Kingbright

2.0x1.25mm PHOTOTRANSISTOR

Part Number: KP-2012P3C

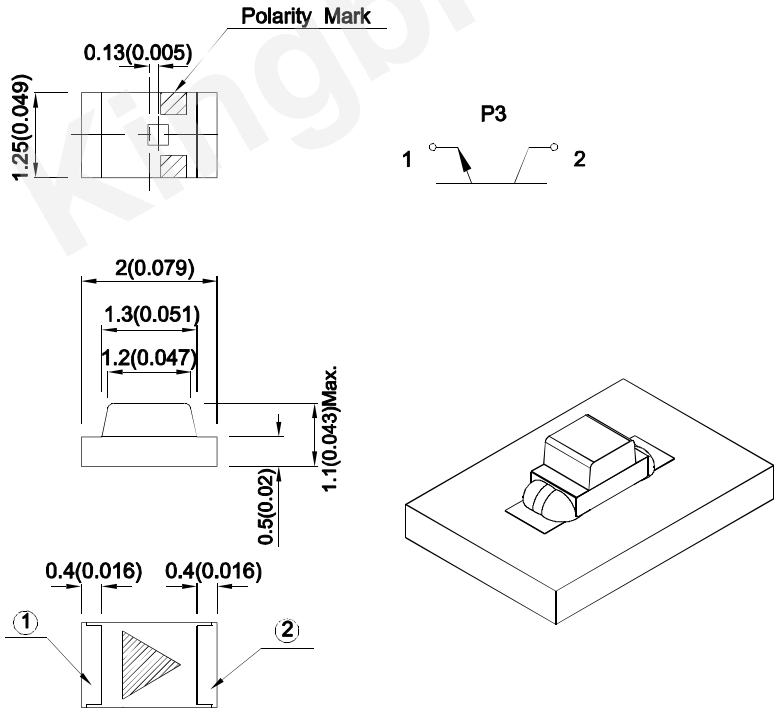
Features

- 2.0mmx1.25mm SMD LED,1.1mm thickness.
- Mechanically and spectrally matched to the infrared emitting LED lamp.
- Package : 2000pcs / reel.
- Moisture sensitivity level : level 3.
- RoHS compliant.

Description

Made with NPN silicon phototransistor chips.

Package Dimensions



Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.1(0.004") 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
$V_{BR\ CEO}$	Collector-to-Emitter Breakdown Voltage	30			V	I_C=100uA Ee=0mW/c㎡
$V_{BR\ ECO}$	Emitter-to-Collector Breakdown Voltage	5			V	I_E=100uA Ee=0mW/c㎡
$V_{CE\ (SAT)}$	Collector-to-Emitter Saturation Voltage			0.8	V	I_C=2mA Ee=20mW/c㎡
I_{CEO}	Collector Dark Current			100	nA	V_{CE}=10V Ee=0mW/c㎡
T_R	Rise Time (10% to 90%)		15		us	V_{CE} = 5V I_C=1mA R_L=1000Ω
T_F	Fall Time (90% to 10%)		15		us	
$I_{(ON)}$	On State Collector Current	0.2	0.4		mA	V_{CE} = 5V Ee=1mW/c㎡ 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

