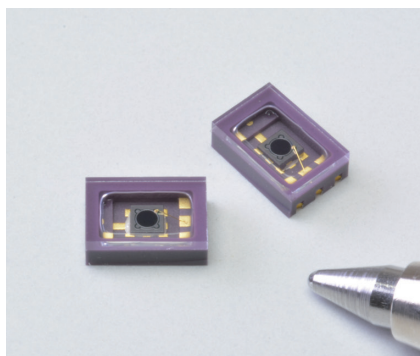


Si PIN photodiode

S13337-01



Si PIN photodiode for UV to near infrared region

The S13337-01 is a surface mount type Si PIN photodiode in a ceramic package with glass. This achieves high-speed response in the UV to near infrared region.

Features

- High-speed response
- Surface mount type, compact, chip carrier package
- Compatible with lead-free reflow soldering

Applications

- LD monitor
- Optical measurement equipment

Structure

Parameter	Specification	Unit
Photosensitive area	φ0.8	mm
Package	Ceramic	-
Window material	Borosilicate glass	-

Absolute maximum ratings (Ta=25 °C)

Parameter	Symbol	Condition	Value	Unit
Reverse voltage	V _R		20	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}		240 (3 times)*2	°C

*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 surface may cause deterioration in characteristics and reliability.

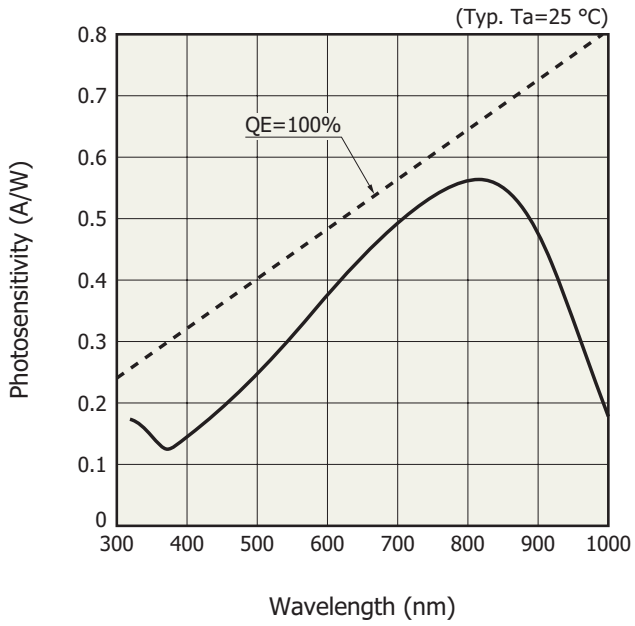
*2: Reflow soldering, JEDEC J-STD-020 MSL 2, see P.4

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.

Electrical and optical characteristics (Ta=25 °C)

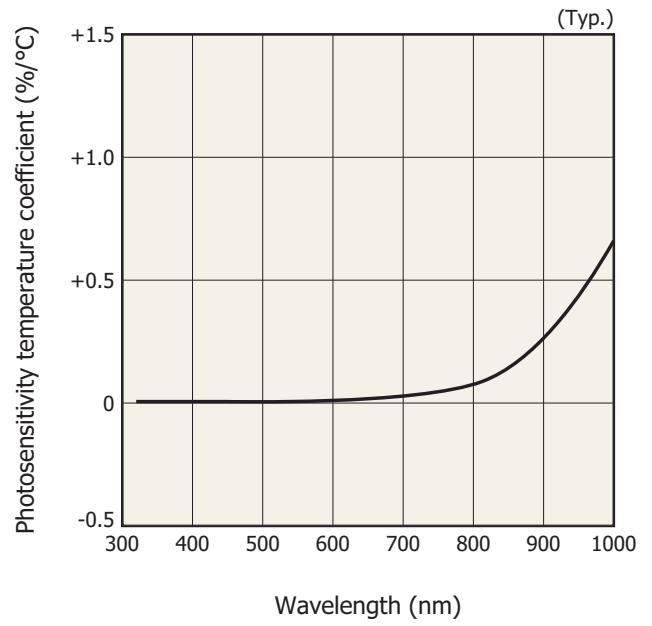
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	λ		-	320 to 1000	-	nm
Peak sensitivity wavelength	λ _p		-	800	-	nm
Photosensitivity	S	λ=λ _p	500	570	-	mA/W
Dark current	I _D	V _R =10 V	-	3	500	pA
Temperature coefficient of I _D	I _{CID}		-	1.15	-	times/°C
Cutoff frequency	f _c	V _R =10 V, R _L =50 Ω λ=830 nm, -3 dB	-	500	-	MHz
Terminal capacitance	C _t	V _R =10 V, f=1 MHz	-	3	-	pF
Noise equivalent power	NEP	V _R =10 V, λ=λ _p	-	3.1 × 10 ⁻¹⁵	-	W/Hz ^{1/2}

