

# InGaAs PIN photodiode

G14942-32



## Angled PC compatible, receptacle type

This is a high-speed photosensor developed for Doppler LiDAR. This is a receptacle type compatible with FC/Angled PC, and has a built-in high-speed InGaAs PIN photodiode.

### Features

- High-speed response: 2 GHz typ.
- Low dark current: 20 pA typ.
- FC/Angled PC compatible

### Applications

- Optical measurement including LiDAR
- Optical fiber communications

### 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	$^\circ\text{C}$
Incident light level	Pin	$\lambda=\lambda_p$	10	mW

\*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.

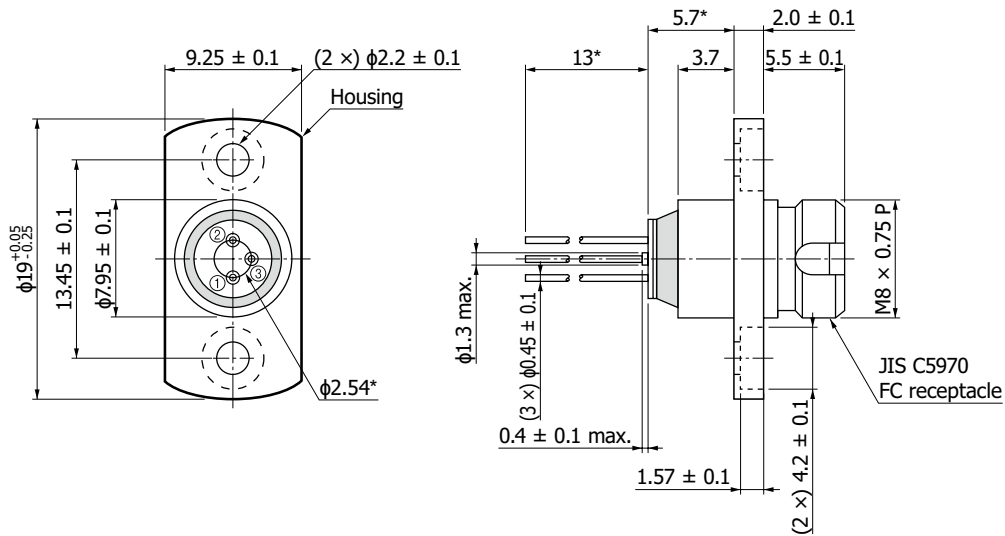
### Electrical and optical characteristics ( $T_a=25\text{ }^\circ\text{C}$ , unless otherwise noted)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	$\lambda$			0.9 to 1.7		$\mu\text{m}$
Peak sensitivity wavelength	$\lambda_p$		-	1.55	-	$\mu\text{m}$
Photosensitivity*2	S	$\lambda=\lambda_p$ , $V_R=5\text{ V}$	0.8	0.95	-	A/W
Dark current	$I_D$	Dark state, $V_R=5\text{ V}$	-	0.02	0.4	nA
Cutoff frequency	$f_c$	$V_R=5\text{ V}$ , $R_L=50\ \Omega$ $\lambda=\lambda_p$ , -3 dB	-	2	-	GHz
Terminal capacitance	$C_t$	$V_R=5\text{ V}$ , $f=1\text{ MHz}$ Case: GND	-	1	1.5	pF
Optical return loss*2	ORL	$\lambda=1.31/1.55\ \mu\text{m}$	27	35	-	dB

\*2: Using a single-mode optical fiber with an FC/Angled PC type master plug

The G14942-32 may be damaged or deteriorated by static electricity. Use caution when handling.

**Dimensional outline (unit: mm)**



Tolerance unless otherwise noted:  $\pm 0.2$

\* Reference values

KIRDA0283EA

**Pin connections**

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

\*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
- Compound opto-semiconductors (photosensors, light emitters)

### ■ Technical note

- Compound semiconductor photosensors

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

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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