

PIR Motion Detector Module



Item No.: SB00622A-2

General

SB00622A-2 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 current: DC3.3V-15V

Current drain :< 1mA

Voltage Output: High/Low level signal:3V, Standby output is 0V
Input 3-24V, Output 3-24V

TTL output: TTL output can be directly connected to micro-controller or logic device

High sensitivity

Delay time: 2s-70mins(adjustable)(Turn right will reach max.)

Operation Temperature: -20-85°C

Infrared sensor: dual element, low noise, high sensitivity

Detecting length: 5-6m

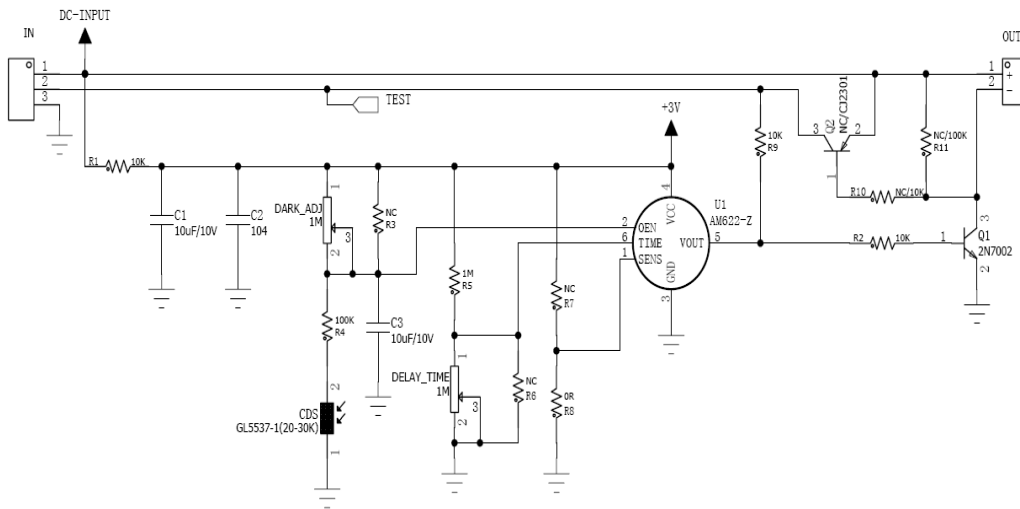
Detecting Angle: 120°

Light sensor: included(adjustable)(Turn right will reach max.)

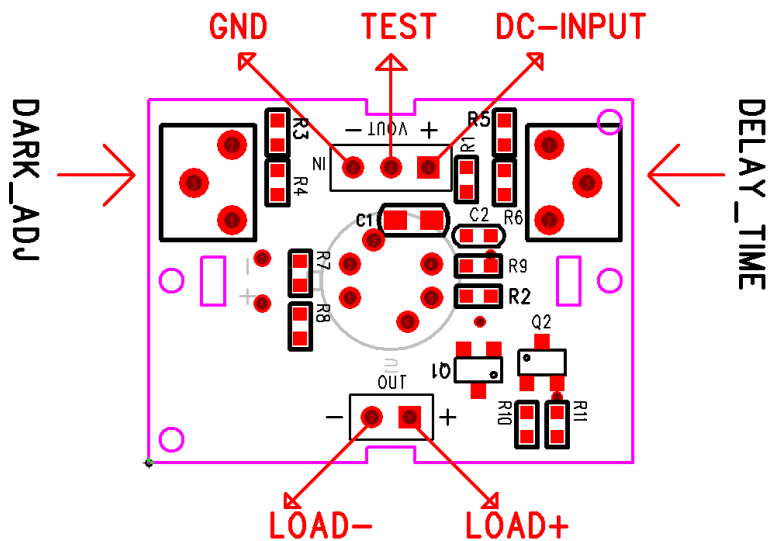
Lens information

Lens diameter: 23.5mm (default), detecting angle \leq 120°, detecting range<8M.

