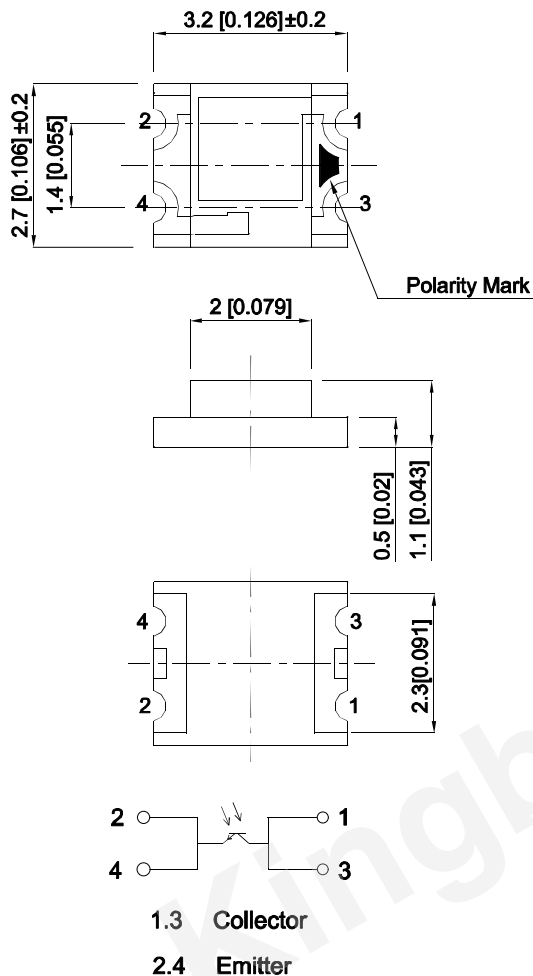


Package Dimensions



Part Number: KPS-3227SP1C

Description

The KPS-3227SP1C is a NPN silicon phototransistor, It is a good effective solution to the power saving of display backlighting appliances and the device is sensitive to the visible spectrum.

Features

- *Lead-free package.
- *Component in accordance with RoHS.
- *Adapted to human eye responsive.
- *Wide angle of half sensitivity.
- *Moisture sensitivity level : level 3.
- * Package:2000 pcs/ Reel.

Applications

Detection of ambient light to control display backlighting in:

- *Mobile phones
- *PDAs
- *Note books
- *Video cameras

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.



*Absolute Maximum Ratings(Ta=25°C)

| Parameter | Symbol | Rating | Unit | Notice |
|---------------------------|-----------|------------|------|--------------------|
| Collector Emitter Voltage | V_{ce0} | 60 | V | $I_{ce0}=100\mu A$ |
| Emitter-Collector Voltage | V_{eco} | 4 | V | $I_{eco}=100\mu A$ |
| Operating Temperature | T_{opr} | -40 to +85 | °C | - |
| Storage Temperature | T_{stg} | -40 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.

*Electrical and Optical Characteristics (Ta=25°C)

| Parameter | Symbol | Value | | | Unit | Conditions |
|--------------------------------------|-----------------------|-------|------|------|------|--|
| | | Min. | TYP. | Max. | | |
| Collector Emitter Breakdown Voltage | BVceo | 60 | - | - | V | I _{ceo} =100μA |
| Emitter Collector Breakdown Voltage | BVeco | 4 | - | - | V | I _{eco} =100μA |
| Collector dark current | I _D | - | 10 | 100 | nA | V _{CE} =5V E _V =0Lx |
| Light Current(1) | I _{PH1} | - | 6 | - | μA | V _{CE} =5V, E _V =100 Lx ^[1] |
| Light Current(2) | I _{PH2} | - | 130 | - | μA | V _{CE} =5V, E _V =1000 Lx ^[1] |
| Light Current(3) | I _{PH3} | - | 950 | - | μA | V _{CE} =5V, E _V =1000 Lx ^[2] |
| Light Current(4) | I _{PH4} | - | 420 | - | μA | V _{CE} =5V, E _V =1000 Lx ^[3] |
| Saturation Output Voltage | V _O | 4.5 | 4.7 | - | V | V _{CC} =5V, E _V =1000Lx ^[1] , R _L =75KΩ |
| Peak Wavelength | λ _P | - | 580 | - | nm | - |
| Response Wavelength | λ | 390 | - | 700 | nm | >10% Response |
| Collector Emitter Saturation Voltage | V _{CE (sat)} | - | - | 0.4 | V | I _C =10 mA |

