

# Pyroelectric Detectors

**Ideally suited for human body sensing and simplified analytical instruments**

**Broad spectral response**  
**Operates at room temperature**  
**Low cost**

## Thermally-Compensated Types (Single Element)

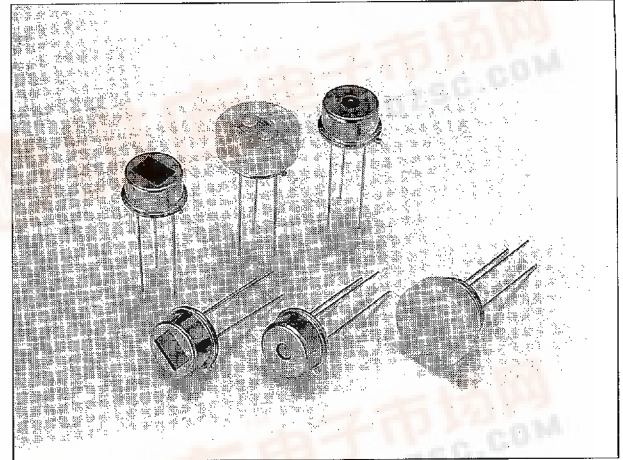
Including a thermal compensation element in the same package, these types can minimize noise fluctuation caused by changes in the ambient temperature. Suited for simplified analytical instruments.

## Dual Element Types

Optimized specifically for human body sensing. Two families are available: the P4488 series with wide fields of view and the P3514 series with a lens cap that provides limited fields of view.

## Single Element Types

A single pyroelectric element is used, being suitable for general-purpose infrared detection.



(Typical data unless otherwise specified,  $T_a=25^\circ\text{C}$ )

Type No.	Window Material	Active Area	Spectral Response Range	Sensitivity (500, 1)	Noise Max.	$D^*$ (500, 1, 1)	NEP (500, 1, 1)	Rise Time $t_r$ 0 to 63 %	Temp. Coefficient of Sensitivity Max.	Supply Voltage	Offset Voltage $R_L=22\text{ k}\Omega$	Operating Temperature $T_{opr}$	Storage Temperature $T_{stg}$
		(mm)	( $\mu\text{m}$ )	(V/W)	( $\mu\text{V}/\text{Hz}^{1/2}$ )	( $\text{cm}^2\cdot\text{Hz}/\text{W}$ )	(W/Hz $^{1/2}$ )	(ms)	(%/°C)	(V)	(V)	(°C)	(°C)

## Thermally-Compensated xTypes (Single Element)

P3782	Silicon	$\phi 2$	2 to 20	1500	15	$1.7 \times 10^8$	$8.5 \times 10^{-10}$	100	0.2	3 to 15	0.2 to 1.0	-20 to +60	-30 to +85
P3782-01	7 $\mu\text{m}$ long-pass filter	$\phi 2$	7 to 20	1300	15	$1.5 \times 10^8$	$1.0 \times 10^{-9}$						
P3782-02	4.3 $\mu\text{m}$ band-pass filter	$\phi 2$	4.3 (HW=80 nm)	3900(A)	15	$3.0 \times 10^8$	$5.0 \times 10^{-10}$						
P3782-03	8-14 $\mu\text{m}$ band-pass filter	$\phi 2$	8 to 14	900	15	$2.0 \times 10^8$	$1.0 \times 10^{-9}$						
P3782-05	5 $\mu\text{m}$ long-pass filter	$\phi 2$	5 to 20	1500	15	$1.7 \times 10^8$	$8.5 \times 10^{-10}$						
P3782-12	4.4 $\mu\text{m}$ band-pass filter	$\phi 2$	4.4 (HW=650 nm)	4100(A)	15	$3.0 \times 10^8$	$5.0 \times 10^{-10}$						
P4736	Silicon	$\phi 2$	2 to 20	1500	15	$1.7 \times 10^8$	$8.5 \times 10^{-10}$						
P4736-01	7 $\mu\text{m}$ long-pass filter	$\phi 2$	7 to 20	1300	15	$1.5 \times 10^8$	$1.0 \times 10^{-9}$						
P4736-05	5 $\mu\text{m}$ long-pass filter	$\phi 2$	5 to 20	1500	15	$1.7 \times 10^8$	$8.5 \times 10^{-10}$						
P4736-12	4.4 $\mu\text{m}$ band-pass filter	$\phi 2$	4.4 (HW=650 nm)	4100(A)	15	$3.0 \times 10^8$	$5.0 \times 10^{-10}$						

