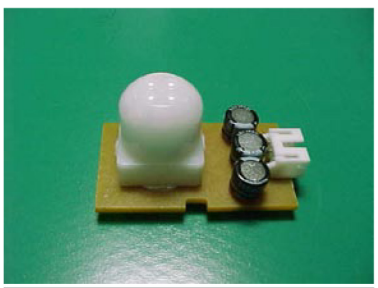
SPECIFICATION OF

PYROELECTRIC PASSIVE INFRARED SENSOR UNIT

Part No: PSUP43-12



Pyroelectric Passive Infrared Sensor Module PSUP43-12

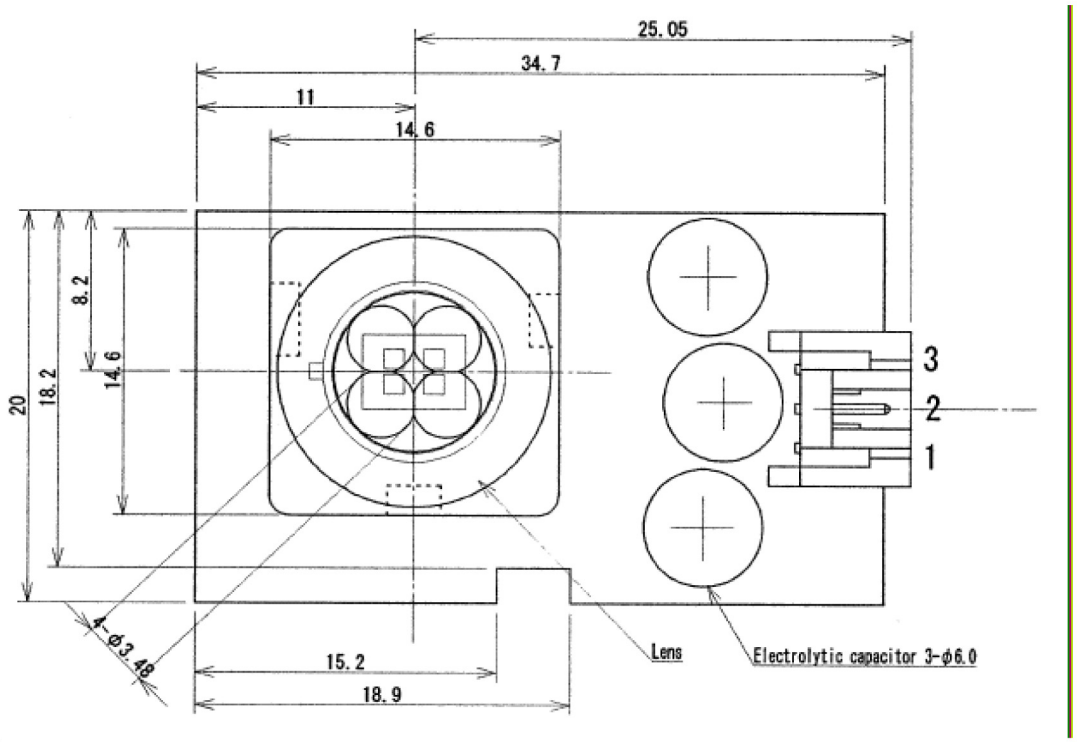
This module utilises a quad element sensor for human body detection. Manufactured by Nippon Ceramic Co. Ltd of Japan.

■ Module Structure

NiCera's passive infrared sensor, a lens and some electric components are mounted on a PC Board.

■ Dimensions

See Figure 1a (below) and Figure 2a (overleaf). The production Lot No. is put on each module.



