

# Amplifier for infrared detector

## C4159/C5185 series, C3757-02

Low noise amplifier for InGaAs, PbS, PbSe and MCT detector



### Accessories

- Instruction manual
- 4-conductor cable (with a connector; 2 m) A4372-02

### ■ Absolute maximum ratings (Ta=25 °C)

Parameter	Value	Unit
Operating temperature	0 to +40	°C
Storage temperature	-20 to +70	°C

### ■ Amplifiers for photovoltaic detectors (Typ.)

Parameter	C4159-01	C4159-04	C4159-02	C4159-03	Unit
Applicable detector	InSb *2 ( $\phi$ 0.6 mm, 1 mm)	InSb *2 ( $\phi$ 2 mm)	InGaAs	InGaAs	-
Conversion impedance	$10^8, 10^7, 10^6$ (3 ranges switchable)	$2 \times 10^7, 2 \times 10^6, 2 \times 10^5$ (3 ranges switchable)	$250$ to $5 \times 10^3$ continuous	$10^7, 10^6, 10^5$ (3 ranges switchable)	V/A
Frequency response (amp. only, -3 dB)	DC to 100 k	DC to 45 k	20 to 120 M	DC to 15 k	Hz
Output impedance	50	50	50	50	$\Omega$
Maximum output voltage (1 k $\Omega$ load)	+10	+10	$\pm 1.3$	+10	V
Output offset voltage	$\pm 5$	$\pm 5$	$\pm 30$	$\pm 5$	mV
Equivalent input noise current (f=1 kHz)	0.15 *1	0.55	30	2.5	pA/Hz <sup>1/2</sup>
Reverse voltage	Impossible		Internally generated	Can be applied from external unit	-
External power supply	$\pm 15$		$\pm 15$	$\pm 15$	V
Current consumption	+30, -10 Max.		+90, -60 Max.	$\pm 15$ Max.	mA

\*1: 0.65 pA/Hz<sup>1/2</sup> when conversion impedance is set to  $10^6$  V/A.

\*2: Amplifiers for multi-element detectors are separately provided.

Note) Output noise voltage = Equivalent input noise current  $\times$  Conversion impedance

### ■ Amplifiers for photoconductive detectors (Typ.)

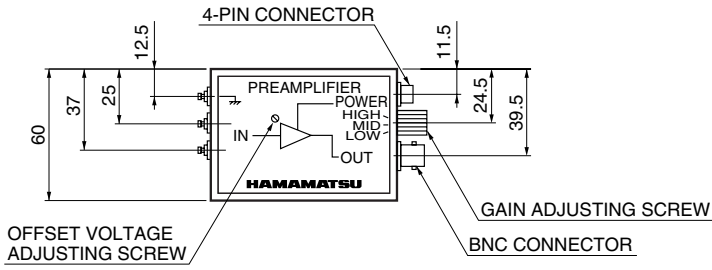
Parameter	C5185	C5185-01	C3757-02	Unit
Applicable detector	MCT (dewar type)	MCT (TE-cooled)	PbS, PbSe	-
Input impedance	5	5	10000	k $\Omega$
Voltage gain	66 ( $\times$ 2000)	66 ( $\times$ 2000)	40 ( $\times$ 100)	dB
Frequency response (amp. only, -3 dB)	5 to 250 k	5 to 250 k	0.2 to 10 k	Hz
Detector bias current	5 mA, 10 mA, 15 mA (3 ranges switchable)	0.1 mA, 0.5 mA, 1 mA (3 ranges switchable)	Internal bias	-
Output impedance	50	50	50	$\Omega$
Maximum output voltage (1 k $\Omega$ load)	$\pm 2.5$	$\pm 2.5$	$\pm 10$	V
Equivalent input noise voltage (f=1 kHz)	2.6	1.2	40	nV/Hz <sup>1/2</sup>
External power supply	$\pm 15$	$\pm 15$	$\pm 15$	V
Current consumption	+60, -10 Max.	+60, -10 Max.	+15, -15 Max.	mA

Note) Output noise voltage = Equivalent input noise voltage  $\times$  Voltage gain

# Amplifier for infrared detector C4159/C5185 series, C3757-02

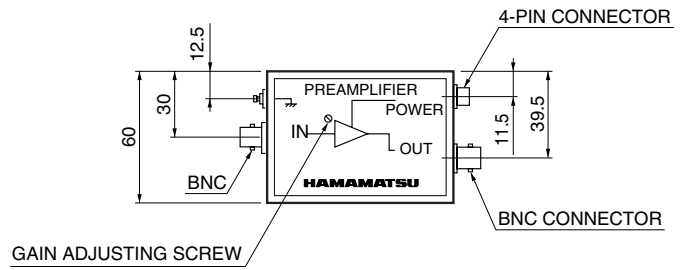
■ Dimensional outlines (unit: mm)

C4159-01-03-04



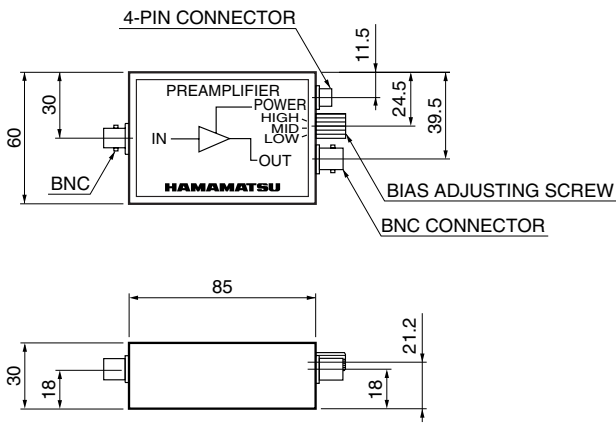
KIRDA0046EA

C4159-02



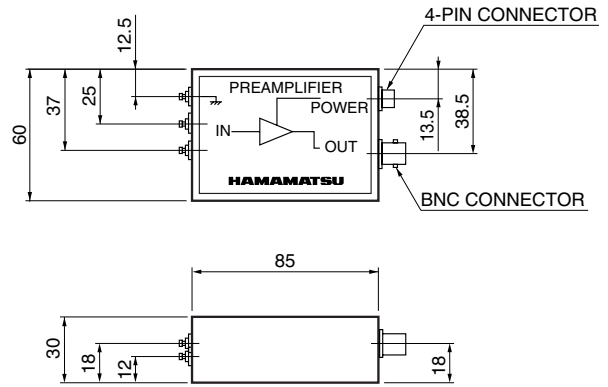
KIRDA0047EA

C5185-01



KIRDA0048EB

C3757-02



KIRDA0049EA

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