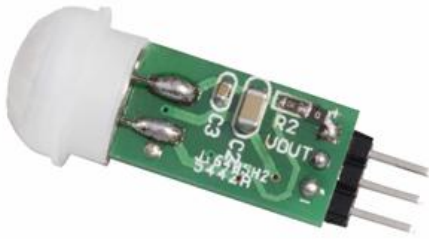


PIR Motion Detector Module



Item No.: SB00422A-1

General

SB00422A-1 is the latest pir sensor module that based on AM422 smart pir sensor. It only contains a fresnel lens ,PCB, and a few components, easy to use and test.

Features and Electrical Specification

Compact size: 18*10 mm

Supply current: DC3.3-15V

Current drain :< 1mA

Voltage Output: High level signal: 3V, Standby output is 0V

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

High sensitivity

Delay time: 2S-70min(customized)

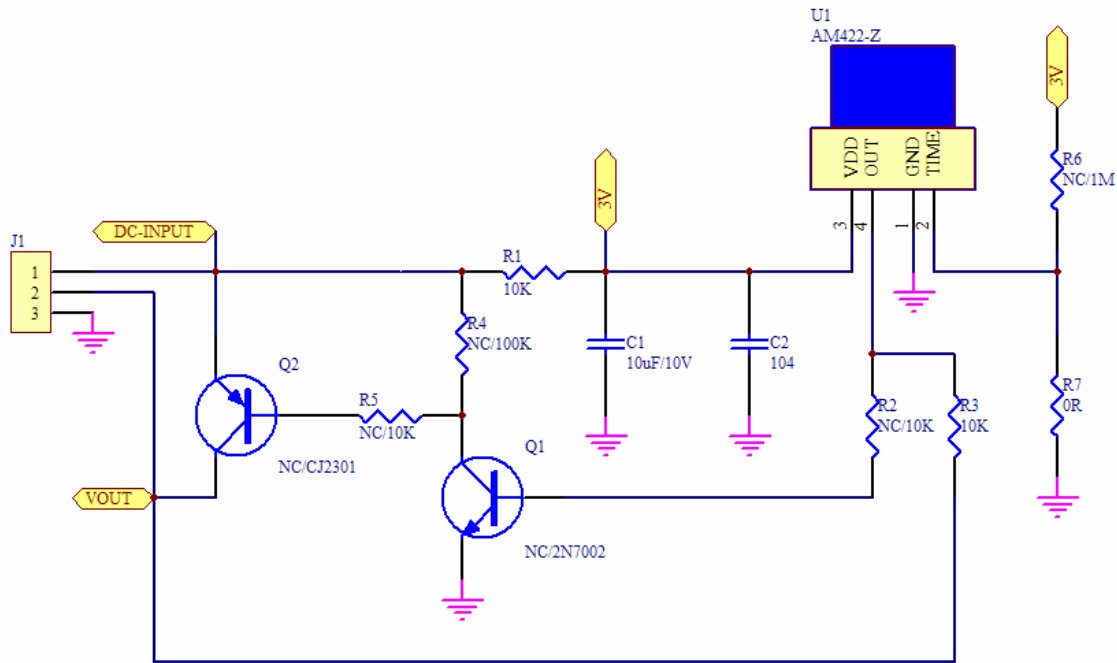
Operation Temperature: -20-60°C

Infrared sensor: dual element, low noise, high sensitivity

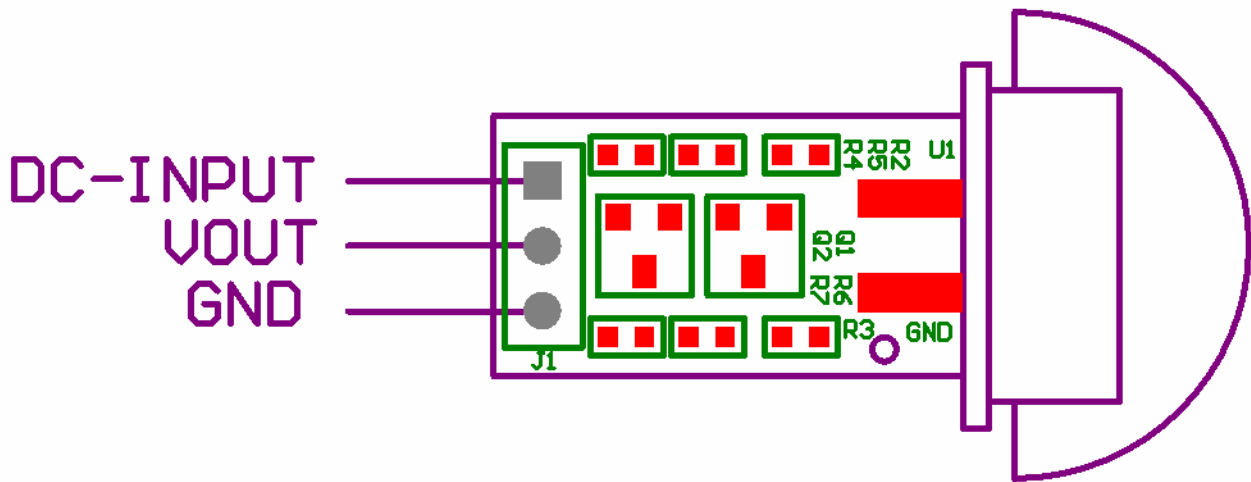
Detecting length: 2-5m

Detecting Angle:120°

Circuit



Module information:



Note:

1. DC-INPUT: supply voltage (DC 3.3V-15V)
2. Vout: default is for signal output.. With output, high level signal (3V); no output, low level signal (0V). Also can add other components to make Vout=DC-INPUT when there is an output.
3. Delay time: customized by using different resistors. Default delay is 2S.

Parameters setting

Supply voltage and static current

