

# 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 Vs max (V)	Operating temperature Topr*1 (°C)	Storage temperature Tstg*1 (°C)	Input current Iin max (mA)
C8366	±18	0 to +50	-0 to +70	5
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, Vs=±15 V, unless otherwise noted)

Type no.	Operating supply voltage*2 Vs (V)		Current consumption*3 Is (mA)	Conversion impedance Zt (V/A)	Cutoff frequency*4 fc -3 dB (MHz)	
	Min.	Max.	Max.		Lower	Upper
C8366	±15	±18	±30	1 × 10 <sup>3</sup>	DC	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 voltage Vfs RL=1 kΩ (V)		Output offset voltage*3 Vos (mV)		Output noise voltage*3 *5 Vn (mVp-p)	Output resistance Ro (Ω)	Reverse voltage for photodiode 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 $\lambda$ (nm)	Peak sensitivity wavelength $\lambda_p$ (nm)	Package	Photosensitive area (mm)	Cutoff frequency*6 $f_c$ -3 dB (MHz)	
					Lower	Upper
S3071	320 to 1060	920	TO-8	$\phi 5.0$	DC	30
S3072			TO-5	$\phi 3.0$		40
S3399	320 to 1000	840	TO-5	$\phi 3.0$		100
S3883				$\phi 1.5$		20
S5821 series	320 to 1100	960	TO-18	$\phi 1.2$		100
S5971	320 to 1060	900		$\phi 1.2$		
S5972	320 to 1000	800		$\phi 0.8$		
S5973 series		760		$\phi 0.4$		

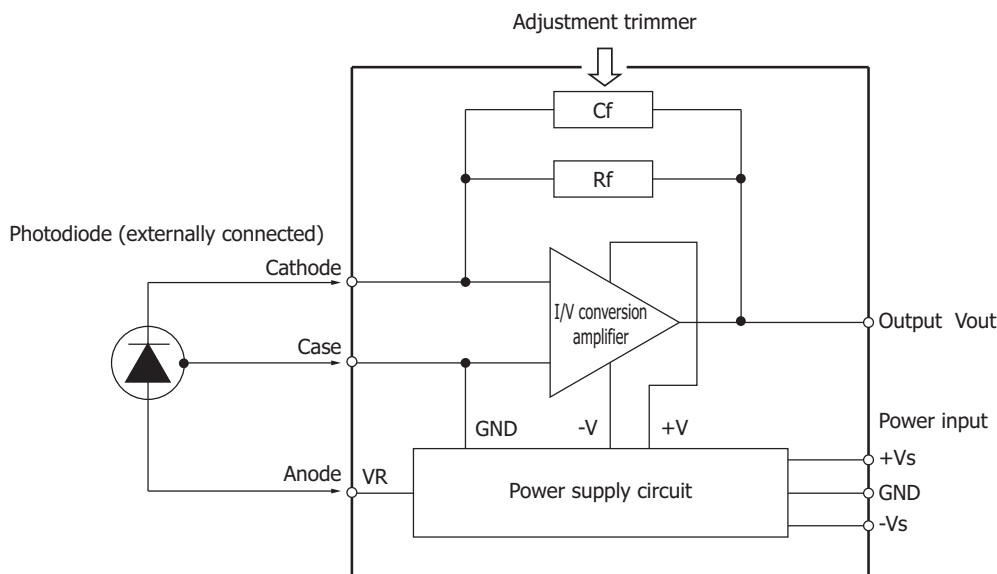
\*6: Cutoff frequency when combined with the C8366

■ InGaAs PIN photodiode (for C8366-01)