Pin arrangement:

1: +Vs (5V)
2: Vout
3: Ground

Figure 1a – Dimensions

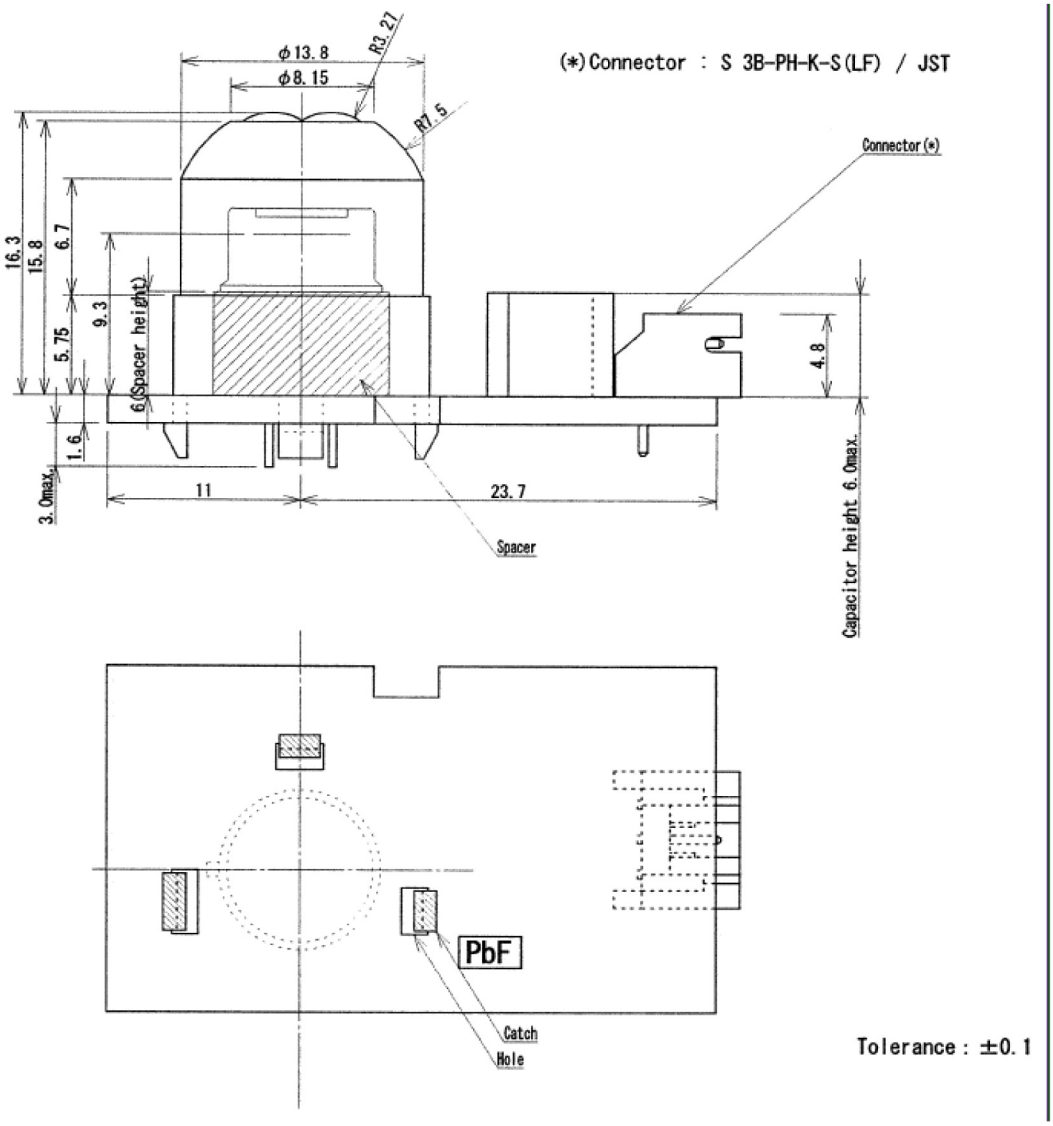


Figure 1b – Dimensions

■ General Characteristics

Parameter	**Specification**
Pyroelectric Passive Infrared Sensor	Balanced differential type (Series opposed 4 elements type)
Optics	High density polyethylene
Circuit configuration	See Figure 2, below
Connector	S 3B-PH-K-S(LF)/JST

