

Part Number: KPA-3010P3C

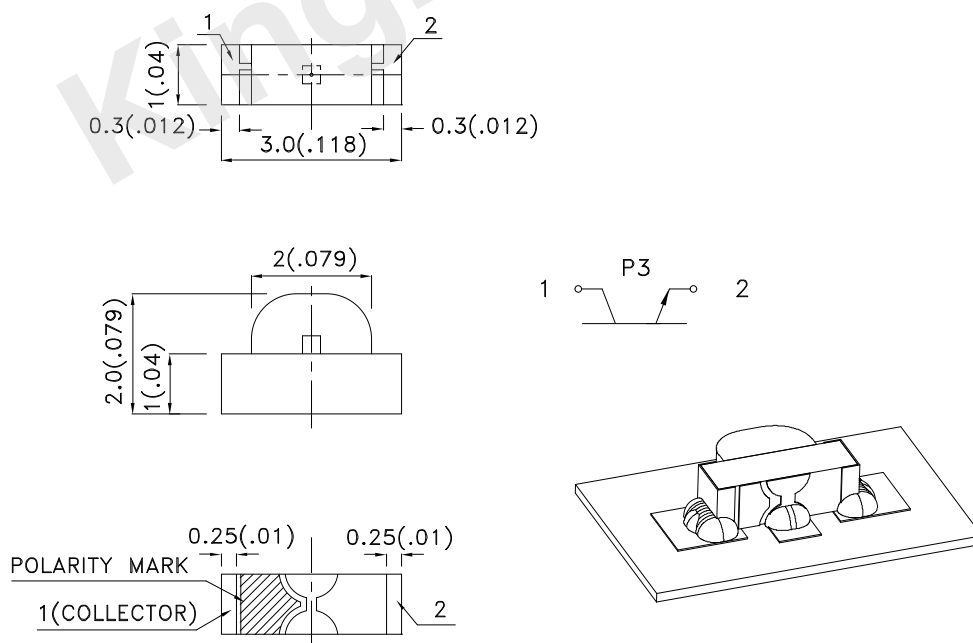
### Features

- 3.0mmx1.0mm right angle SMT LED, 2.0mm thickness.
- Mechanically and spectrally matched to the infrared emitting LED lamp.
- Package : 2000pcs / reel.
- Moisture sensitivity level : level 3.
- Tinned pads for improved solderability.
- RoHS compliant.

### Description

Made with NPN silicon phototransistor chips.

### Package Dimensions



#### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.15(0.006)$  unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
4. The device has a single mounting surface. The device must be mounted according to the specifications.



## Electrical / Optical Characteristics at TA=25°C

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
V <sub>BR CEO</sub>	Collector-to-Emitter Breakdown Voltage	30			V	I <sub>C</sub> =100uA E <sub>e</sub> =0mW/c m <sup>2</sup>
V <sub>BR ECO</sub>	Emitter-to-Collector Breakdown Voltage	5			V	I <sub>E</sub> =100uA E <sub>e</sub> =0mW/c m <sup>2</sup>
V <sub>CE (SAT)</sub>	Collector-to-Emitter Saturation Voltage			0.8	V	I <sub>C</sub> =2mA E <sub>e</sub> =20mW/c m <sup>2</sup>
I <sub>CEO</sub>	Collector Dark Current			100	nA	V <sub>CE</sub> =10V E <sub>e</sub> =0mW/c m <sup>2</sup>
T <sub>R</sub>	Rise Time (10% to 90% )		15		us	V <sub>CE</sub> = 5V I <sub>C</sub> =1mA R <sub>L</sub> =1000Ω
T <sub>F</sub>	Fall Time (90% to 10% )		15		us	
I <sub>(ON)</sub>	On State Collector Current	0.2	0.4		mA	V <sub>CE</sub> = 5V E <sub>e</sub> =1mW/c m <sup>2</sup> λ=940nm

## Absolute Maximum Ratings at TA=25°C

Parameter	Max.Ratings
Collector-to-Emitter Voltage	30V
Emitter-to-Collector Voltage	5V
Power Dissipation at (or below) 25°C Free Air Temperature	100mW
Operating Temperature	-40°C To +85°C
Storage Temperature	-40°C To +85°C