## Dual Element Types

P4488	7 $\mu\text{m}$ long-pass filter	$2 \times 1$ ( $\times 2$ )	7 to 20	1300	15	$1.5 \times 10^8$	$1.0 \times 10^{-9}$	100	0.2	3 to 15	0.2 to 1.0	-20 to +60	-30 to +85
P4488-02	5 $\mu\text{m}$ long-pass filter		5 to 20	1500	15	$1.7 \times 10^8$	$8.5 \times 10^{-10}$						

## Dual Element Types with Lens Cap

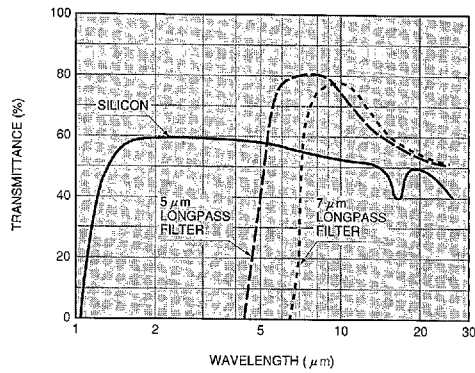
P3514	7 $\mu\text{m}$ long-pass filter	$2 \times 1$ ( $\times 2$ )	7 to 20	450	15	$1.0 \times 10^8$	$1.5 \times 10^{-9}$	100	0.2	3 to 15	0.2 to 1.0	-20 to +60	-30 to +85
P3514-01													

## Single Element Types

P2613	Silicon	$\phi 2$	2 to 20	1800	15	$2.0 \times 10^8$	$1.0 \times 10^{-9}$	100	0.2	3 to 15	0.2 to 1.0	-20 to +60	-30 to +85
P2613-01	7 $\mu\text{m}$ long-pass filter	$\phi 2$	7 to 20	1500	15	$2.0 \times 10^8$	$1.0 \times 10^{-9}$						
P2613-02	4.3 $\mu\text{m}$ band-pass filter	$\phi 2$	4.3 (HW=80 nm)	3900(A)	15	$3.0 \times 10^8$	$5.0 \times 10^{-10}$						
P2613-03	8-14 $\mu\text{m}$ band-pass filter	$\phi 2$	8 to 14	900	15	$2.0 \times 10^8$	$1.0 \times 10^{-9}$						
P2613-12	4.4 $\mu\text{m}$ band-pass filter	$\phi 2$	4.4 (HW=650 nm)	4100(A)	15	$3.0 \times 10^8$	$5.0 \times 10^{-10}$						

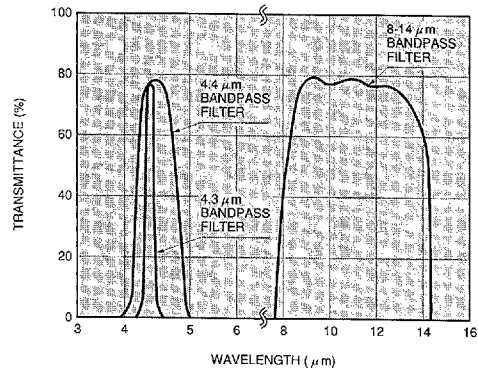
(A) Measured at 4.3  $\mu\text{m}$  or 4.4  $\mu\text{m}$ .