Schematic Diagram



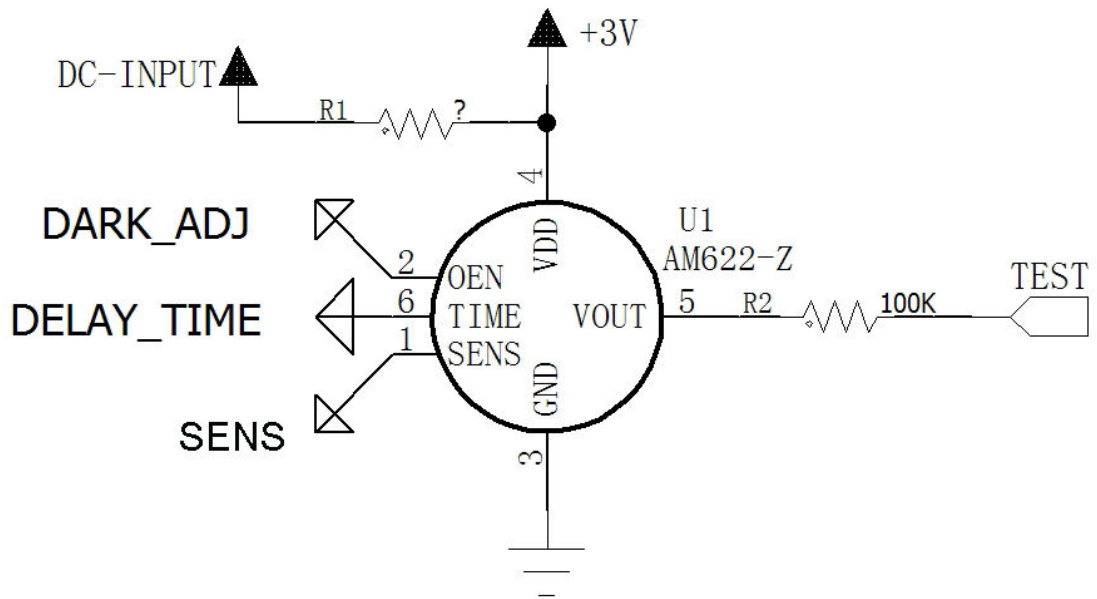
Application Note



Note:

1. DC-INPUT: supply voltage (DC 3.3V-15V)
2. TEST: test pin for output. With output, high level signal (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. Turn it to the end by clock-wise, sensor detects human both day and night. Turn it to the end by counter-clock-wise, sensor only detect at 0lux (night).
5. DELAY_TIME: delay time adjustment. Turn it to the end by clock-wise, delay is 2S (Minimum); Turn it to the end by counter-clock-wise, delay is 70min (Max).

AM622 Functional Diagram



Parameter Setting

1. Input voltage and Quiescent current

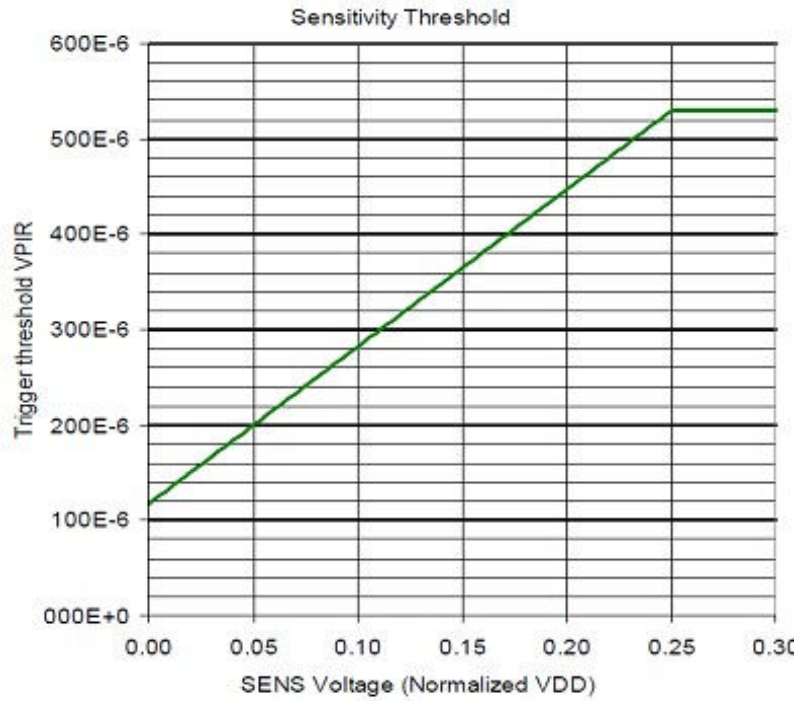
Want to make the quiescent current lower, the Q1 can not be triode but MOS. also need adjust the R1 according to the input voltage, the current of R1 < 100uA:

Input voltage	R1
3.3V	3K
4V	10K
5V	20K
6V	30K
9V	68K
12V	100K
15V	120K

If use Triode, R2 must be added.

