Two moisture-proof bag of maximums (total maximum number of products are 4,000pcs) packed in an inside box (size: about 380mm x about 380mm x about 52mm) and ten inside boxes of maximums are put in the outside box (size: about 398mm x about 398mm x about 398mm) 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.