

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.

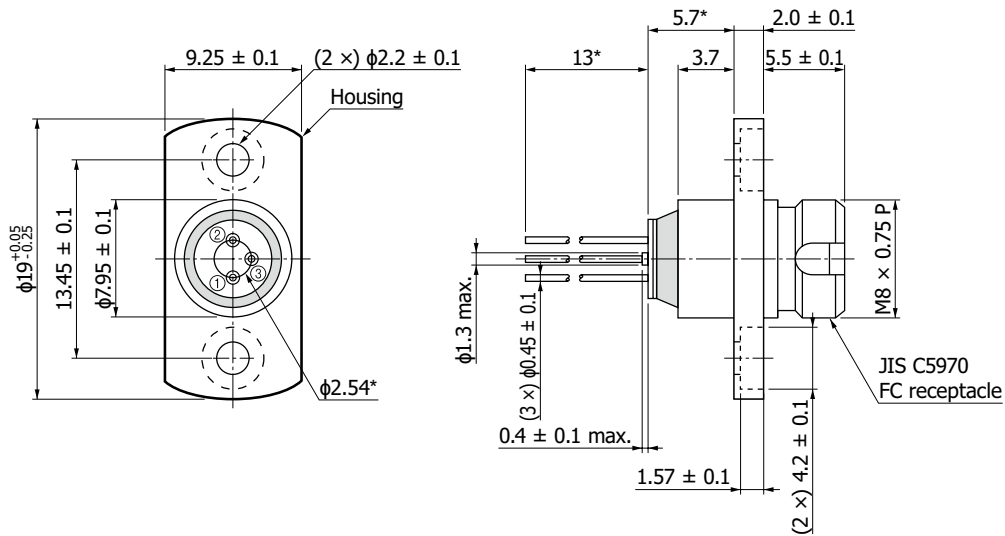
Electrical and optical characteristics ($T_a=25\text{ }^\circ\text{C}$, unless otherwise noted)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	λ			0.9 to 1.7		μm
Peak sensitivity wavelength	λ_p		-	1.55	-	μm
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: ± 0.2

* Reference values

KIRDA0283EA

Pin connections

Pin no.	Connection
①	Case*3
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

■ 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 May 2022.

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.

The product warranty is valid for one year after delivery and is limited to product repair or replacement for defects discovered and reported to us within that one year period. However, even if within the warranty period we accept absolutely no liability for any loss caused by natural disasters or improper product use. Copying or reprinting the contents described in this material in whole or in part is prohibited without our prior permission.

HAMAMATSU

www.hamamatsu.com

HAMAMATSU PHOTONICS K.K., Solid State Division

1126-1 Ichino-cho, Higashi-ku, Hamamatsu City, 435-8558 Japan, Telephone: (81)53-434-3311, Fax: (81)53-434-5184

U.S.A.: HAMAMATSU CORPORATION: 360 Foothill Road, Bridgewater, NJ 08807, U.S.A., Telephone: (1)908-231-0960, Fax: (1)908-231-1218 E-mail: usa@hamamatsu.com

Germany: HAMAMATSU PHOTONICS DEUTSCHLAND GMBH.: Arzbergerstr. 10, 82211 Herrsching am Ammersee, Germany, Telephone: (49)8152-375-0, Fax: (49)8152-265-8 E-mail: info@hamamatsu.de

France: HAMAMATSU PHOTONICS FRANCE S.A.R.L.: 19, Rue du Saule Trapu, Parc du Moulin de Massy, 91882 Massy Cedex, France, Telephone: (33)1 69 53 71 00, Fax: (33)1 69 53 71 10 E-mail: infos@hamamatsu.fr

United Kingdom: HAMAMATSU PHOTONICS UK LIMITED: 2 Howard Court, 10 Tewin Road, Welwyn Garden City, Hertfordshire AL7 1BW, UK, Telephone: (44)1707-294888, Fax: (44)1707-325777 E-mail: info@hamamatsu.co.uk

North Europe: HAMAMATSU PHOTONICS NORDEN AB: Torshamnsgatan 35 16440 Kista, Sweden, Telephone: (46)8-509 031 00, Fax: (46)8-509 031 01 E-mail: info@hamamatsu.se

Italy: HAMAMATSU PHOTONICS ITALIA S.R.L.: Strada della Moia, 1 int. 6, 20044 Arese (Milano), Italy, Telephone: (39)02-93 58 17 33, Fax: (39)02-93 58 17 41 E-mail: info@hamamatsu.it

China: HAMAMATSU PHOTONICS (CHINA) CO., LTD.: 1201 Tower B, Jiaming Center, 27 Dongsanhuan Beilu, Chaoyang District, 100020 Beijing, P.R. China, Telephone: (86)10-6586-6006, Fax: (86)10-6586-2866 E-mail: hpc@hamamatsu.com.cn

Taiwan: HAMAMATSU PHOTONICS TAIWAN CO., LTD.: 8F-3, No.158, Section 2, Gongdao 5th Road, East District, Hsinchu, 300, Taiwan R.O.C. Telephone: (886)3-659-0080, Fax: (886)3-659-0081 E-mail: info@hamamatsu.com.tw