

Photosensor amplifier



C8366 series

**Current-to-voltage conversion amplifier
(C8366: for high-speed Si PIN photodiode
C8366-01: for high-speed InGaAs PIN photodiode)**

Features

- **Wide band**
DC to 100 MHz Typ. (-3 dB; varies depending on the photodiode used)
- **Easy photodiode connection**
Just inserting the photodiode lead pins makes the connection. (Compatible with TO-8, TO-5 and TO-18 packages)
- **Adjustable response speed**
Response speed can be adjusted by a trimmer potentiometer easily.
- **Compact size**

Applications

- High-speed photometry
- Laser monitors
- Optical power meters

Absolute maximum ratings (Ta=25 °C unless otherwise noted)

Type no.	Supply voltage Vcc max (V)	Operating temperature Topr*1 (°C)	Storage temperature Tstg*1 (°C)
C8366	±18	0 to +50	-0 to +70
C8366-01			

*1: No dew condensation

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 (Typ. Ta=25 °C, Vcc=±15 V, unless otherwise noted)

Type no.	Operating supply voltage*2 Vcc (V)		Current consumption*3 Icc (mA)	Conversion impedance Rf (V/A)	Frequency bandwidth*4 fc -3 dB (MHz)
	Min.	Max.	Max.		
C8366	±15	±18	±30	1 × 10 ³	100
C8366-01					

*2: Switching power supplies are not supported. Use a series power supply (with 3 mVp-p or less ripple voltage).

Type no.	Maximum output amplitude VFS RL=1 kΩ (V)		Output offset voltage*3 Vos (mV)		Output noise voltage*3 *5 Vn (mVp-p)	Output resistance Zo (Ω)	Photodiode reverse bias voltage VR (V)
	Min.	Typ.	Min.	Max.			
C8366	+3	+3.5	-1	+1	3	50	-12
C8366-01							-1.25

*3: When photodiode is not mounted

*4: C8366 series device

*5: Within frequency band

Connectable Hamamatsu Si PIN photodiodes (sold separately)

■ Si PIN photodiode (for C8366)

Type no.	Spectral response range λ (nm)	Peak sensitivity wavelength λ_p (nm)	Package	Photosensitive area (mm)	Cutoff frequency* ⁶ f_c -3 dB (MHz)
S3071	320 to 1060	920	TO-8	ϕ 5.0	30
S3072			TO-5	ϕ 3.0	40
S3399	320 to 1000	840	TO-5	ϕ 3.0	100
S3883				ϕ 1.5	
S5821 series	320 to 1100	960	TO-18	ϕ 1.2	20
S5971	320 to 1060	900		ϕ 1.2	
S5972	320 to 1000	800		ϕ 0.8	
S5973 series		760		ϕ 0.4	

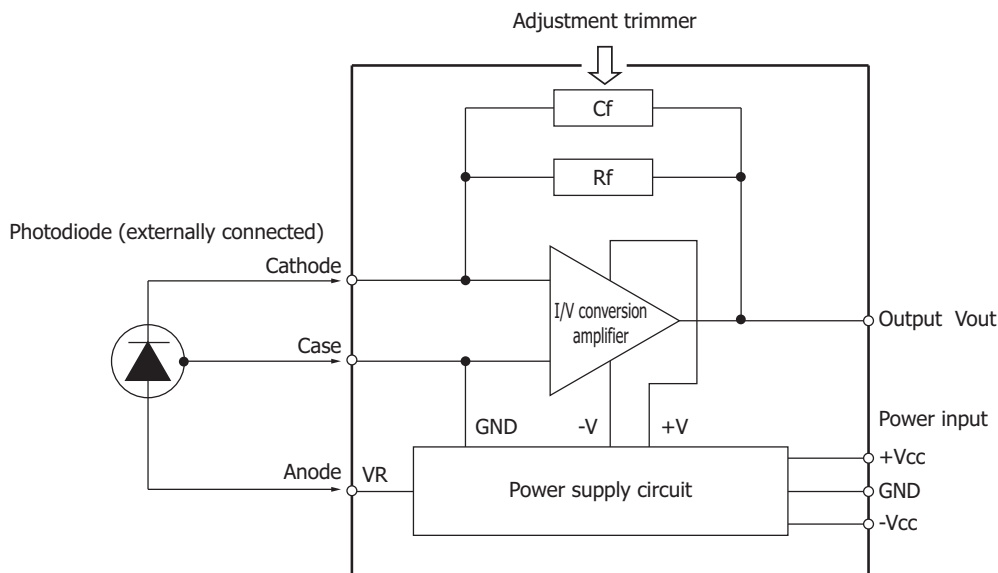
*6: Cutoff frequency when combined with C8366