If smaller current is needed, change the load driver Q1 to MOS transistor, no triode. Also need to adjust the R1 according to the supply voltage, to make the current of R1 less than 100uA. See the table below:

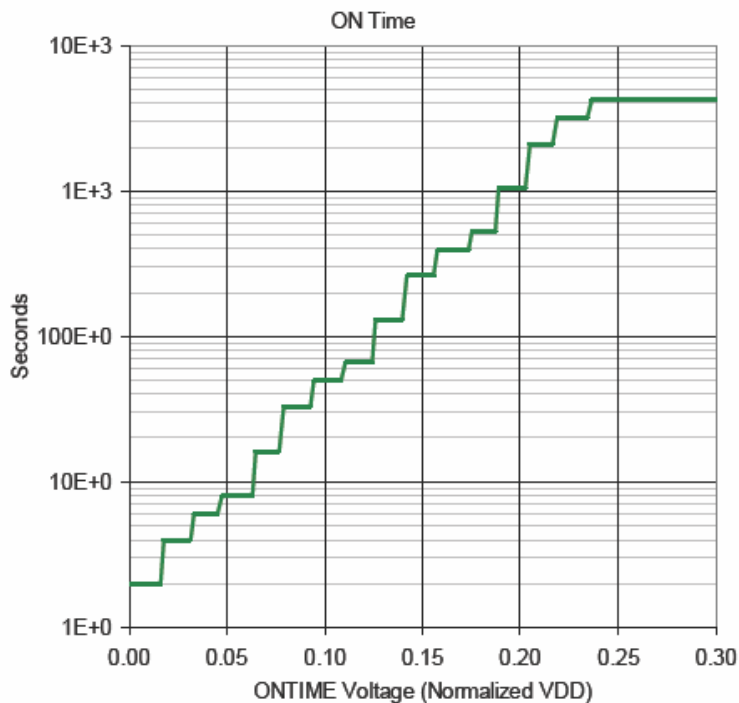
Supply voltage	Current limit resistor
3.3V	3K
4V	10K
5V	20K
6V	30K
9V	68K
12V	100K
15V	120K

If use triode as Q1, there must be a current limit resistor as R2.

On Time

A voltage applied to the ONTIME input set the time the REL output is active with a single trigger event. Any voltage above $V_{DD}/4$ will select the maximum on time.

Pin voltage	PIN ADC count	ON Time in seconds	ON Time
$V_{DD} * 1/128$ or less	0	2	2 sec
$V_{DD} * 3/128$	1	4	4 sec
$V_{DD} * 5/128$	2	6	6 sec
$V_{DD} * 7/128$	3	8	8 sec
$V_{DD} * 9/128$	4	16	16 sec
$V_{DD} * 11/128$	5	33	32 sec
$V_{DD} * 13/128$	6	49	49 sec
$V_{DD} * 15/128$	7	66	1 min 5 sec
$V_{DD} * 17/128$	8	131	2 min 11 sec
$V_{DD} * 19/128$	9	262	4 min 22 sec
$V_{DD} * 21/128$	10	393	6 min 33 sec
$V_{DD} * 23/128$	11	524	8 min 44 sec
$V_{DD} * 25/128$	12	1049	17 min 28 sec
$V_{DD} * 27/128$	13	2097	34 min 57 sec
$V_{DD} * 29/128$	14	3146	52 min 25 sec
$V_{DD} * 31/128$ or above	15	4194	1 hour 10 min



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