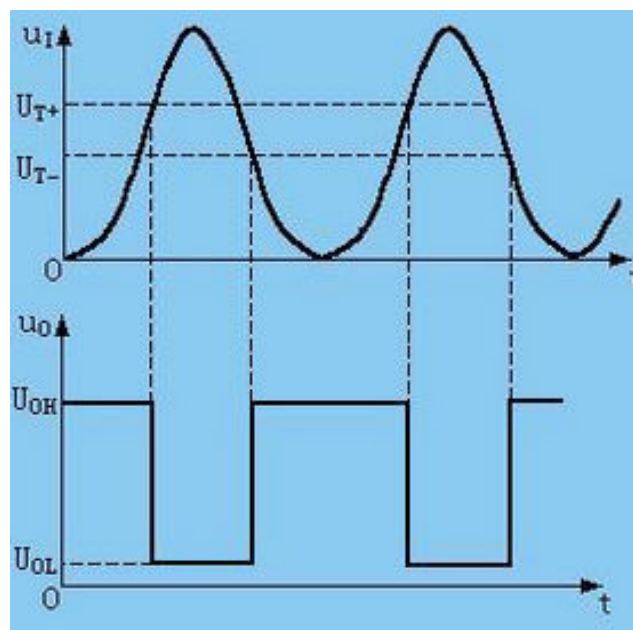
2. Sensitivity adjustment

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.



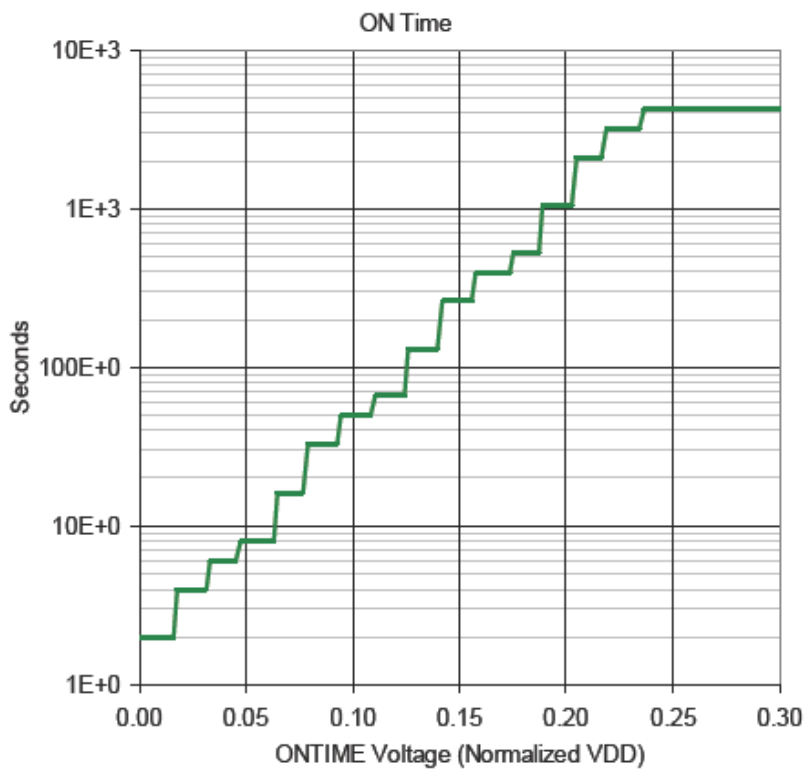
3. Light adjustment

VDD=3V, OEN voltage from low to high, when it higher 0.4VDD(1.2V), Vout output enable. OEN voltage from high to low, when lower 0.2VDD(0.6V), Vout output disable.



4. Delay time adjustment

Pin voltage	PIN ADC count	On time in seconds	On time	Pull-up resistor	Pull-down resistor
Vdd*1/128 or less	0	2	2 sec	Connect GND	
Vdd*3/128	1	4	4sec		
Vdd*5/128	2	6	6sec		
Vdd*7/128	3	8	8 sec	1M	62K
Vdd*9/128	4	16	16sec	1M	75K
Vdd*11/128	5	33	32 sec	1M	91K
Vdd*13/128	6	49	49 sec	1M	110K
Vdd*15/128	7	66	1mini 5 sec	1M	130K
Vdd*17/128	8	131	2 min 11 sec		
Vdd*19/128	9	262	4 min 22 sec		
Vdd*21/128	10	393	6 min 33 sec		
Vdd*23/128	11	524	8 min 44 sec		
Vdd*25/128	12	1049	17 min 28 sec		
Vdd*27/128	13	2097	34 min 57 sec		
Vdd*29/128	14	3146	52 min 25 sec		
Vdd*31/128 or above	15	4194	1hour 10min	Connect VDD	



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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