### ● Transmittance of Window Materials (1)



KIRDB0077EA

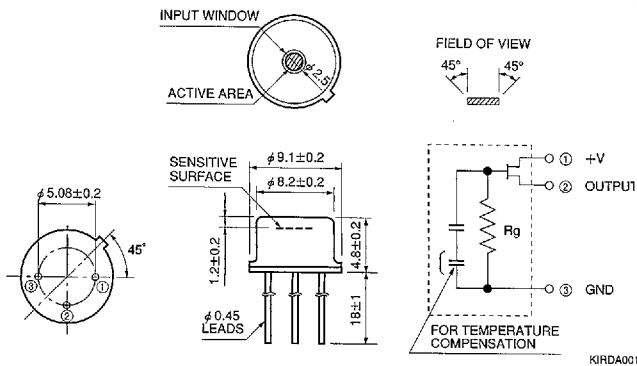
### ● Transmittance of Window Materials (2)



KIRDB0078EA

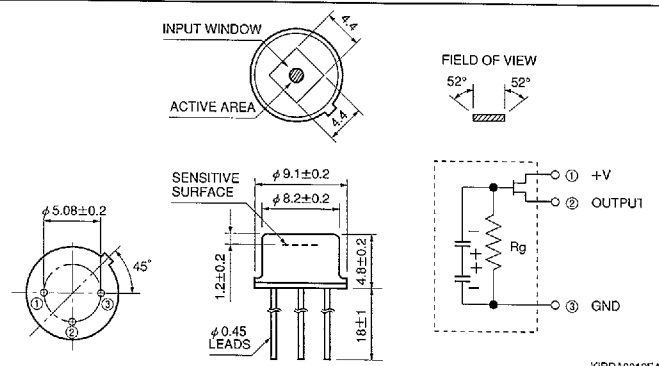
### ● Dimensional Outlines (Unit: mm)

#### P3782 Series



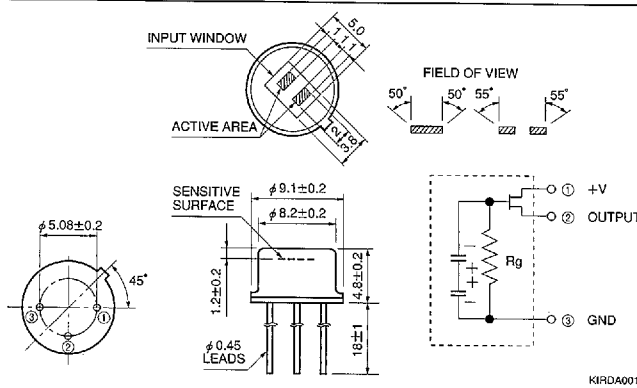
KIRDA0011EA

#### P4736 Series



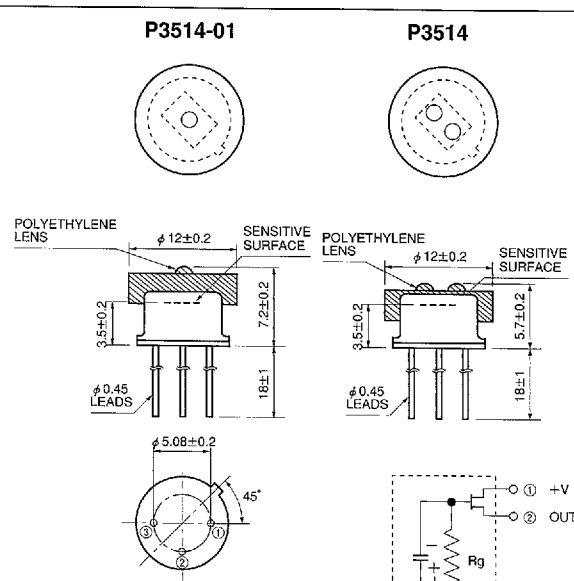
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#### P4488 Series