Notes:

1. White Fluorescent light (Color Temperature = 6200K) is used as light source.
2. Luminance by CIE standard illuminant-A/2856K, incandescent lamp.
3. Sunlight (Color Temperature = 4600K) is used as light source.
4. Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

Fig.1 Illuminance vs. Output Photocurrent

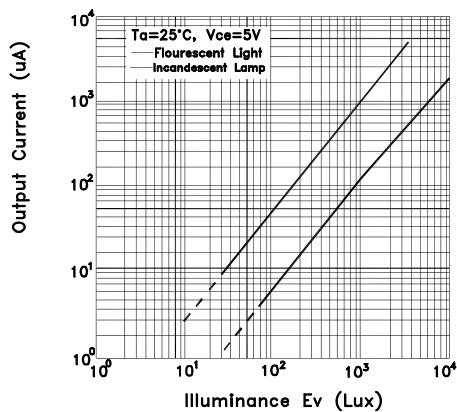
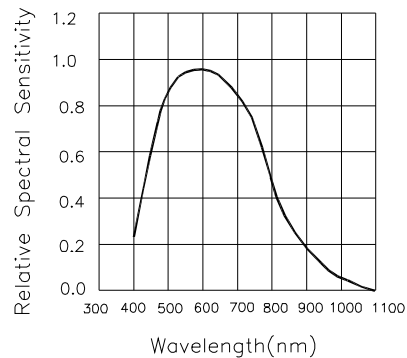
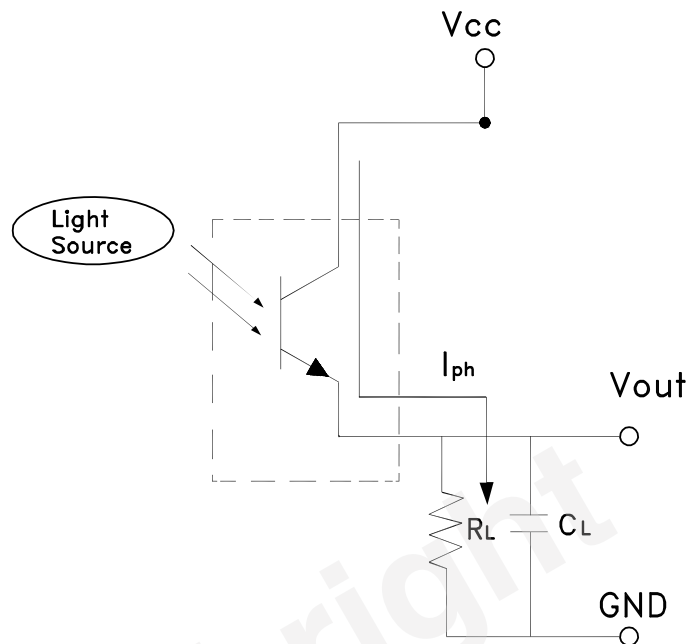


Fig.2 Relative Spectral Responsivity vs. Wavelength



Converting Photocurrent to Voltage



Notes:

- 1.The output voltage (V_{out}) is the product of photocurrent (I_{PH}) and loading resistor (R_L)
- 2.A right loading resistor shall be chosen to meet the requirement of maximum ambient light, and output saturation voltage:

$$V_{out(max)} = I_{out(max)} \times R_L \leq V_{out(saturation)} = V_{cc} - 0.3V$$

KPS-3227SP1C

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.

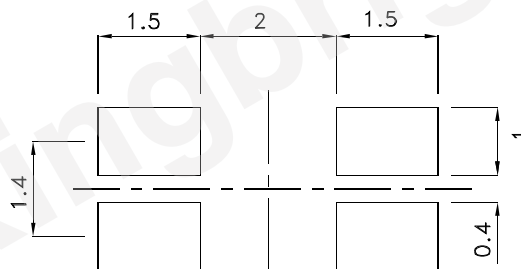
Reflow Soldering Profile For Lead-free SMT Process.