Note:
1. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

Typical Electro-Optical Characteristics Curves

Fig.1 Collector Power Dissipation vs. Ambient Temperature

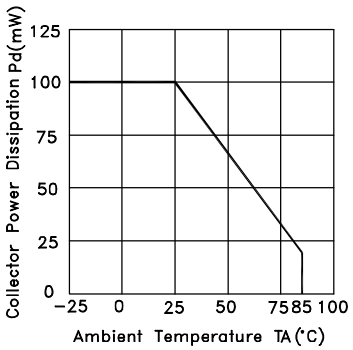


Fig.2 Spectral Sensitivity

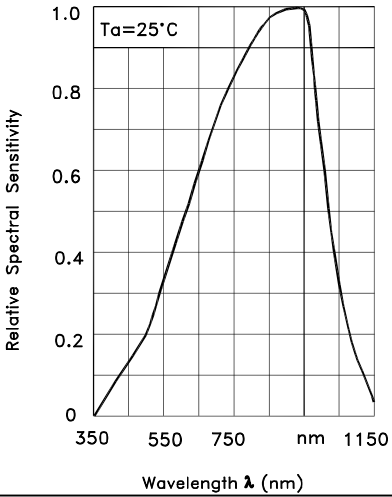


Fig.3 Relative Collector Current vs. Ambient Temperature

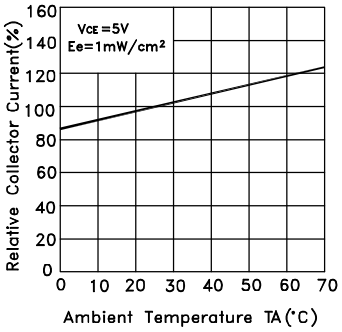


Fig.4 Collector Current Ic=f(Ec),Vce=5V, Ta=25°C

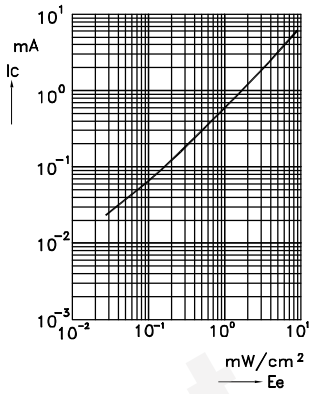


Fig.5 Collector Dark Current vs. Ambient Temperature

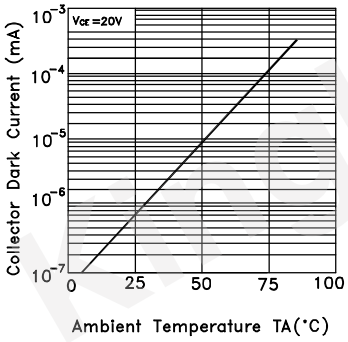


Fig.6 Collector Current vs. Collector-Emitter Voltage

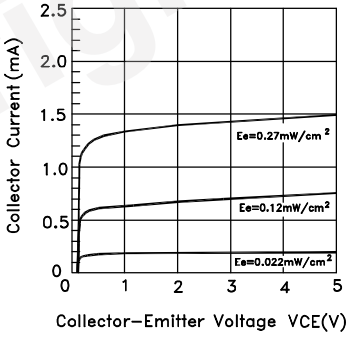
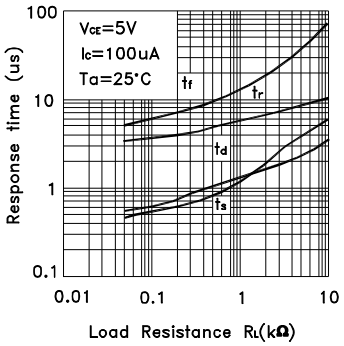
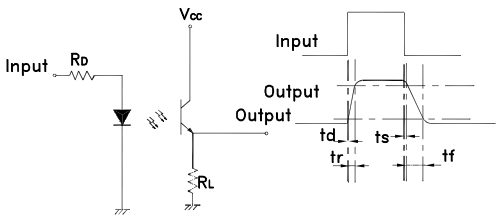


Fig.7 Response Time vs. Load Resistance



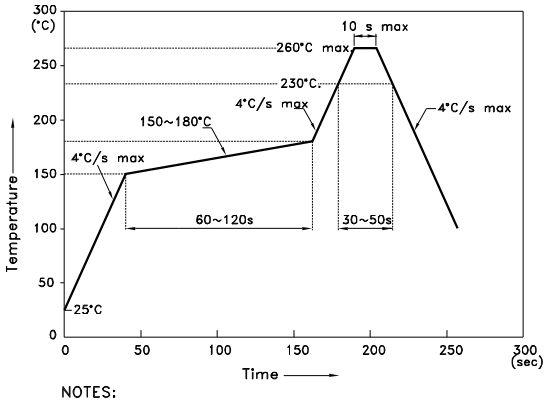
Test Circuit for Response Time



KP-2012P3C

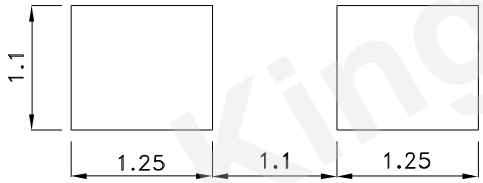
Reflow soldering is recommended and the soldering profile is shown below.
Other soldering methods are not recommended as they might cause damage to the product.

Reflow Soldering Profile For Lead-free SMT Process.