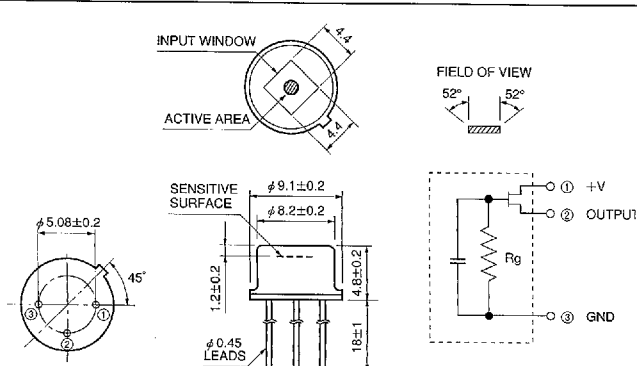
KIRDA0013EA

#### P3514 Series



KIRDA0014EA

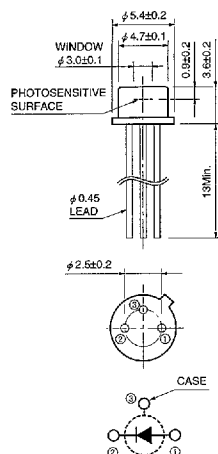
#### P2613 Series



KIRDA0015EA

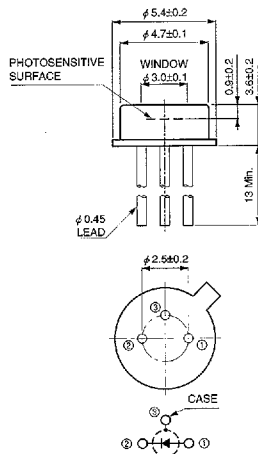
# Dimensional Outlines (Unit: mm)

## ① G3476-01, etc.



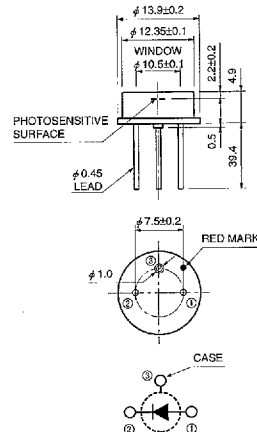
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## ② G5832-02, -03



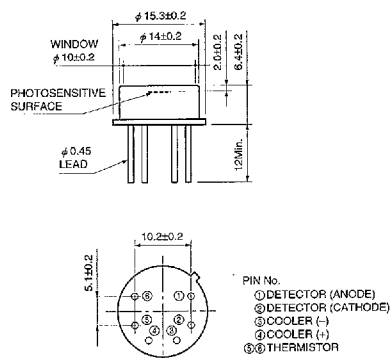
KIRDA0002EB

## ③ G5832-05, etc.



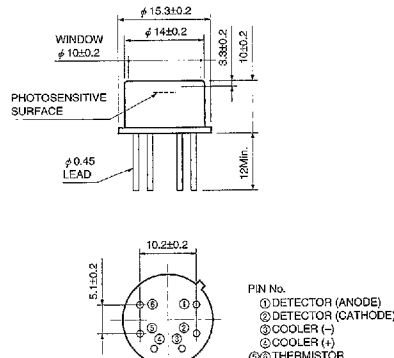
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## ④ G5832-11, etc.