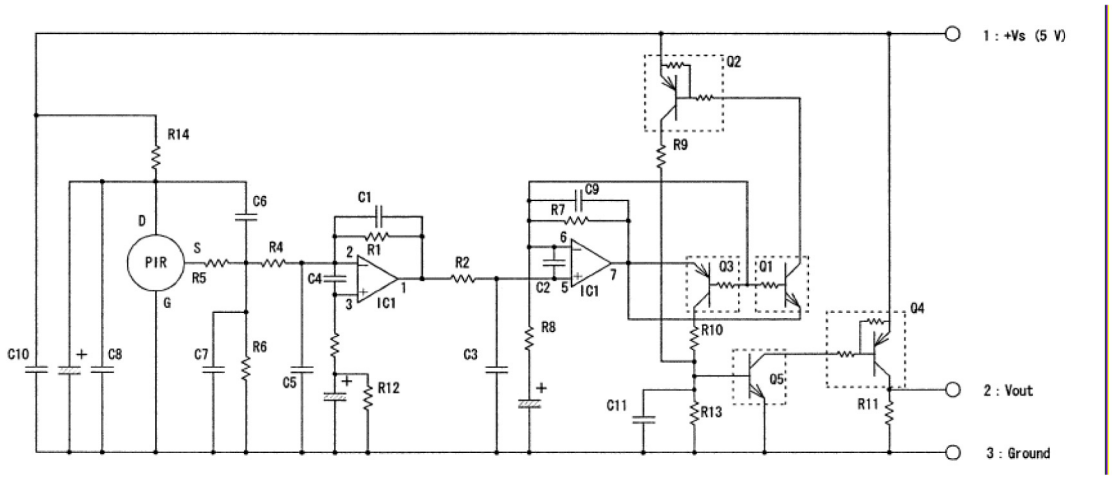
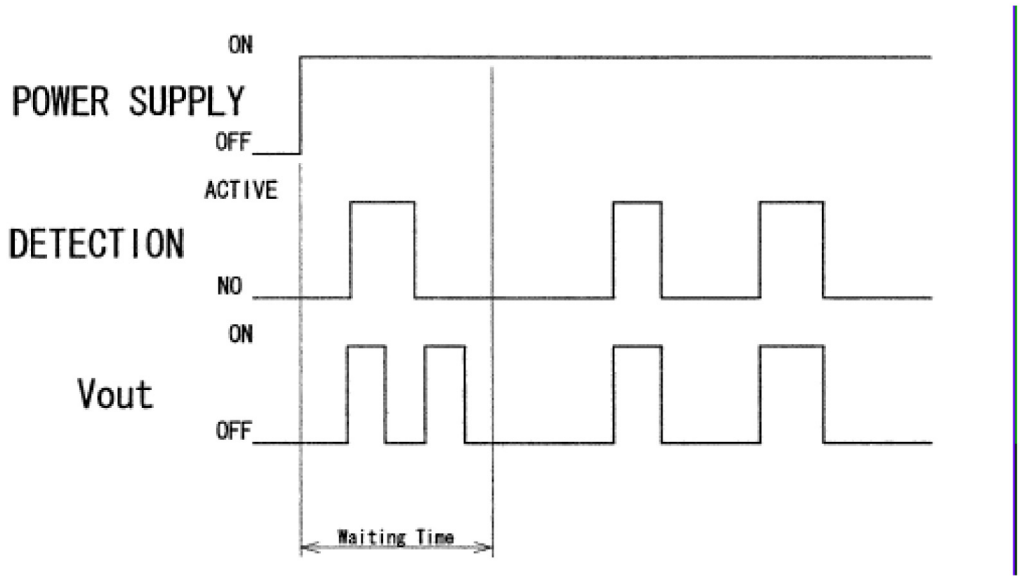


