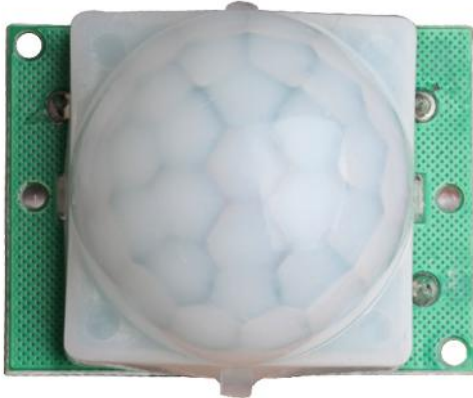


PIR Motion Detector Module



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.

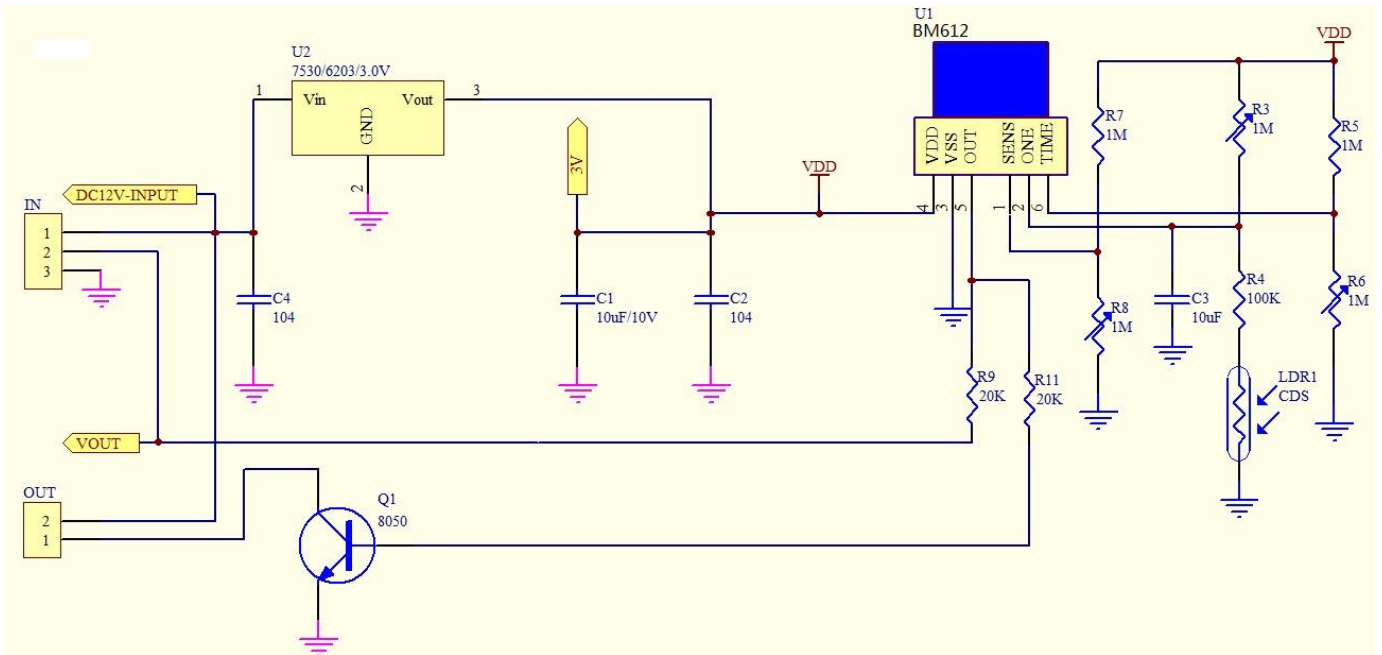
Features and Electrical Specification

Compact size: 24*32 mm
Supply voltage: DC3.3-12V
Current drain : $\leq 30\mu\text{A}$
Delay time: 2s-3600S, adjustable
Blockade time:2S
Trigger mode: Repeatable triggered
Lux: adjustable
Detecting distance: $\leq 8\text{m}$
Detecting angle: $\leq 115^\circ$
Voltage Output: 3.3V High/Low level signal or Open-Collector Output
Operation Temperature: -20°C - $+55^\circ\text{C}$
Infrared sensor: dual element, low noise, high sensitivity