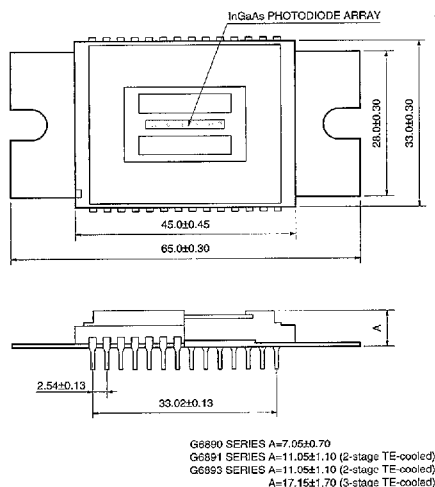
KIRDA0029EB

## ⑤ G5832-21, etc.



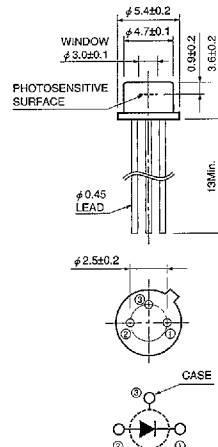
KIRDA0031EB

## ⑥ G6890-128, etc.



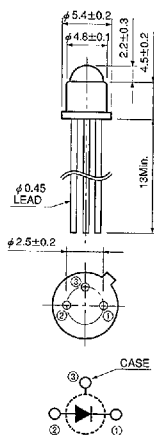
KMIRA0007EA

## ⑦ B1720-02, etc.



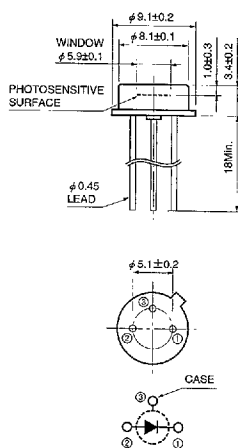
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### 8 B1720-05



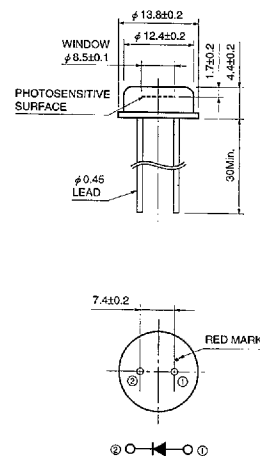
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### 9 B2144-01, etc.



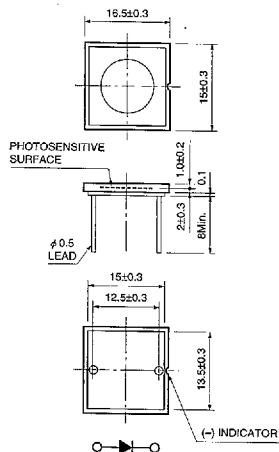
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### 10 B1919-01



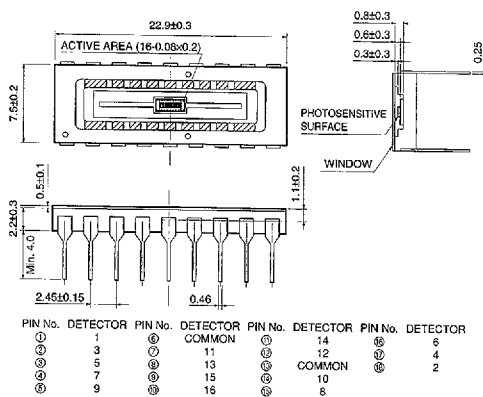
KIRDA0026EA

### 11 B1920-01



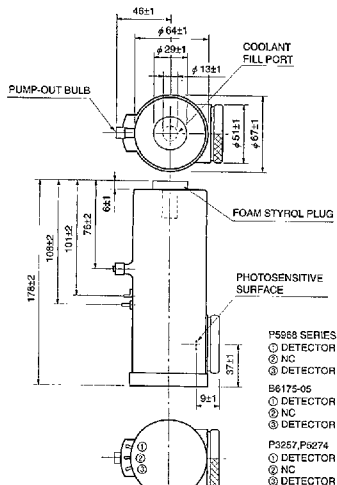
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### 12 G7151-16



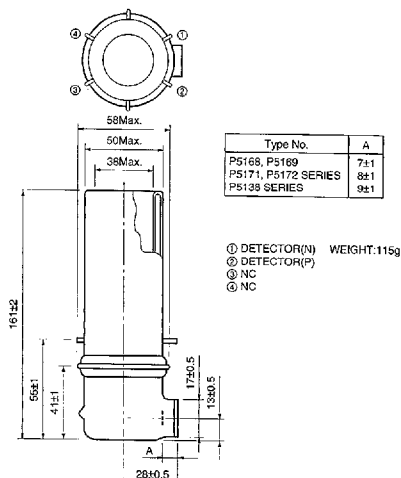
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### 13 P5968 series, P7163, B6175-05, etc.