Figure 2 – Circuit Configuration

■ Electrical Characteristics

Parameter	Condition	Specification
Supply Voltage (+Vs)	Single power supply	5.0 +/- 0.25 V
Current Consumption	+Vs=5V supply Pull down resistor: 100Kohm	Max. 3.0 mA
Output Voltage	Detection: Non-detection:	+Vs – 0.5V 0V
Waiting time	Timing chart: See Figure 3, below	Max 50 sec



Waiting time: Max 50 secs
Regardless of detection or non-detection, ON signal may be made due to instability of circuit.

Figure 3 – Timing Chart

■ Optical Characteristics

Parameter	Specification
Number of Zones	12 Zones
Field of View	See Figure 4
Detection Area	See Figure 5, overleaf

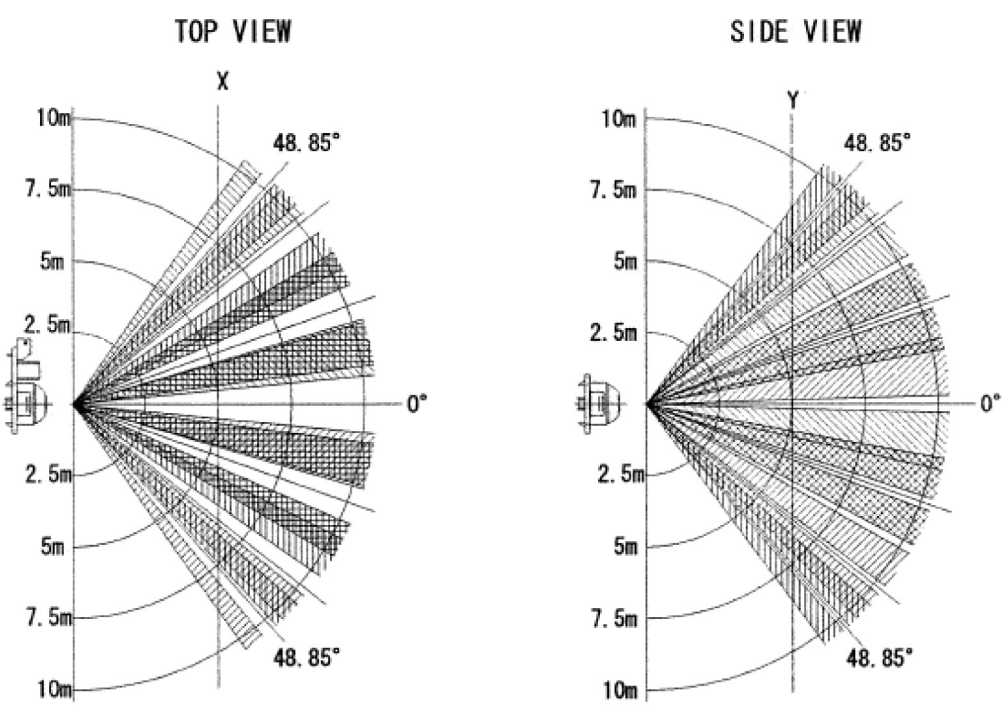
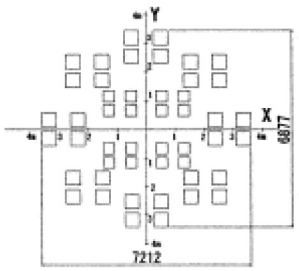
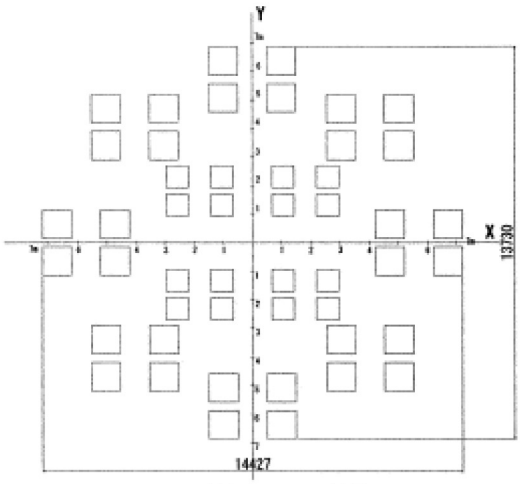