Spectral response



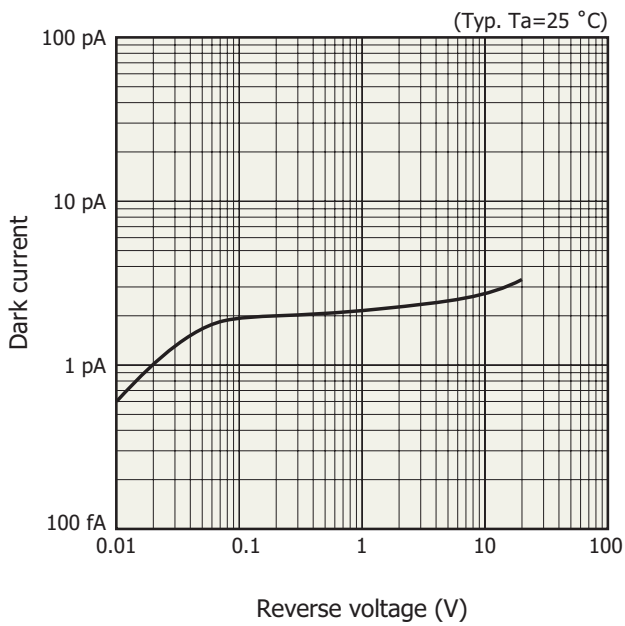
KPINB0453EA

Photosensitivity temperature characteristics



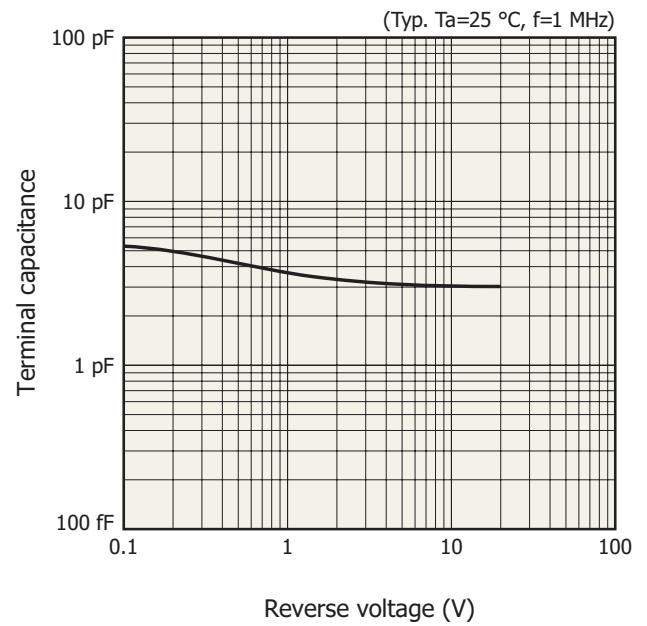
KPINB0454EA

Dark current vs. reverse voltage



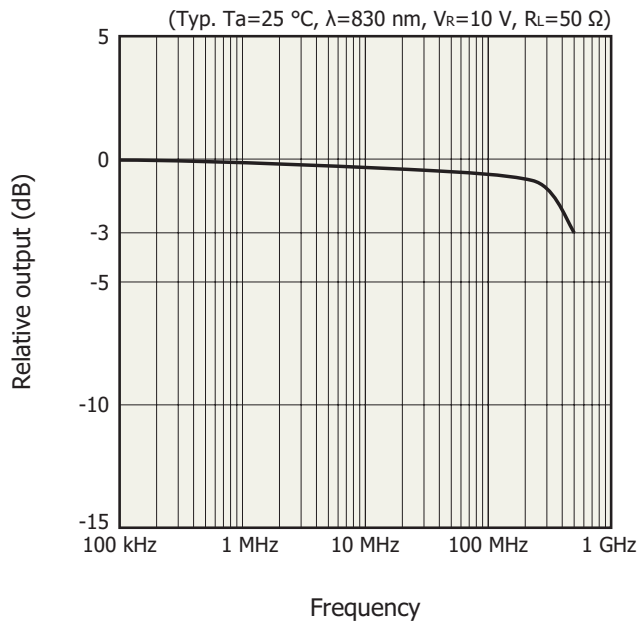
KPINB0455EA

Terminal capacitance vs. reverse voltage

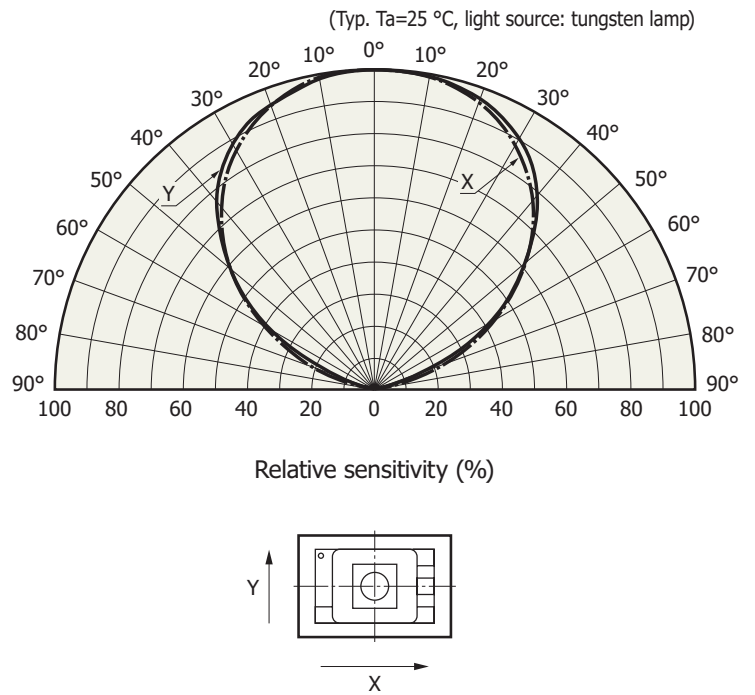


KPINB0456EA

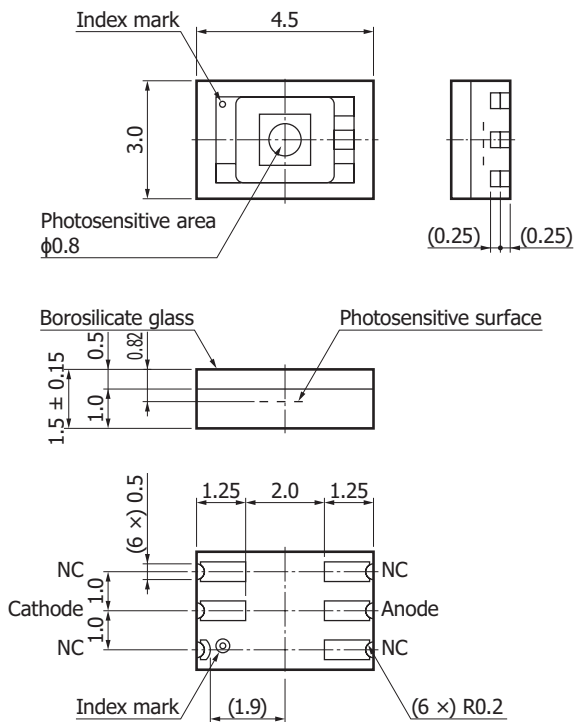
Frequency response



Directivity



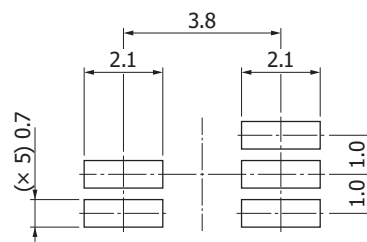
Dimensional outline (unit: mm)



Tolerance unless otherwise noted: ± 0.1
 Chip position accuracy with respect to package center
 $-0.2 \leq X \leq +0.2$
 $-0.2 \leq Y \leq +0.2$

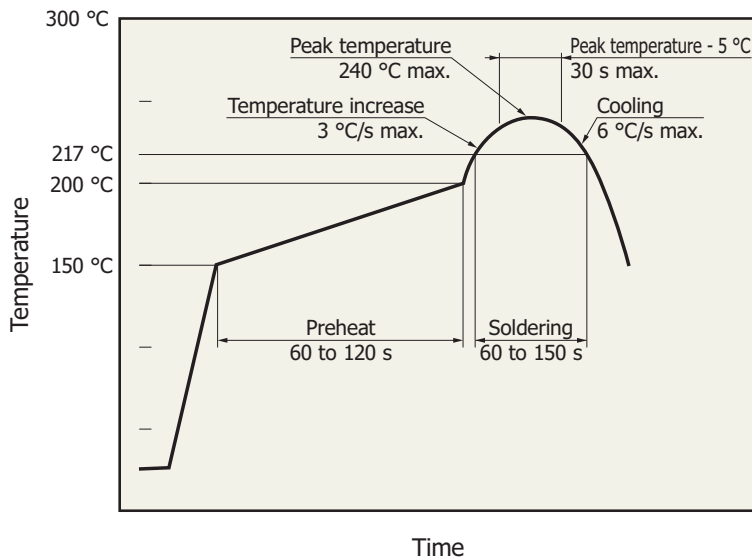
KPINA0127EA

Recommended land pattern (unit: mm)



KPINC0041EA

Recommended reflow soldering conditions



- After unpacking, store the device in an environment at a temperature of 30 °C or less and a humidity of 60% or less, and perform reflow soldering within 1 year.
- The effect that the product receives during reflow soldering varies depending on the circuit board and the 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.

KSPDB0400EB

Related information

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

Precautions

- Disclaimer
- Surface mount type products

Technical information

- Si photodiodes / Technical note

Information described in this material is current as of March 2021.

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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