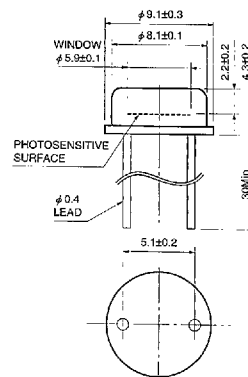
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### 14 P5138, etc.



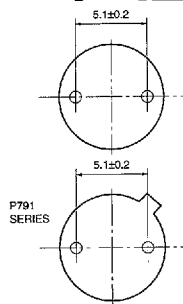
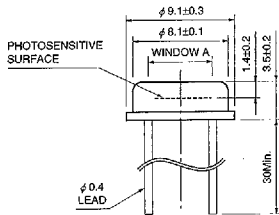
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### 15 P394



KIRDA0036EA

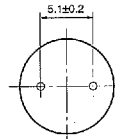
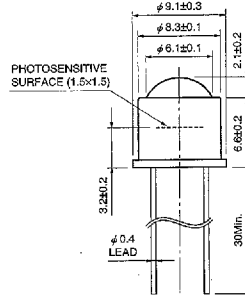
# 16 P394A, etc.



	P791 SERIES	OTHERS
A	5.5±0.1	5.9±0.1

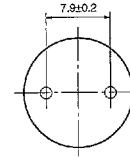
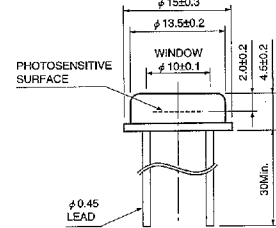
KIRDA0038EA

# 17 P3226-02



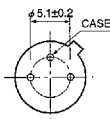
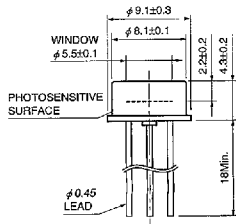
KIRDA0037EA

# 18 P397



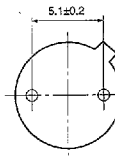
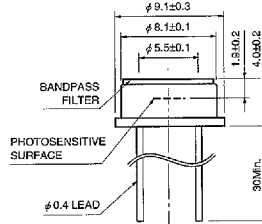
KIRDA0038EA

# 19 P791-11



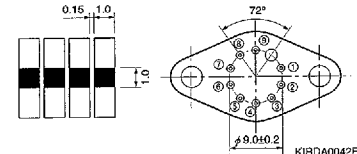
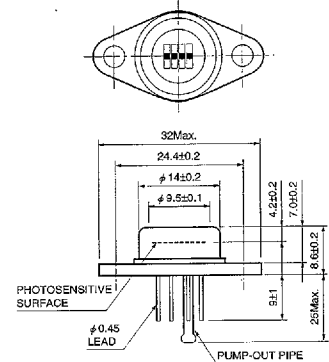
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# 20 P3207-04



KIRDA0054EA

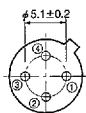
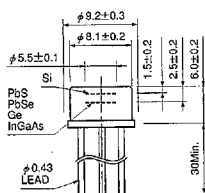
# 21 P4115



PIN No.  
① THERMISTOR  
② THERMISTOR  
③ THERMISTOR  
④ THERMISTOR  
⑤ COMMON  
⑥ COOLER (-)  
⑦ COOLER (+)

KIRDA0042EC

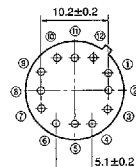
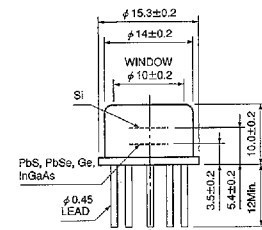
# 22 K1713-01, etc.