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

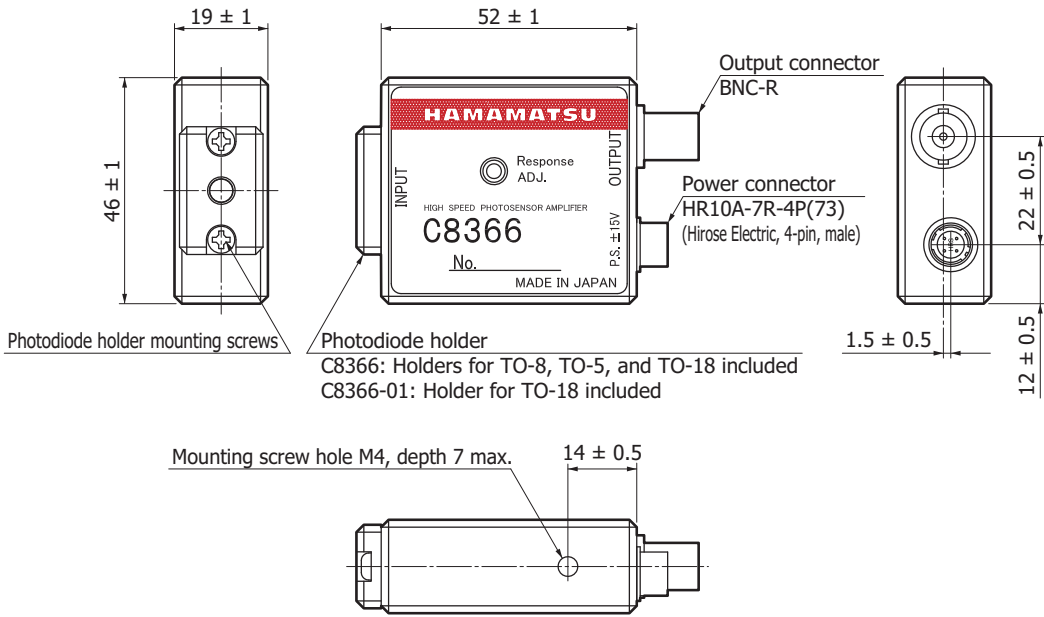
\*7: Cutoff frequency when combined with the C8366-01

**Block diagram**



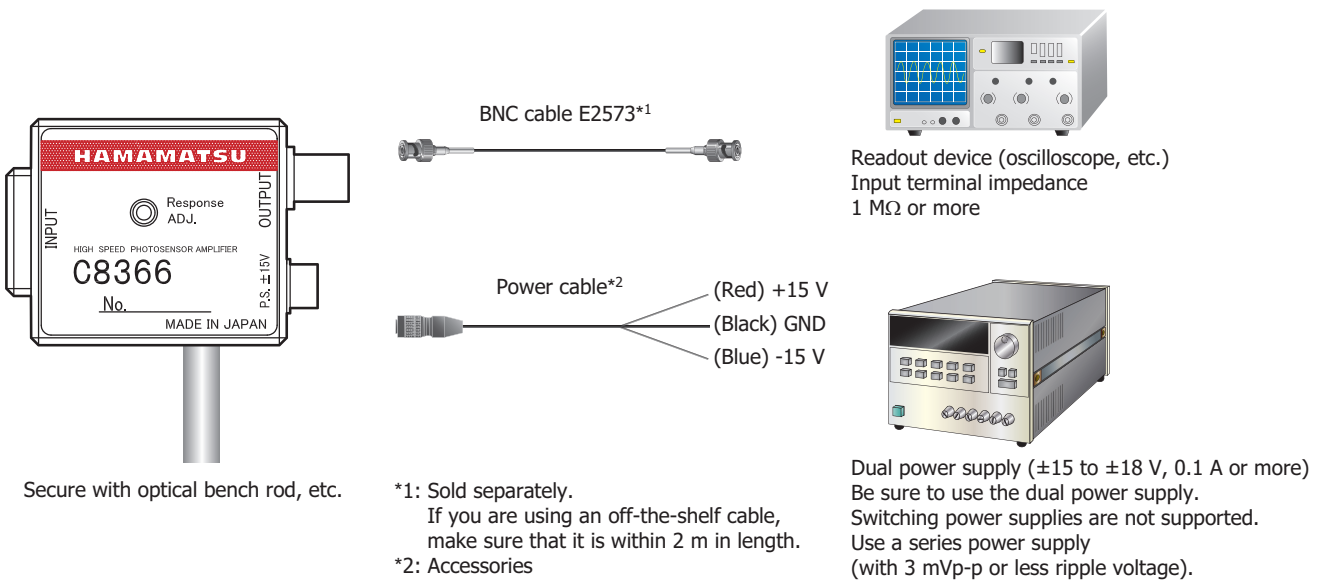
KACCC0752EB

**Dimensional outline (unit: mm)**



KACCA0335EA

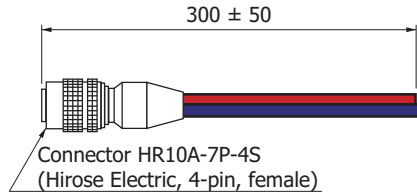
**Connection example**



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)



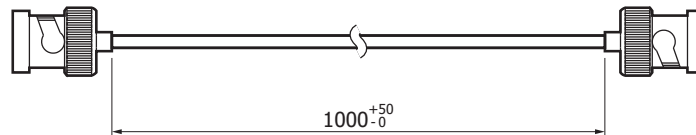
KACCC0755EA

### 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](http://www.hamamatsu.com/sp/ssd/doc_en.html)

- Precautions
  - Disclaimer

Information described in this material is current as of August 2019.

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