Typical Electro-Optical Characteristics Curves

Fig.1 Collector Power Dissipation vs. Ambient Temperature

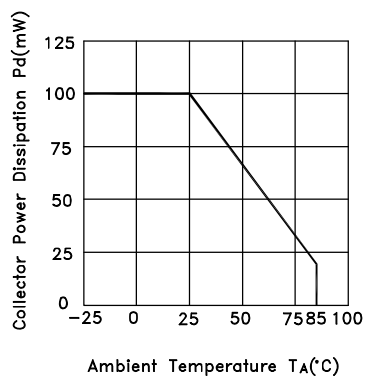


Fig.2 Spectral Sensitivity vs. Wavelength

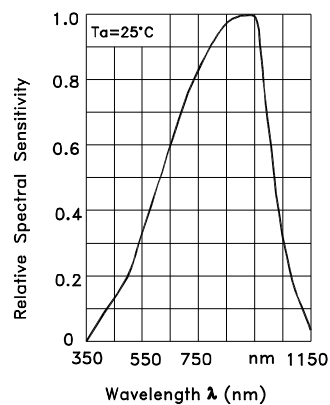


Fig.3 Relative Collector Current vs. Ambient Temperature

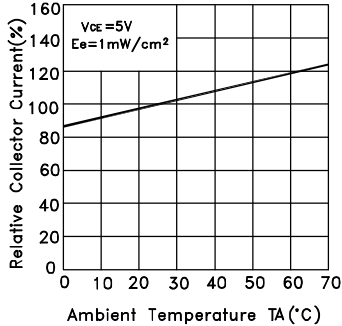


Fig.4 Collector Current  
 $I_c=f(E_e), V_{ce}=5V, T_a=25^{\circ}C$

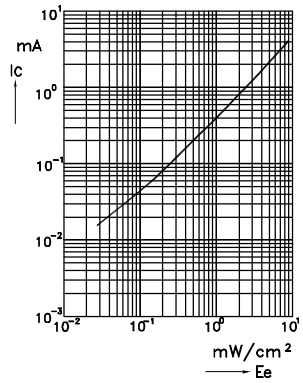


Fig.5 Collector Dark Current vs. Ambient Temperature

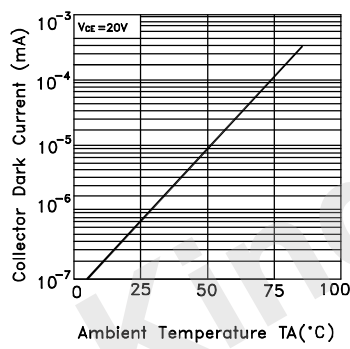


Fig.6 Collector Current vs. Collector-Emitter Voltage

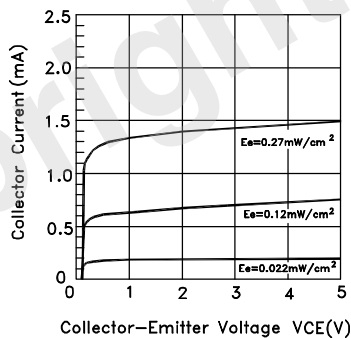
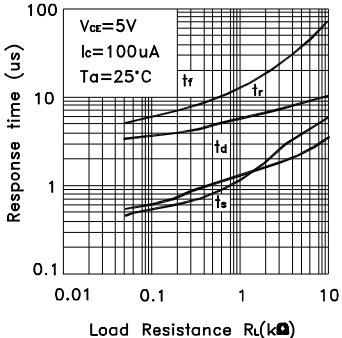
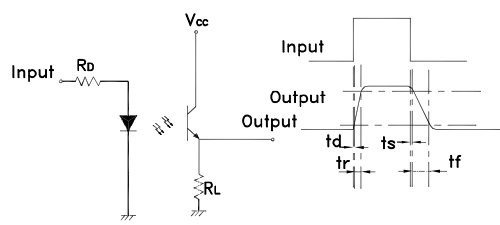


Fig.7 Response Time vs. Load Resistance



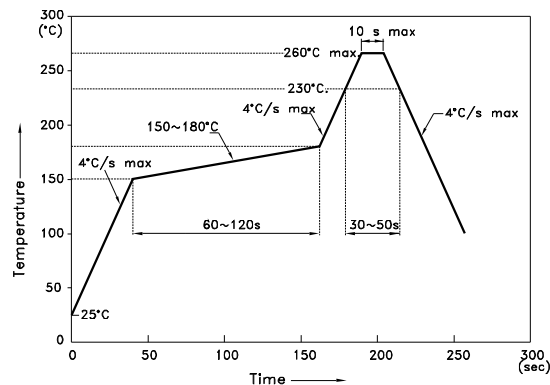
Test Circuit for Response Time



## KPA-3010P3C

Reflow soldering is recommended and the soldering profile is shown below.  
Other soldering methods are not recommended as they might cause damage to the product.

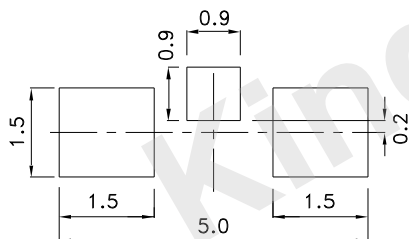
Reflow Soldering Profile For Lead-free SMT Process.



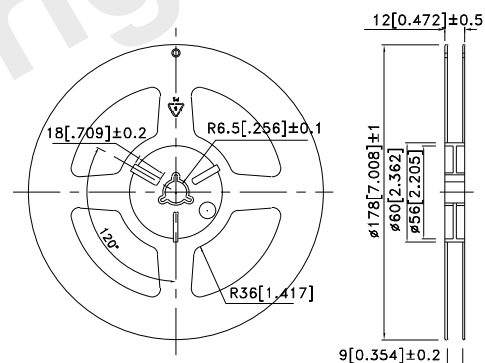
### NOTES:

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.