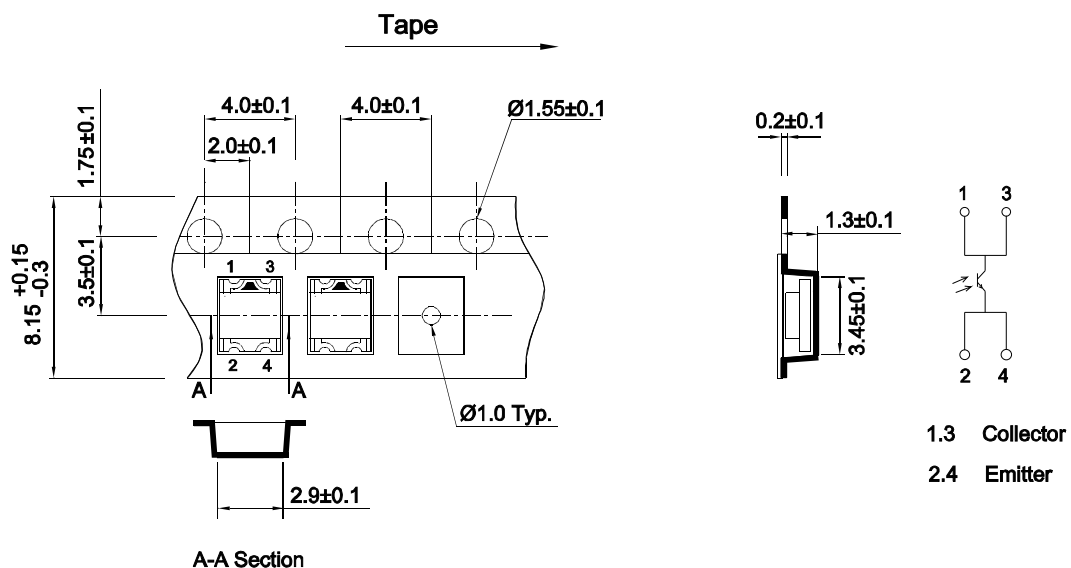
NOTES:

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)

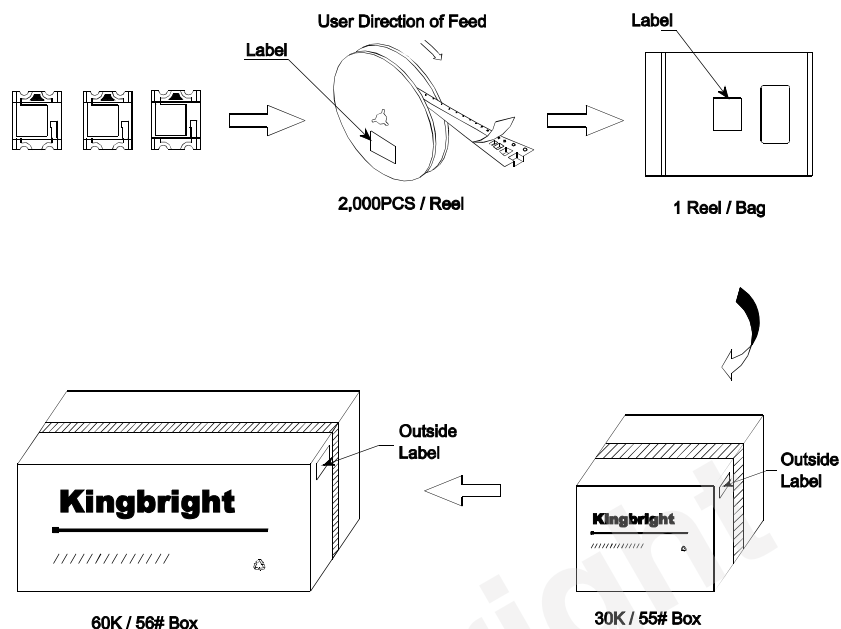



Tape Specifications (Units : mm)



PACKING & LABEL SPECIFICATIONS

KPS-3227SP1C



| | | |
|---|------|---------------------------|
| Kingbright | | |
| P/NO: KPS-3227xxx | | |
| QTY: 2,000 PCS | Q.C. | Q.C. xxxxxxx PASSED |
| S/N: XXXX | | |
| CODE: XXX | | |
| LOT NO: | | |
|  | | |
| RoHS Compliant | | |

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