

## **PIR Motion Detector Module**



**Item No.: SB412A**

### **General**

SB412A is the latest digital sensor module that based on AM412 digital sensor. It only contain a Fresnel lens,PCB,and a few resistance.

### **Features and Electrical Specification**

Compact size: 18\*10 mm

Supply Voltage: DC3~12V

Quiescent Current :  $\leq 20\mu\text{A}$

Voltage Output: High level signal: 3V, Standby output is 0V or Open-Collector Output

Delay time: 2.3S-80min(customized)

Blockade time:2.3S

Trigger mode: Repeatable triggered

Operation Temperature:  $-20^{\circ}\text{C}\sim+55^{\circ}\text{C}$

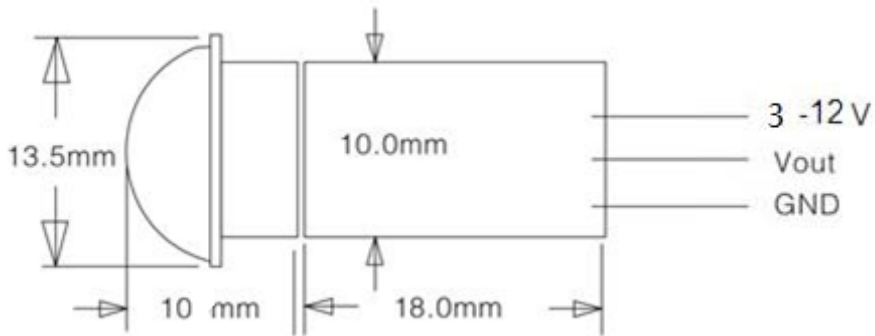
Infrared sensor: dual element, low noise, high sensitivity

Detecting length: 3~5m

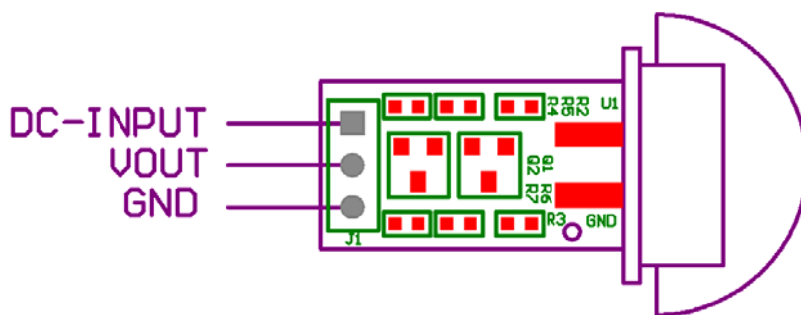
Detecting Angle: $\geq 100^{\circ}$

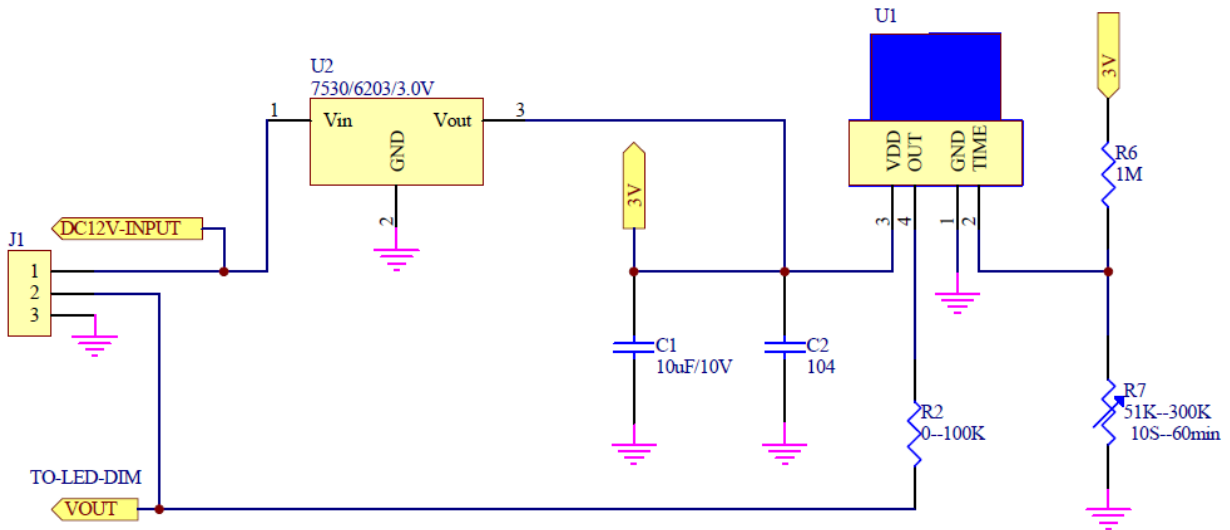
### **Lens information**

Lens diameter: 13.5mm (default), detecting angle $\geq 100^\circ$ , detecting range $< 5M$ .



### **Schematic Diagram**





## Application Note

### Functions:

1. DC-INPUT: working voltage or input supply voltage (range is DC 3V~12V)
2. VOUT: signal output pin. Output: High level signal 3V; Standby 0V.

Voutput can be as same as DC-Input by adding some components

3. Delay time adjustment: the default delay time is 10s, can be adjusted by changing resistor (see following delay time adjustment form)

## Parameter Setting

### 1. Input voltage and Quiescent current

According to the input voltage, the current of the Module  $\leq 20\mu\text{A}$ :

## 2. Delay time adjustment

Step	ONTIME Center Voltage (V)	On time(s)	Voltage(V )	Pull-up resistor	Pull-down resistor
	$(VDD \cdot (\text{Step} \cdot 2) + 3) / 128$	(Typical)	(VDD=3V)		
0	3/128 or lower	2.3	0	NO	0R
1	$(VDD \cdot 2 + 3) / 128$	4.7	0.07	1M	24K
2	$(VDD \cdot 4 + 3) / 128$	7	0.117	1M	39K
3	$(VDD \cdot 6 + 3) / 128$	9.4	0.164	1M	56K
4	$(VDD \cdot 8 + 3) / 128$	18.7	0.21	1M	75K
5	$(VDD \cdot 10 + 3) / 128$	37	0.257	1M	91K
6	$(VDD \cdot 12 + 3) / 128$	56	0.304	1M	110K
7	$(VDD \cdot 14 + 3) / 128$	1min 15 sec	0.351	1M	130K
8	$(VDD \cdot 16 + 3) / 128$	2min 30 sec	0.398	1M	150K
9	$(VDD \cdot 18 + 3) / 128$	5min	0.445	1M	174K
10	$(VDD \cdot 20 + 3) / 128$	7min 29 sec	0.492	1M	200K
11	$(VDD \cdot 22 + 3) / 128$	9min59 sec	0.539	1M	220K
12	$(VDD \cdot 24 + 3) / 128$	19min 58 sec	0.585	1M	240K
13	$(VDD \cdot 26 + 3) / 128$	39min 56sec	0.632	1M	270K
14	$(VDD \cdot 28 + 3) / 128$	59min25 sec	0.679	1M	294K
15	$(VDD \cdot 30 + 3) / 128$ or higher	1hour20min	3	0R	NO

**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 obstructing 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



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