

PIR Motion Detector Module



Item No.: SB612A

General

SB612A is a pyroelectric sensor module which developed for human body detection. An integrated PIR sensor combined with a fresnel lens which is mounted on a compact PCB, and limited components to form the module. Delay time, lux is adjustable. Customization is accepted.

Features and Electrical Specification

Compact size: 24*32 mm

Supply voltage: DC3.0~12V

Quiescent Current : $\leq 50\mu\text{A}$ (include CDS,PIR $\leq 20\mu\text{A}$)

Delay time: 2.3s-80mins, adjustable

Blockade time:2.3S

Trigger mode: Repeatable triggered

Lux: adjustable

Detecting distance: $\leq 8\text{m}$

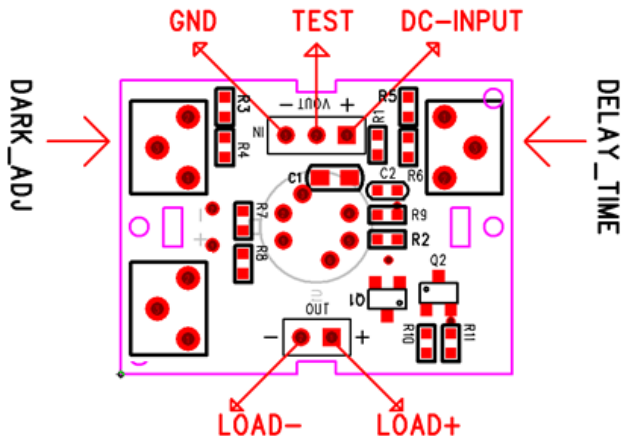
Detecting angle $\leq 120^\circ$

Voltage Output: 3.0V High/Low level signal or Open-Collector Output

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

Infrared sensor: dual element, low noise, high sensitivity

Application Note



Functions:

1. DC-INPUT: supply voltage (DC3.0V~12V)
2. TEST: test pin for output. With output, high level signal (3.0V); no output, low level signal (0V)
3. LOAD+: anode of the load. LOAD-: cathode of the load. Voltage of the load and DC-INPUT are the same. Max current with load is 100mA.
4. DARK_ADJ: Lux adjustment.
5. DELAY_TIME: delay time adjustment.

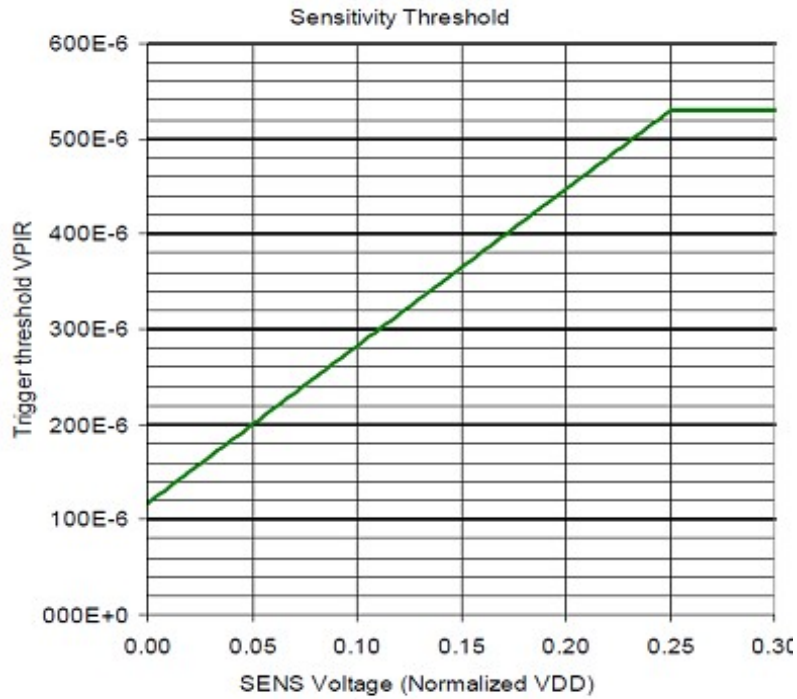
Parameter Setting

1. Input voltage and Quiescent current

The module must be added one LDO.

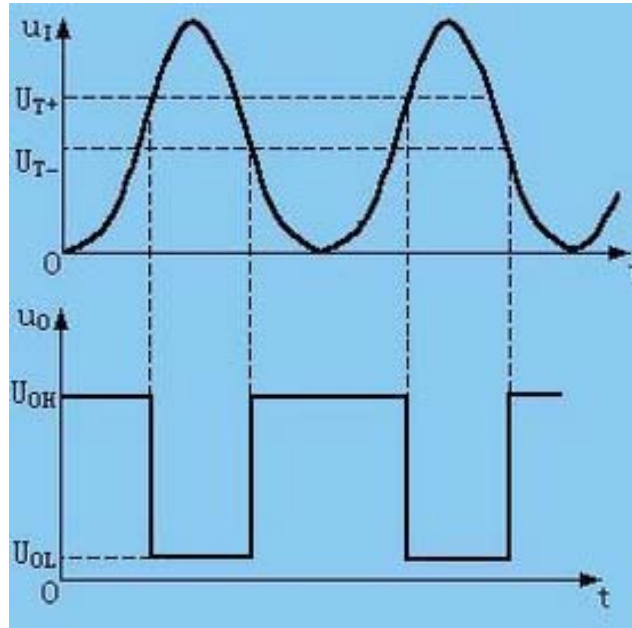
2. Sensitivity adjustment

A voltage applied to the SENS input sets the threshold used to detect a PIR Signal between the PIRIN and NPIPIN inputs. VSS selects the minimum threshold voltage. Any voltage above VDD/4 will select the maximum threshold, which is the least sensitive setting for PIR signal detection.



3. Light adjustment

When OEN voltage from low to high, when it higher $0.4V_{DD}$ (1.2V), V_{out} output enable. OEN voltage from high to low, when lower $0.2V_{DD}$ (0.6V), V_{out} output disable.



4. 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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