

Si photodiode

S16495



Photodiode with a filter for monochromatic light (310 nm) detection

This is a compact, surface-mount type photodiode with a center wavelength sensitivity at 310 nm, including a band-pass filter. The spectral response half width (FWHM) is extremely narrow, allowing accurate photometry with little stray light.

Features

- ➔ With monochromatic light filter
- ➔ Surface mount type
- ➔ Compact and thin leadless ceramic package

Applications

- ➔ Hydrogen flame detection
- ➔ UVB monitor, etc.

Absolute maximum ratings

| Parameter | Symbol | Condition | Value | Unit |
|-----------------------|---------------------|-----------------------|-----------------|------|
| Reverse voltage | V _R max. | | 5 | V |
| Operating temperature | T _{opr} | No dew condensation*1 | -25 to +85 | °C |
| Storage temperature | T _{stg} | No dew condensation*1 | -40 to +100 | °C |
| Soldering temperature | T _{sol} | | 260 (3 times)*2 | °C |

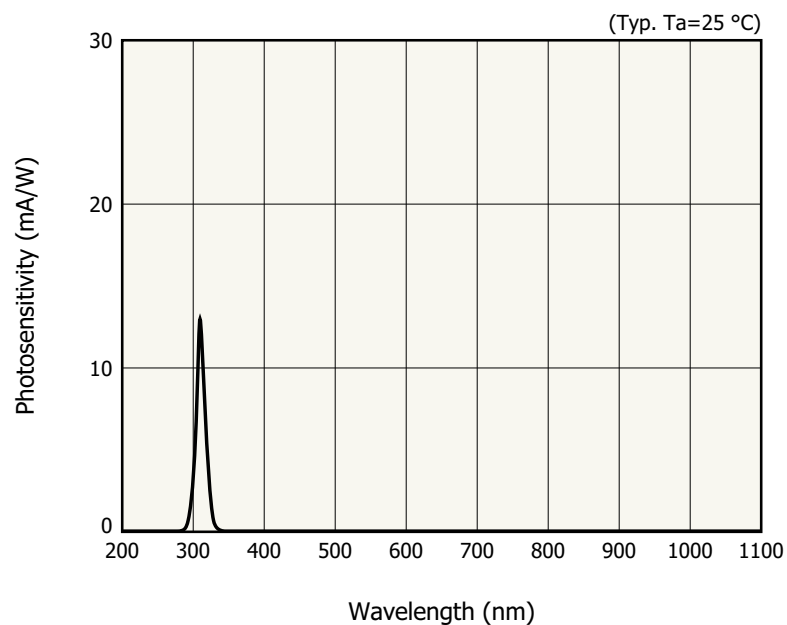
Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

*1: When there is a temperature difference between a product and the surrounding area in high humidity environments, dew condensation may occur on the product surface. Dew condensation on the product may cause deterioration in characteristics and reliability.

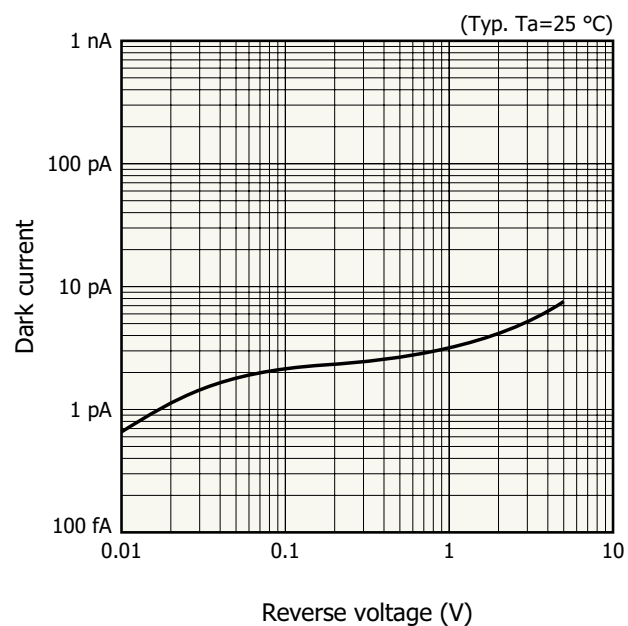
*2: Reflow soldering, JEDEC J-STD-020 MSL 3, see P.3