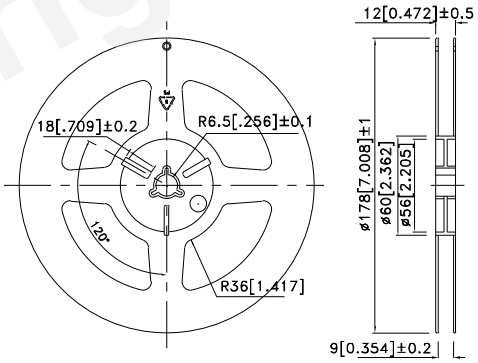


NOTES:
1. We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

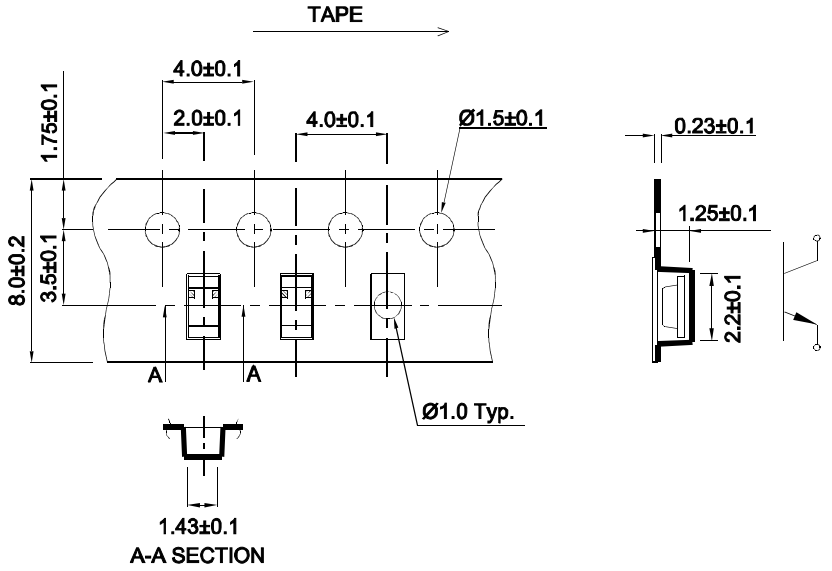
Recommended Soldering Pattern
(Units : mm; Tolerance: ± 0.1)



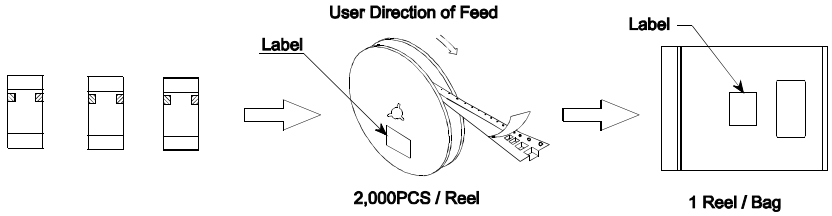
Reel Dimension

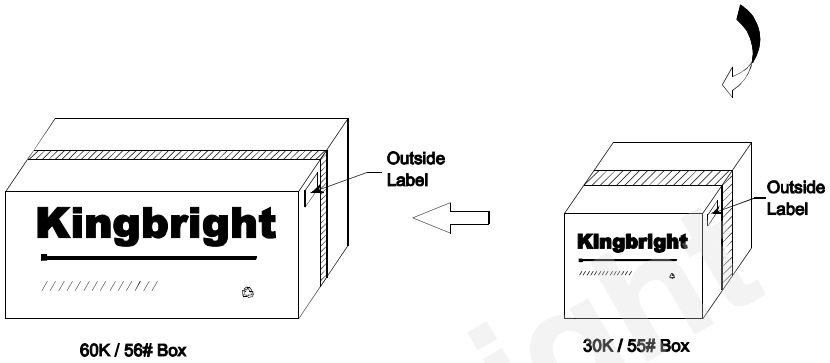


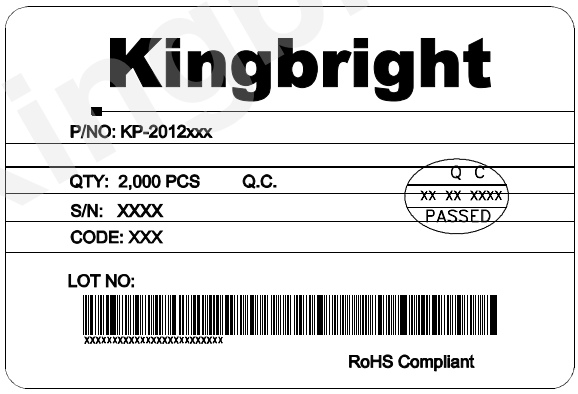
Tape Specifications
(Units : mm)



PACKING & LABEL SPECIFICATIONS KP-2012P3C







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