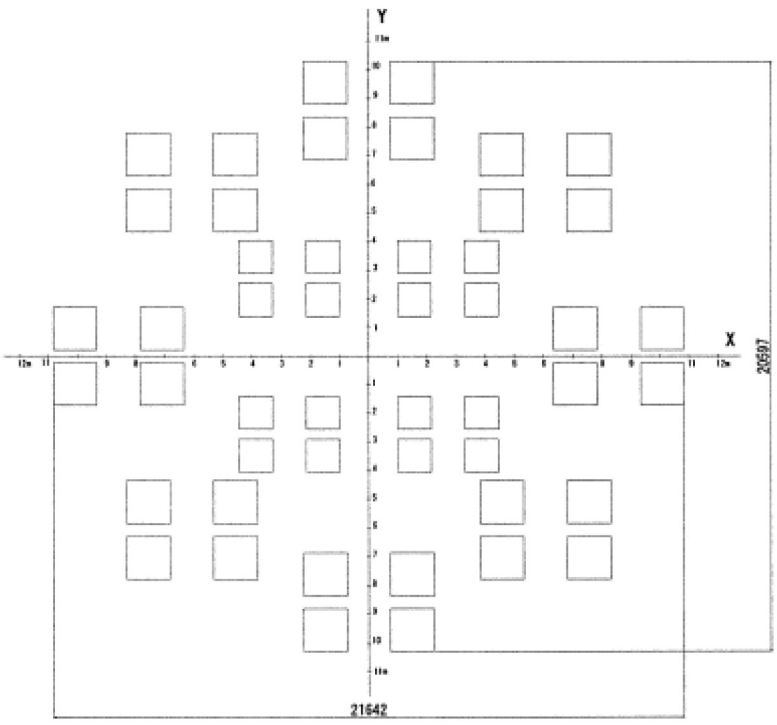
Figure 4 – Field of View



Distance: 2.5m



Distance: 5.0m



Distance: 7.5m

Figure 5 – Detection Area

■ Environmental Requirements

Parameter	Specification
Operating Temperature	-20 ~ 50 degrees C (without condensation)
Storage Temperature	-30 ~ 70 degrees C

■ Notes

Design restrictions/precautions

- This module is designed for indoor use.
- In cases where secondary accidents due to operation failure or malfunctions can be anticipated, add a fail safe function to the design.

Usage restrictions/precautions

To prevent sensor malfunctions, operational failure or any deterioration of its characteristics, do not use this module in the following or similar conditions:

- In rapid environmental temperature changes
- In strong shock or vibration
- In a place where there are obstructing materials (glass, fog etc) through which infrared rays cannot pass within the detection area
- In fluid, corrosive gases and sea breeze
- Continual use in high humidity atmosphere
- Exposed to direct sunlight or automobile headlights
- Exposed to direct wind from a heater or air conditioner.

Handling and storage restrictions/precautions

To prevent module malfunctions, operational failure, appearance damage or any deterioration of its characteristics, do not expose this module to the following or similar, handling and storage conditions:

- Vibration for a long time
- Strong shock
- Static electricity or strong electromagnetic waves
- High temperature and humidity for a long time
- Corrosive gases or sea breeze
- Dirty and dusty environments that may contaminate the optical lens.

Module problems resulting from misuse, inappropriate handling or storage are not the manufacturer’s responsibility.