Electrical and optical characteristics (T_a=25 °C)

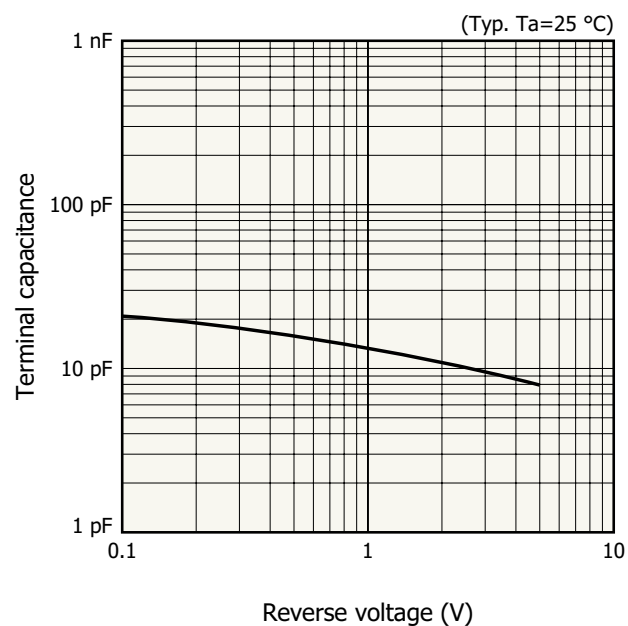
| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|--------------------------------------|------------------|---|------|------|------|----------|
| Center wavelength | CWL | | 304 | 310 | 316 | nm |
| Spectral response half width | FWHM | | 10 | 15 | 20 | nm |
| Photosensitivity | S | λ=310 nm | 7 | 13 | - | mA/W |
| Dark current | I _D | V _R =10 mV | - | 1 | 10 | pA |
| Dark current temperature coefficient | T _{CID} | | - | 1.12 | - | times/°C |
| Rise time | t _r | V _R =0 V, R _L =1 kΩ 10 % to 90 % | - | 0.1 | - | μs |
| Terminal capacitance | C _t | V _R =0 V, f=10 kHz | - | 25 | 35 | pF |