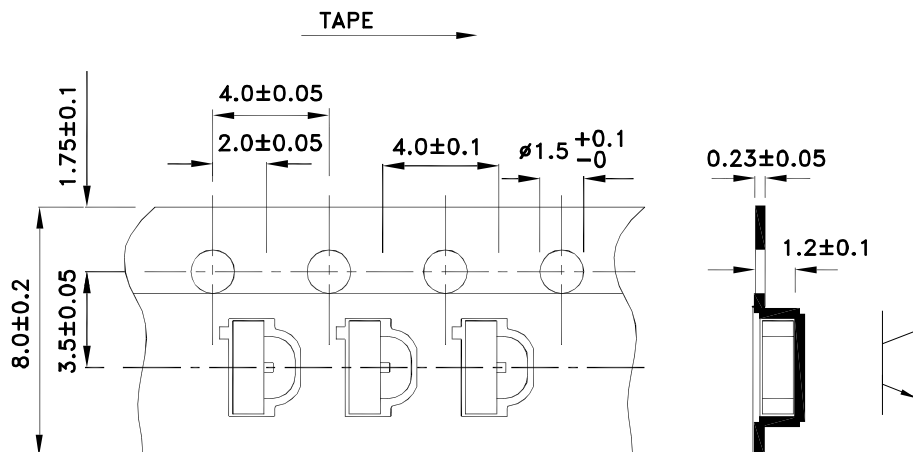
## Recommended Soldering Pattern (Units : mm; Tolerance: $\pm 0.1$ )



## Reel Dimension

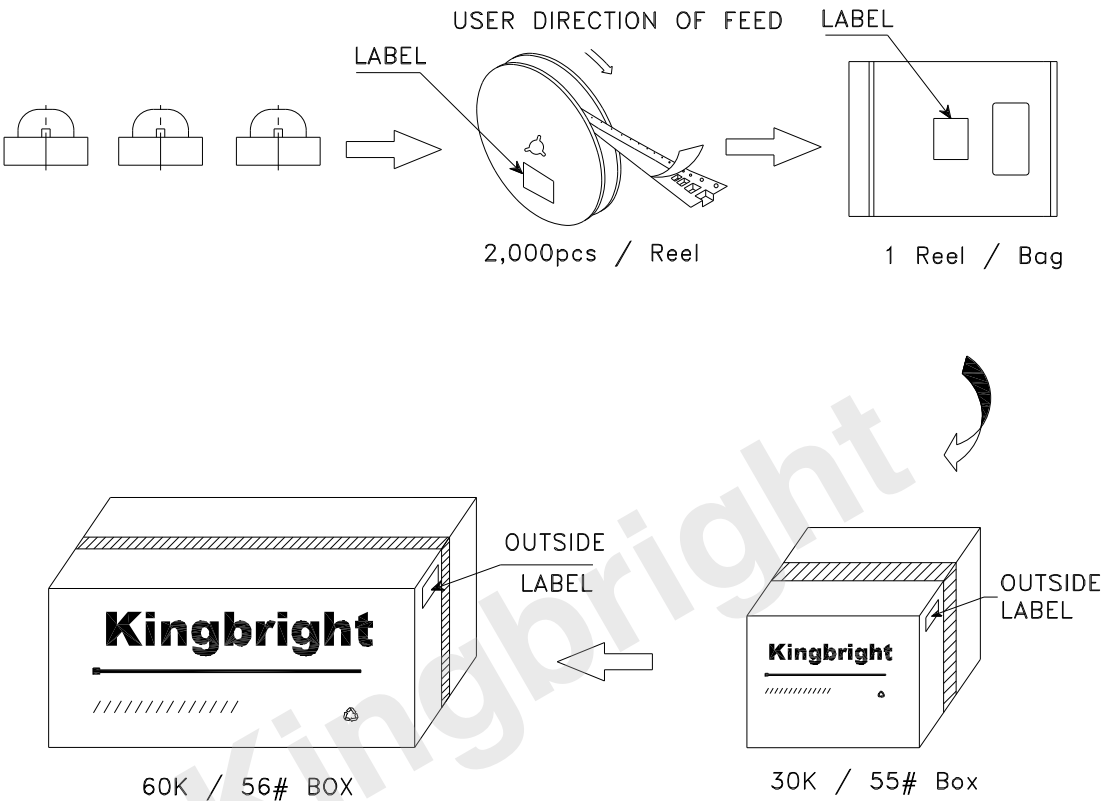



## Tape Specifications (Units : mm)



PACKING & LABEL SPECIFICATIONS

KPA-3010P3C



<b>Kingbright</b>	
P/NO: KPA-3010XXX	
QTY: 2,000 pcs	Q.C. <div>Q C xx xx xxxx PASSED</div>
S/N: XXXX	
CODE: XXX	
LOT NO:	
 xxxxxxxxxxxxxxxxxxxxxxxx	
RoHS Compliant	

Detailed application notes are listed on our website.  
[http://www.kingbright.com/application\\_notes](http://www.kingbright.com/application_notes)