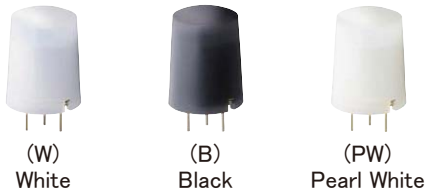


(Standard detection type)



(Long distance detection type)



**1. Simplified circuitry with fully integrated sensor design**

Panasonic's proprietary high-density embedded circuit design eliminates external sensing circuits. Advantages include reduced development and design schedules.

**2. Low curvature lens for product designs**

Panasonic's lens formation technology achieves a semi-flat lens with a smooth surface and minimum protrusion from the device. In addition to white and black lens options, pearl white is offered for design aesthetics. (\*Refer to "Dimensions" on page 5)

**3. Robust design prevents false detection**

PaPIRS sensing circuits are enclosed in a metallic can to minimize adverse effects of external electromagnetic fields. Examples include irradiated noise caused by cellular phones.

A high S/N ratio minimizes sensitivity to false tripping when operated under various environmental conditions.

**4. Lead-free pyroelectric elements**

PaPIRS sensing elements contain lithium tantalate and are lead-free. Typical PIR sensing elements are ferroelectric ceramic (PZT) containing lead.

**APPLICATIONS**

**Commercial / Residential Equipment**

- Lighting fixtures, Sensor switches,
- Video intercoms, Vending machines,
- Home automation control panels

**Home Appliances (Energy Savings)**

- Television and PC monitor
- Air conditioners, Air purifiers

**What is passive infrared type?**

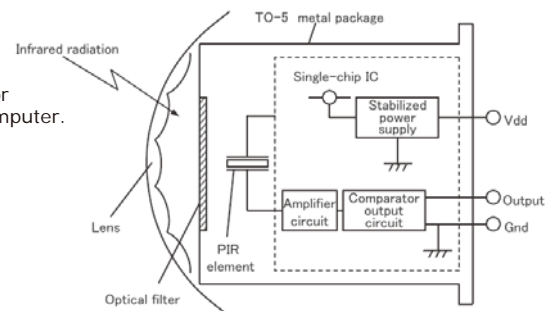
This sensor detects changes in infrared radiation which occur when there is movement by a person (or object) which is different in temperature from the surroundings.

- 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.

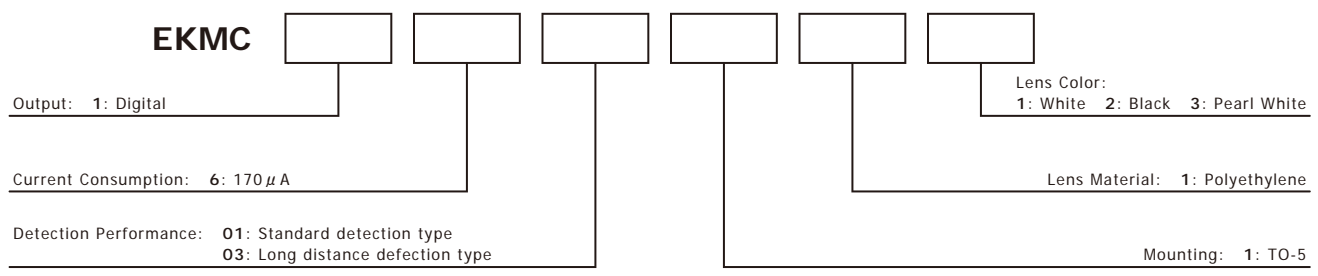
**Compliance with RoHS Directive**

**Block Diagram (Digital output circuit)**

Built-in amplifier and comparator connected directly to a microcomputer.



**ORDERING INFORMATION**



**PRODUCT TYPES**

| Detection Performance        | Current Consumption | Lens Color  | Model No.   | Inner Package | Outer Package |
|------------------------------|---------------------|-------------|-------------|---------------|---------------|
| Standard detection type      | 170 μA              | White       | EKMC1601111 | 50pcs         | 1000pcs       |
|                              |                     | Black       | EKMC1601112 |               |               |
|                              |                     | Pearl White | EKMC1601113 |               |               |
| Long Distance detection type | 170 μA              | White       | EKMC1603111 | 50pcs         | 1000pcs       |
|                              |                     | Black       | EKMC1603112 |               |               |
|                              |                     | Pearl White | EKMC1603113 |               |               |

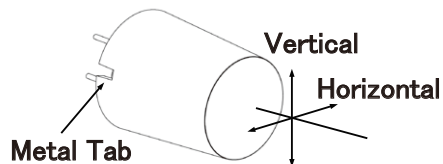
**PERFORMANCE**

**1. Detection Performance** [Conditions for measuring: Ambient temperature:25°C(77°F) Operating voltage: 5VDC]

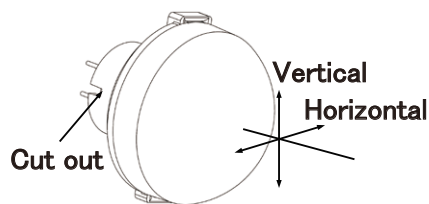
| Items               |                | Standard Detection type | Long Distance Detection type | Conditions concerning target   |
|---------------------|----------------|-------------------------|------------------------------|--|
| Detection Range *1) |                | Max. 5m                 | Max. 12m                     | 1. The temperature difference between the target and the surroundings should be superior to 4°C (7.2°F).<br>2. Movement speed: 1.0m/s<br>3. Target concept is human body (Size: 700 × 250mm) |
| Detection Area      | Horizontal *2) | 94° (±47°)              | 102° (±51°)                  |  |
|                     | Vertical *2)   | 82° (±41°)              | 92° (±46°)                   |  |
| Detection Zone *3)  |                | 64 zones                | 92 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"



Standard detection type



Long Distance detection type

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

**2. Maximum Rated Values**

| Items                      | Specified value  |
|----------------------------|--|
| Power Supply Voltage       | -0.3~7.0V DC   |
| Usable Ambient Temperature | -20~+60°C (-4~+140°F)<br>Do not use in a freezing or condensation environment. |
| Storage Temperature        | -20~+70°C (-4~+158°F)  |