



PE (Polyethylene) lens



Si (Silicon) lens

FEATURES

1. **Low profile achieved with fitted lens and embedded sensing circuit.**

The low profile sensor (Polyethylene: 9.7mm, Silicon-lens: 6mm) is possible using Panasonic's proprietary and high-density electronic component mounting. This technology is achieved by simply embedding the sensing circuits inside the actual sensor. (See "Block Diagram" below)

With Silicon-lens sensor, the lens is incorporated in the outer package to become a pyroelectric sensor module. This makes it easy to mount the sensor on thin or compact products with limited space.

2. **Motion detection with 3mm diameter miniature flat lens**

A 3 mm diameter flat surface lens is possible using Panasonic's unique Lens Formation Technology for silicon substrates, making the lens operating substantially small compared to other conventional sensors.

3. **1 μ A low current consumption possible based on Panasonic's proprietary design**

The development of a specialized circuit allows the reduction of current consumption to 1 μ A (*). After motion is detected, the sensor will shift to "stand-by" mode.

Reduction of Current consumption allows battery life to be extended for battery driven products. These include wireless based or energy sensitive devices.

(Note: Product lineup includes: 1 μ A, 2 μ A, and 6 μ A sensors.)

4. **Robust design against false starts**

Panasonic PaPIRS sensing circuits are enclosed in a metallic case which helps minimize the adverse effects of external electro magnetic fields. (i.e.: radiated noise caused by cellular phones)

Since the sensors have a high S/N ratio, they are less sensitive to false starts when operated under different environmental surroundings.

APPLICATIONS

Security & Wireless Devices

- Security sensors and cameras
- Wireless occupancy sensors driven by photovoltaic cells or battery to extend battery life.

Housing & Commercial equipment

- Lighting fixtures and wiring devices
- Video intercoms, HA control panels
- Vending machines etc.

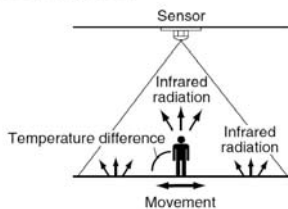
Home appliances (Energy savings)

- Television and PC monitors
- PC, Air-Conditioners
- Air Purifiers
- Wireless and Battery operated monitoring sensing devices

What is passive infrared type?

This sensor detects changes in infrared radiation which occur when there is movement by a person (or object) which is different in temperature from the surroundings.

- 1 As this sensor detects temperature differences, it is well suited to detecting the motion of people by their body temperature.
- 2 Wide sensing area.

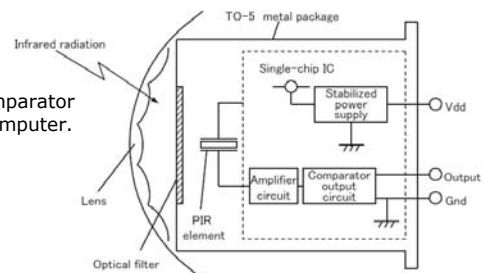


Compliance with RoHS Directive

Block Diagram

(digital output circuit)

Has a built-in amplifier and comparator connected directly to a microcomputer.



ORDERING INFORMATION

EKMA							
Output: 1: Digital							Lens Color: 0: No Lens 1: White 2: Black
Current Consumption: 1: 1 μ A 2: 2 μ A 3: 6 μ A							Lens Material: 1: Polyethylene 2: Silicon
Detection Range: 01: 5m 02: 3m							Mounting: 1: TO-5

PRODUCT TYPES

Lens type	Current Consumption	Lens color	Model No.	Inner Package	Outer Package
Si-lens type (Silicon)	1 μ A	—	EKMA1102120	50pcs.	1000pcs.
	2 μ A	—	EKMA1202120		
	6 μ A	—	EKMA1302120		
PE-lens type (Polyethylene)	1 μ A	White	EKMA1101111		
		Black	EKMA1101112		
	2 μ A	White	EKMA1201111		
		Black	EKMA1201112		
	6 μ A	White	EKMA1301111		
		Black	EKMA1301112		

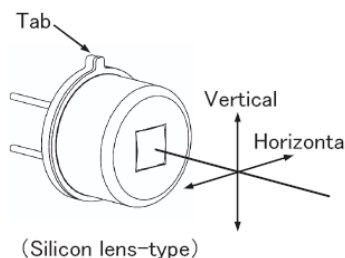
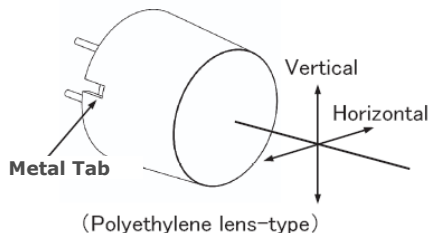
PERFORMANCE

1. Detection Performance

Items		PE-lens type	Si-lens type	Conditions concerning the target
Detection Range *1)		Max. 5m	Max. 3m	1. The temperature difference between the target and the surroundings should be superior to 4°C.(7.2°F) 2. Movement speed: 1.0m/s 3. Target concept is human body (Size : Around 700 × 250mm)
Detection Area	Horizontal *2)	94° (±47°)	58° (±29°)	
	Vertical *2)	82° (±41°)	34° ($\begin{matrix} +12^\circ \\ -22^\circ \end{matrix}$)	
	Detection Zones *3)	64 zones	4 zones	

*1) Depending on the target's speed and its temperature difference with the surroundings, detection can occur at a range superior to the above value. However, please use this sensor according to the specifications.

*2) Definitions for "Horizontal" and "Vertical"



*3) Refer to the "detection area" diagram on P.4.

2. Maximum Rated Values (Common for both PE-lens type, and Si-lens type)

Items	Specified value
Power Supply Voltage	-0.3~7V DC
Usable Ambient Temperature	-20~+60°C (-4~+140°F) Do not use in a freezing or condensation environment
Storage Temperature	-20~+70°C (-4~+158°F)