PIN No.  
① SI (N)  
② SI (P)  
③ PbS, PbSe, Ge, InGaAs (N)  
④ PbS, PbSe, Ge, InGaAs (P)

KIRDA0041EA

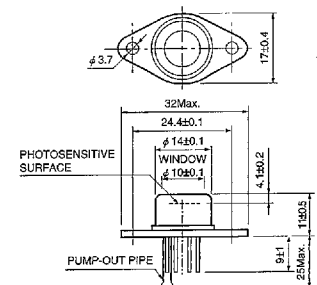
# 23 K3413-01, etc.



PIN No.  
① PbS, PbSe, Ge, InGaAs (P)  
② PbS, PbSe, Ge, InGaAs (N)  
③ COOLER (-)  
④ COOLER (+)  
⑤ THERMISTOR  
⑥ SI (N)  
⑦ SI (P)

KIRDA0043EA

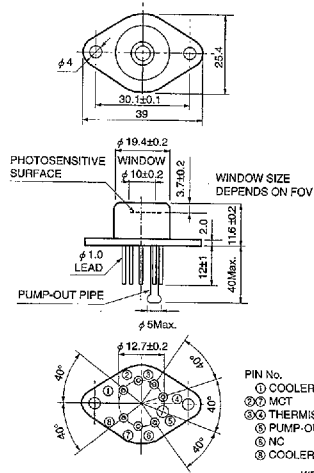
# 24 P3981-01, etc.



PIN No.  
① THERMISTOR  
② THERMISTOR  
③ DETECTOR  
④ DETECTOR  
⑤ COOLER (-)  
⑥ COOLER (+)

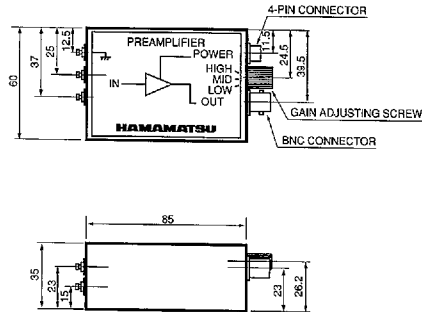
KIRDA0044EB

25 P2750, etc.



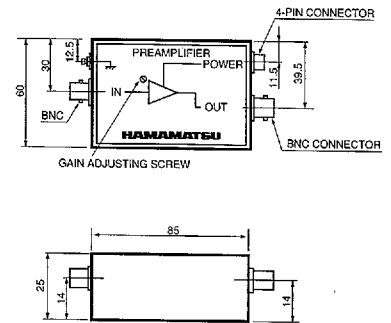
KIRDA0045EB

26 C4159, -01, -03



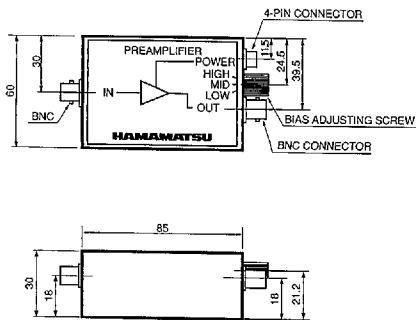
KIRDA0046EA

27 C4159-02



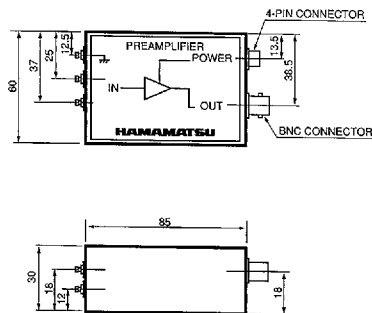
KIRDA0047EA

28 C5185, -01



KIRDA0048EB

29 C3757-02



KIRDA0049EA