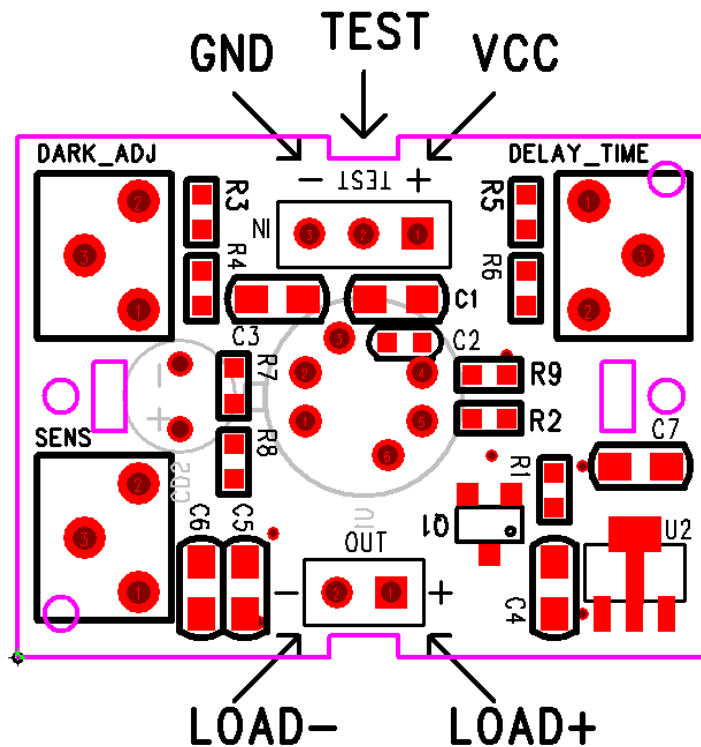
Lens information

Lens diameter: 24mm (default), detecting angle $\leq 115^\circ$, detecting range $< 8\text{M}$.

Schematic Diagram



Application Note



Functions:

1. DC-INPUT: supply voltage (DC3.3V-12V)
2. TEST: test pin for output. With output, high level signal (3.3V); 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.

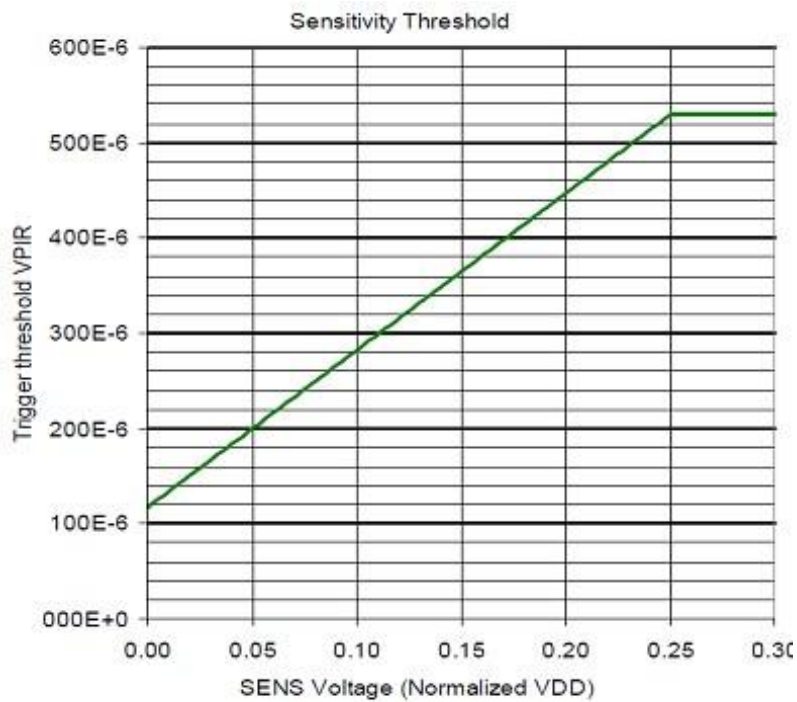
Parameter Setting

1. Input voltage and Quiescent current

The module must be added one LDO.