■ InGaAs PIN photodiode (for C8366-01)

Type no.	Spectral response range λ (nm)	Peak sensitivity wavelength λ_p (nm)	Package	Photosensitive area (mm)	Cutoff frequency* ⁷ f_c -3 dB (MHz)
G8376-03	900 to 1700	1550	TO-18	ϕ 0.3	100
G8376-05				ϕ 0.5	80
G10899-003K	500 to 1700	1550	TO-18	ϕ 0.3	100
G10899-005K				ϕ 0.5	80
G12180-003A	900 to 1700	1550	TO-18	ϕ 0.3	100
G12180-005A				ϕ 0.5	80

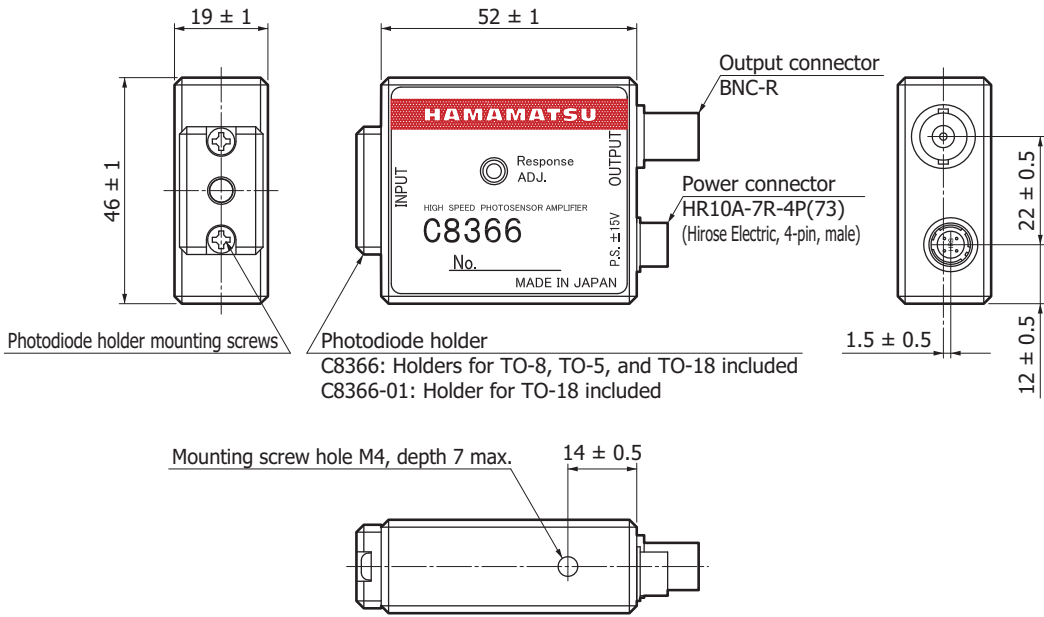
*7: Cutoff frequency when combined with C8366-01

