

InGaAs PIN photodiodes



G8195 series

Pigtail type, 1.3/1.55 μm , 2 GHz

The G8195 series are high-speed receivers specifically developed for 1.3/1.55 μm band power monitor in optical fiber communications. These devices incorporate a high-speed, high-sensitivity InGaAs PIN photodiode integrated in a pigtail module.

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 capacitance: 1 pF typ.

Applications

- Power monitor in 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	$^\circ\text{C}$

*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 ($T_a=25 \text{ }^\circ\text{C}$)

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
Photo sensitivity*2	S	$\lambda=1.3 \mu\text{m}$	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
Cutoff 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	$V_R=5 \text{ V}$, $\lambda=1.55 \mu\text{m}$	-	3×10^{-15}	-	$\text{W}/\text{Hz}^{1/2}$

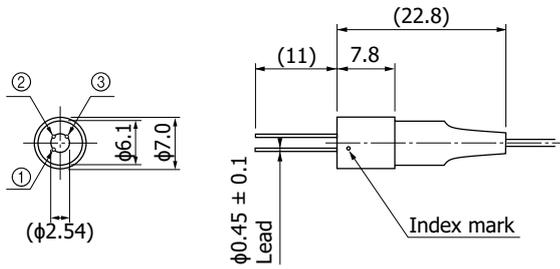
*2: Using a single mode optical fiber with a master plug

Package lineup

Configuration	G8195-11	G8195-12
Mount type	Coaxial	
Fiber	SM (9.5/125) $\phi 0.9 \text{ mm}$, 1 m +20 cm/-0 cm	
Connector	SC	FC

Dimensional outline (unit: mm, tolerance unless otherwise noted: ± 0.2)

Mount type



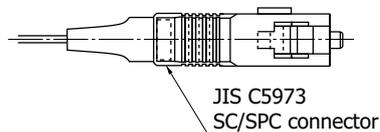
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Pin connections

Pin no.	G8195 series
①	Anode
②	Cathode
③	Case

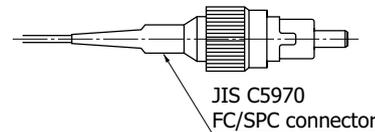
Connector

(1) SC



KIRDA0102EA

(2) FC



KIRDA0103EA

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

Information described in this material is current as of July 2022.

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