

## PIR Sensor Module – APS001

### General Description

The PIR Sensor Module is a passive infrared sensor designed to pick up heat radiation of wave lengths in a band around 10 microns. It contains two active elements configured as balanced differential series opposed type. This results in good compensation of environmental temperature and excellent sensitivity for small changes of a spatial temperature pattern. Thermal signals far below one microwatt are sufficient to trigger a sufficient output voltage change.

### Functional Description

If the active elements of the PIR sensor are exposed to a change in the surrounding temperature field, electrical charges are separated within the sensor elements. The voltage across the sensors controls a J-FET source follower impedance converter and thus modulates the output current of the PIR detector.

The spectral sensitivity of the sensor is controlled by the optical transfer characteristics of the window in the case and has been optimized to pick up radiation of the human body.

### Applications

- . Human body detection
- . Alarm systems
- . Consumer electronics
- . Automatic switches

### Operating Conditions

Operating Temperature 0 °C to +70 °C  
Storage Temperature 0 °C to +80 °C  
Operating Voltage 3 to 6 V

### Electrical and Optical Characteristics

Test Conditions: VDD = 5.0 V

Symbol	Min	Type	Max	Unit
VDD	3	5	6	V
I <sub>dd</sub>		1.2	1.5	mA
Pulse width	250		3000	ms

### Output Conditions


- . Two Output signal
  - . One LED Drive (Can use TTL signal)
  - . One TTL Signal (Low Active)
  - . Multi connection TTL signal (Max 4 PIR Modules)

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**Remark**

Circuit stability time: 30s max.

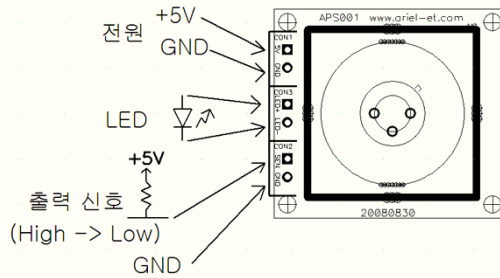
While the circuitry is stabilizing after the power is turned on, the sensor output is not fixed in the “High” state or “Low” state. This is true regardless of whether or not the sensor has detected anything.

**General note**

Due to the high sensitivity of PIR sensor device, it is not recommended to use the module in the following or similar condition.

- A) In rapid environmental changes
- B) In strong shock or vibration
- C) In a place where there are obstruction material(eg, glass)through which IR cannot pass within detection area
- D) Exposed to direct sun light
- E) Exposed to direct wind from a heater or air condition

**Connection Description**



**Assemble PCB layout**



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