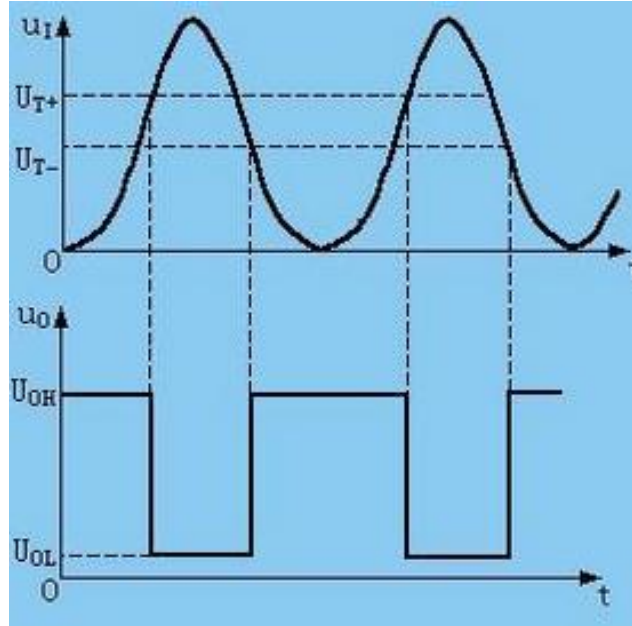
2. Sensitivity adjustment

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.



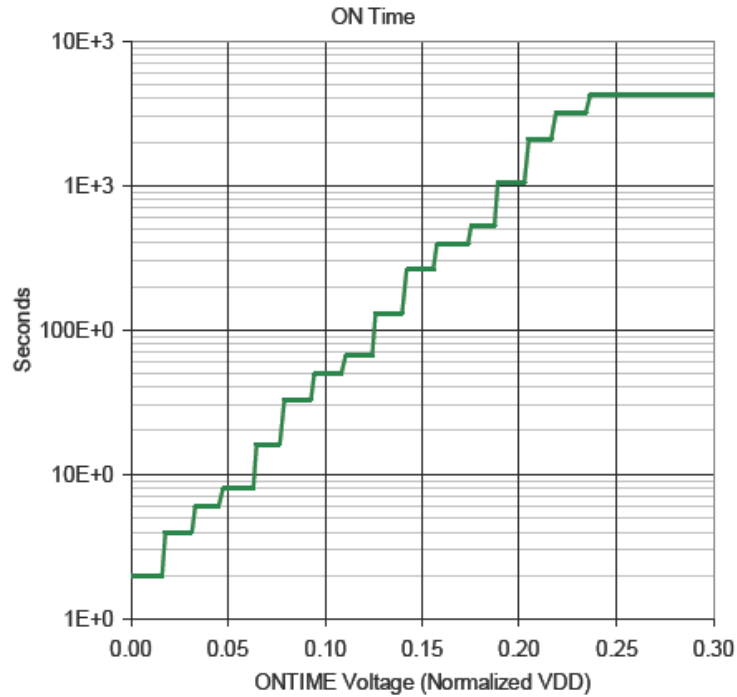
3. Light adjustment

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



4. Delay time adjustment

No	Time (Td) (sec) (典型值)	On-time Voltage (VDD)	On-time center Voltage (VDD)	Pull-down- Resistor (Ω) (Pull-up=1M)	
				上拉电阻 RH	下拉电阻 RL
1	2	0~1/32VDD	1/64VDD	不贴/1M	0R
2	5	1/32VDD~2/32VDD	3/64VDD	1M	51K
3	10	2/32VDD~3/32VDD	5/64VDD	1M	82K
4	15	3/32VDD~4/32VDD	7/64VDD	1M	124K
5	20	4/32VDD~5/32VDD	9/64VDD	1M	165K
6	30	5/32VDD~6/32VDD	11/64VDD	1M	210K
7	45	6/32VDD~7/32VDD	13/64VDD	1M	255K
8	60	7/32VDD~8/32VDD	15/64VDD	1M	309K
9	90	8/32VDD~9/32VDD	17/64VDD	1M	360K
10	120	9/32VDD~10/32VDD	19/64VDD	1M	422K
11	180	10/32VDD~11/32VDD	21/64VDD	1M	487K
12	300	11/32VDD~12/32VDD	23/64VDD	1M	560K
13	600	12/32VDD~13/32VDD	25/64VDD	1M	634K
14	900	13/32VDD~14/32VDD	27/64VDD	1M	732K
15	1800	14/32VDD~16/32VDD	29/64VDD	1M	825K
16	3600	15/32VDD~16/32VDD	31/64VDD	1M	953K



Graph 2: REL Output On Time in seconds vs. ONTIME pin voltages normalized to VDD.

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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