Block diagram



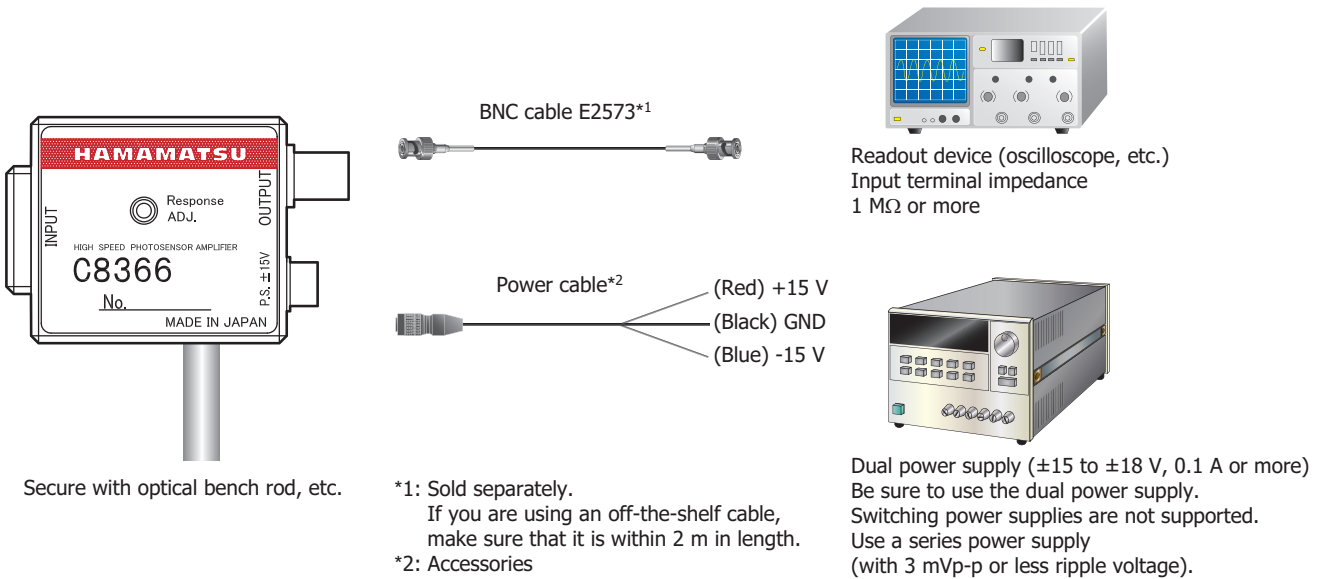
KACCC0752EA

Dimensional outline (unit: mm)



KACCA0335EA

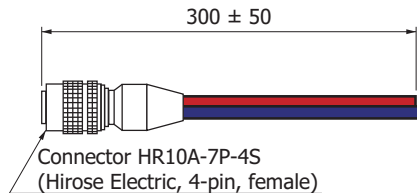
Connection example



KACCC0754EB

Accessories (unit: mm)

- Instruction manual
- Photodiode holder
 - C8366: One each for TO-5, TO-8 and TO-18
 - C8366-01: One for TO-18
- Two photodiode holder mounting screws
 - 5 mm M3 pan head screws
- Power cable (AWG24 lead wires)



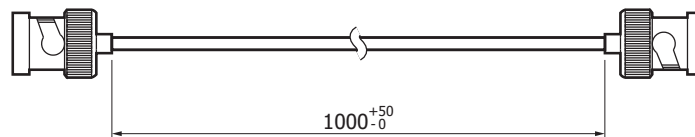
KACCC0755EA

Options (sold separately, unit: mm)

BNC cable E2573

This cable can be used to extract signals from the photosensor amplifier.

- Specifications
 - Cable specifications: 1.5D-QEV



KACCA0334EA

Related information

www.hamamatsu.com/sp/ssd/doc_en.html

- Precautions
 - Disclaimer

Information described in this material is current as of June, 2016.

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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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, N.J. 08807, U.S.A., Telephone: (1) 908-231-0960, Fax: (1) 908-231-1218

Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49) 8152-375-0, Fax: (49) 8152-265-8

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

United Kingdom: Hamamatsu Photonics UK Limited: 2 Howard Court, 10 Tewin Road, Welwyn Garden City, Hertfordshire AL7 1BW, United Kingdom, Telephone: (44) 1707-294888, Fax: (44) 1707-325777

North Europe: Hamamatsu Photonics Norden AB: Torshamnsgatan 35 16440 Kista, Sweden, Telephone: (46) 8-509-031-00, Fax: (46) 8-509-031-01

Italy: Hamamatsu Photonics Italia S.r.l.: Strada della Moia, 1 int. 6, 20020 Arese (Milano), Italy, Telephone: (39) 02-93581733, Fax: (39) 02-93581741

China: Hamamatsu Photonics (China) Co., Ltd.: B1201, Jiaming Center, No.27 Dongsanhuan Beilu, Chaoyang District, Beijing 100020, China, Telephone: (86) 10-6586-6006, Fax: (86) 10-6586-2866