

# InGaAs PIN photodiodes



G9801 series

## Receptacle type, 1.3/1.55 $\mu\text{m}$ , 2 GHz

The G9801 series are high-speed receivers specifically developed for 1.3/1.55  $\mu\text{m}$  band power monitor in optical fiber communications. These devices incorporate a high-speed, high-sensitivity InGaAs PIN photodiode integrated in a receptacle module. Packages are available with various connectors and mount types.

### Features

- High-speed response: 2 GHz typ.
- Low dark current: 20 pA typ.
- High sensitivity: 0.9 A/W typ. ( $\lambda=1.31 \mu\text{m}$ )
- Low terminal capacitance: 1 pF typ.

### Applications

- Power monitor in optical fiber communications

### Absolute maximum ratings ( $T_a=25 \text{ }^\circ\text{C}$ )

Parameter	Symbol	Condition	Value	Unit
Reverse voltage	$V_R \text{ max}$		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 environment, 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 ( $T_a=25 \text{ }^\circ\text{C}$ )

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	-	$\mu\text{m}$
Photo sensitivity	$S^{*2}$	$\lambda=1.3 \mu\text{m}$	0.75	0.9	-	A/W
		$\lambda=1.55 \mu\text{m}$	0.8	0.95	-	A/W
Dark current	$I_D$	$V_R=5 \text{ V}$	-	0.02	0.4	nA
Cut-off frequency	$f_c$	$V_R=5 \text{ V}$ , $R_L=50 \Omega$ $\lambda=1.3 \mu\text{m}$ , -3 dB	-	2	-	GHz
Terminal capacitance	$C_t$	$V_R=5 \text{ V}$ , $f=1 \text{ MHz}$	-	1	1.5	pF
Noise equivalent power	NEP	$V_R=5 \text{ V}$ , $\lambda=1.55 \mu\text{m}$	-	$3 \times 10^{-15}$	-	$\text{W/Hz}^{1/2}$

\*2: Using a single mode optical fiber with a master plug

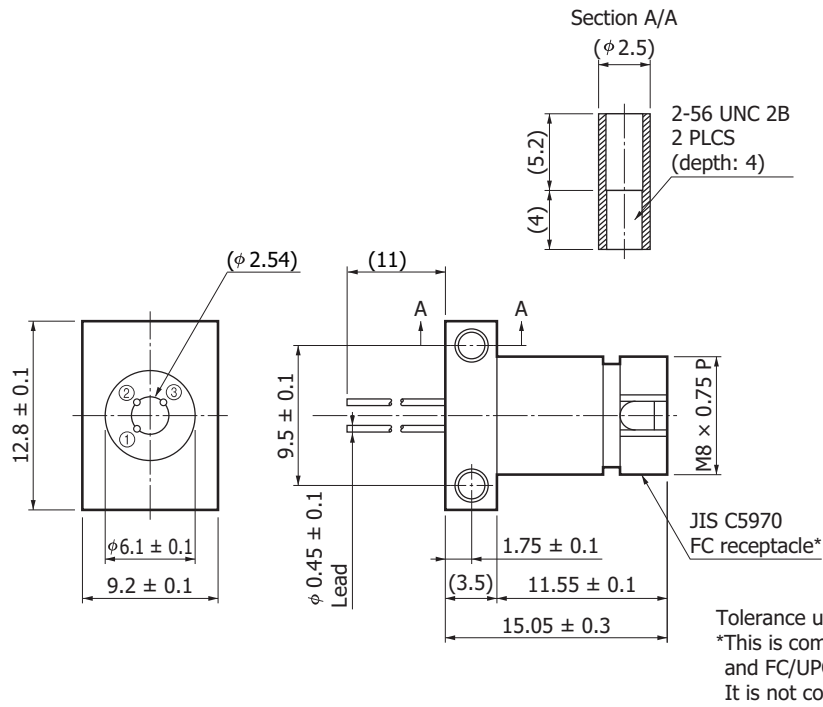
### Package lineup

Parameter	G9801-22	G9801-32
Mount type	Board	Panel
Connector	FC	FC
Dimensional outline	(1)	(2)

The G9801 series may be damaged by electrostatic discharge, etc. Be careful when using the G9801 series.

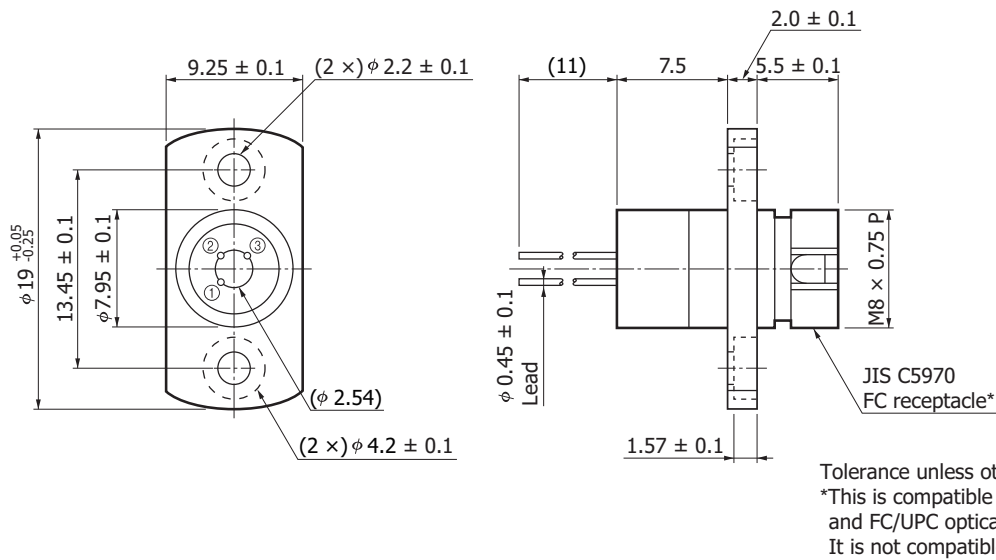
Dimensional outlines (unit: mm)

(1) G9801-22



KIRDA0079EC

(2) G9801-32



KIRDA0080EC

Pin connections

①	Anode
②	Cathode
③	Case

## Related information

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

### ■ Precautions

- Disclaimer
- Metal, ceramic, plastic products

### ■ Technical information

- Infrared detectors

Information described in this material is current as of August, 2015.

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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