

# Si PIN photodiode



S12109-32

## Multimode optical fiber compatible, receptacle type

This high-speed photosensor was developed for optical fiber communication in the 0.85  $\mu\text{m}$  band. This receptacle type Si PIN photodiode is compatible with GI-50 multimode optical fiber.

### Features

- High-speed response: 1 GHz typ.
- GI-50 multimode optical fiber compatible

### Applications

- Optical fiber communications
- Optical measurement

### Absolute maximum ratings

Parameter	Symbol	Condition	Value	Unit
Reverse voltage	$V_R$ max	$T_a=25\text{ }^\circ\text{C}$	20	V
Operating temperature	$T_{opr}$	No dew condensation*1	-20 to +70	$^\circ\text{C}$
Storage temperature	$T_{stg}$	No dew condensation*1	-40 to +85	$^\circ\text{C}$

\*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 may cause deterioration in characteristics and reliability.

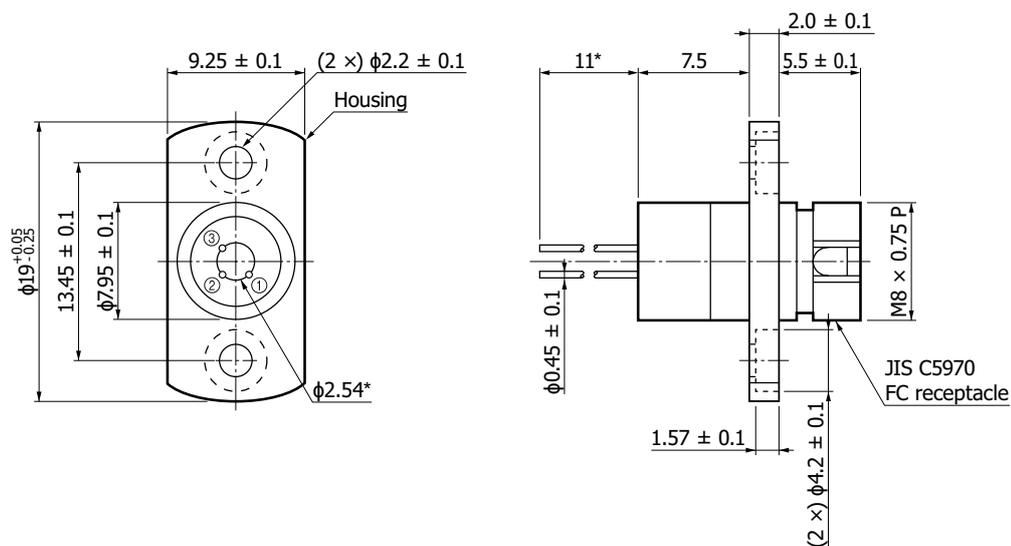
Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

### Electrical and optical characteristics ( $T_a=25\text{ }^\circ\text{C}$ , unless otherwise noted)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	$\lambda$			320 to 1000		nm
Peak sensitivity wavelength	$\lambda_p$		-	760	-	nm
Photosensitivity*2	S	$\lambda=850\text{ nm}$ , $V_R=3.3\text{ V}$	0.25	0.42	-	A/W
Dark current	$I_D$	Dark state, $V_R=3.3\text{ V}$	-	1	100	pA
Cutoff frequency	$f_c$	$V_R=3.3\text{ V}$ , $R_L=50\ \Omega$ $\lambda=850\text{ nm}$ , -3 dB	-	1	-	GHz
Terminal capacitance	$C_t$	$V_R=3.3\text{ V}$ , $f=1\text{ MHz}$ Case: GND	-	1.6	-	pF

\*2: Using a GI-50 multimode optical fiber

### Dimensional outline (unit: mm)



Tolerance unless otherwise noted:  $\pm 0.2$

\* Reference values

KPINA0129EA

### Pin connections

Pin no.	Connection
①	Cathode
②	Case* <sup>3</sup>
③	Anode

\*3: It is not connected to the housing.

### Recommended soldering conditions

Soldering temperature: 260 °C (within 10 seconds)

Note: When you set soldering conditions, check that problems do not occur in the product by testing out the conditions in advance.

## Related information

[www.hamamatsu.com/sp/ssd/doc\\_en.html](http://www.hamamatsu.com/sp/ssd/doc_en.html)

### ■ Precautions

- Disclaimer
- Safety consideration
- Metal, ceramic, plastic package products

### ■ Technical note

- Si photodiodes

The content of this document is current as of June 2023.

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