Spectral response

KSPDB0454EA

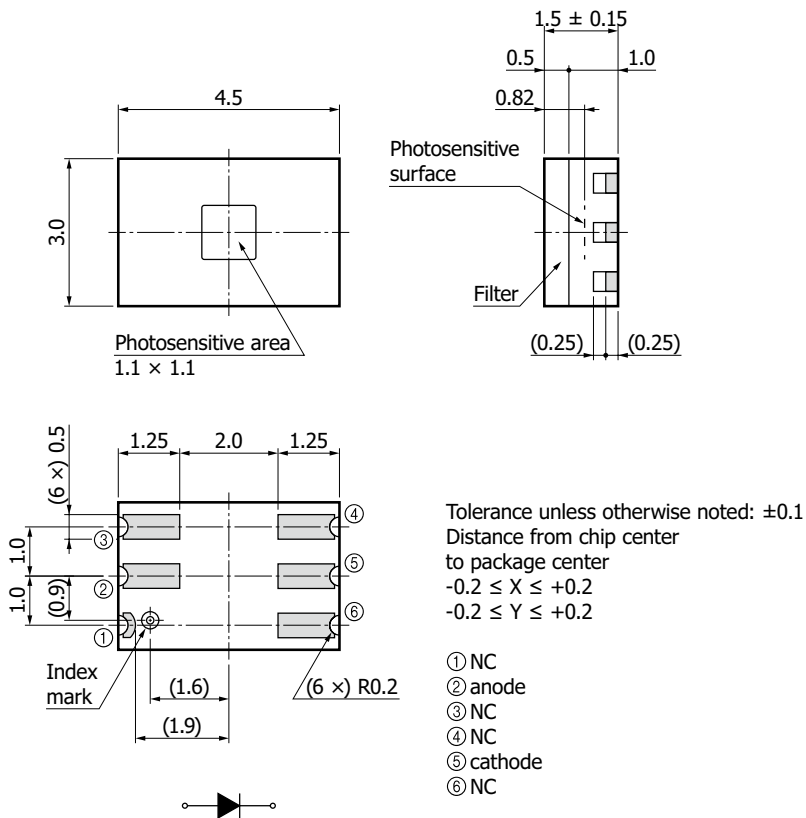
Dark current vs. reverse voltage

KSPDB0456EA

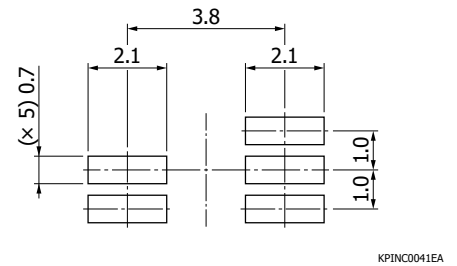
Terminal capacitance vs. reverse voltage

KSPDB0457EA

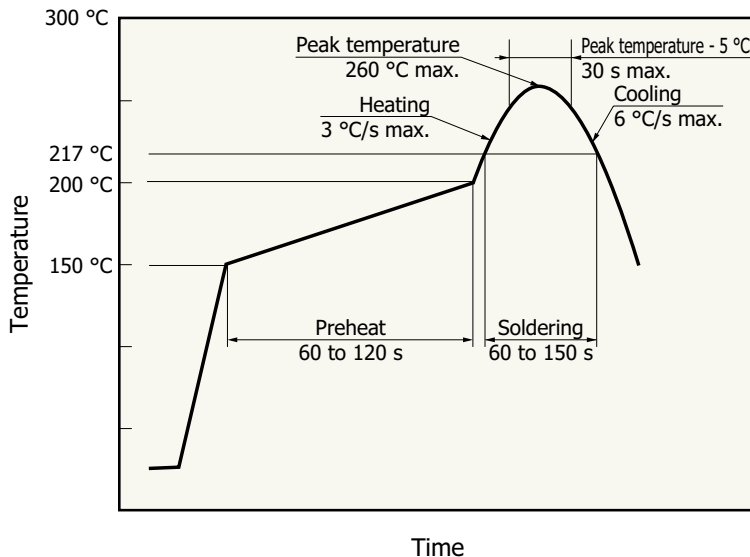
Dimensional outline (unit: mm)



Recommended land pattern (unit: mm)



Recommended reflow soldering conditions



- After unpacking, store in an environment at a temperature of 30 °C or less and a humidity of 60 % or less, and perform reflow soldering within 168 hours.
- The effect that the product receives during reflow soldering varies depending on the circuit board and reflow oven that are used. When you set reflow soldering conditions, check that problems do not occur in the product by testing out the conditions in advance.

Precautions against UV light exposure

- When UV light irradiation is applied, the product characteristics may degrade. Such examples include degradation of the product's UV sensitivity and increase in dark current. This phenomenon varies depending on the irradiation level, irradiation intensity, usage time, and ambient environment and also varies depending on the product model. Before employing the product, we recommend that you check the tolerance under the ultraviolet light environment that the product will be used in.
- Exposure to UV light may cause the characteristics to degrade due to gas released from the resin bonding the product's component materials. As such, we recommend that you avoid applying UV light directly on the resin and apply it on only the inside of the photosensitive area by using an aperture or the like.

Related information

www.hamamatsu.com/sp/ssd/doc_en.html

■ Precautions

- Disclaimer
- Precautions / Surface mount type products

■ Catalog

- Technical note / Si photodiode

The content of this document is current as of July 2025.

Product specifications are subject to change without prior notice due to improvements or other reasons. This document has been carefully prepared and the information contained is believed to be accurate. In rare cases, however, there may be inaccuracies such as text errors. Before using these products, always contact us for the delivery specification sheet to check the latest specifications.

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