



Pyroelectric Infrared Radial Sensor

TYPE: AM312
NANYANG SENBA OPTICAL AND ELECTRONIC CO., LTD.

Digital Intelligent Passive Infrared Sensor AM312

AM312 is a new digital intelligent PIR sensor. This Smart digital detector offers a complete motion detector solution, with all electronic circuitry built into the detector housing. Only a power supply and power-switching components need to be added to make the entire motion switch.

■ Features and Benefits

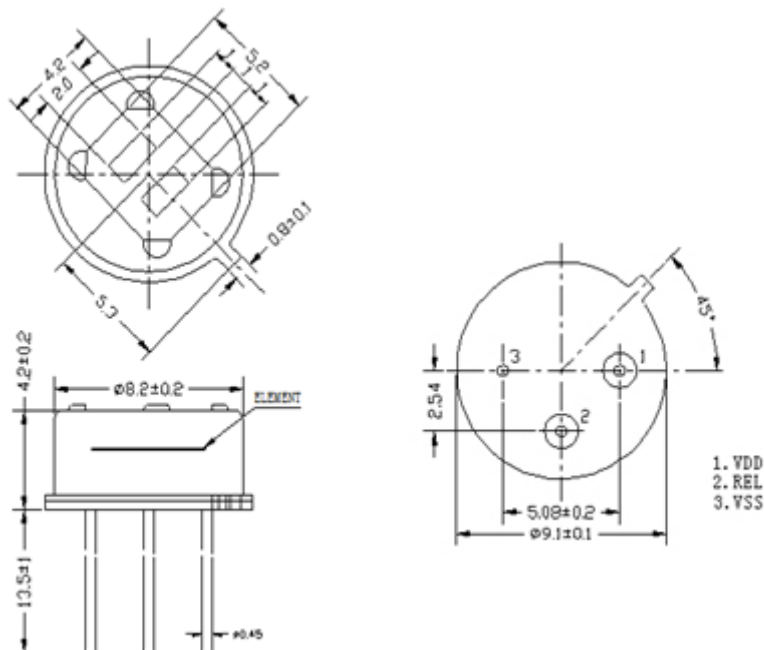
- Digital signal processing (DSP)
- Two-way differential high impedance sensor input and temperature compensation
- Built-in filter, screen the interference by other frequency
- Schmidt REL output

■ Applications

USB Alarms, PIR motion detection, Intruder detection, Occupancy detection,

Motion sensor lights, Network camera, Car-security system etc.

■ Dimension



■ Technical Data

1. Maximum Ratings

Characteristics	Symbol	Min. Value	Max. Value	Unit	Remarks
Supply Voltage	VDD	-0.3	3.6	V	
Working Temperature	TST	-20	85	°C	
Current into any pin	Into	-100	100	mA	
Storage Temperature	TST	-40	125	°C	

2. Working Conditions (T=25°C, Vdd=3V, Except other requirements)

Characteristics	Symbol	Min.	Type	Max.	Unit	Remarks
Supply Voltage	VDD	2.7	3	3.3	V	
Working Current	IDD	12	15	20	μA	
Sensitivity Threshold Value	Vsens		120		μV	Non-adjustable

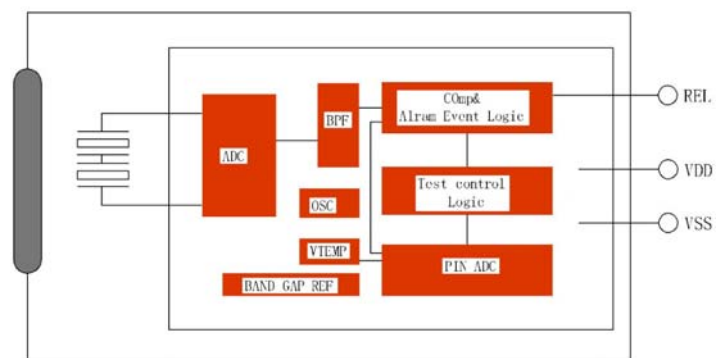
Output REL

Output Low Current	IOL	10			mA	VOL<1V
Output High Current	IOH			-10	mA	VOH>(VDD-1V)
REL Low Level Output Blockade Time	TOL		2.3		s	Non-adjustable
REL High Level Output Delay Time	TOH		2.3		s	

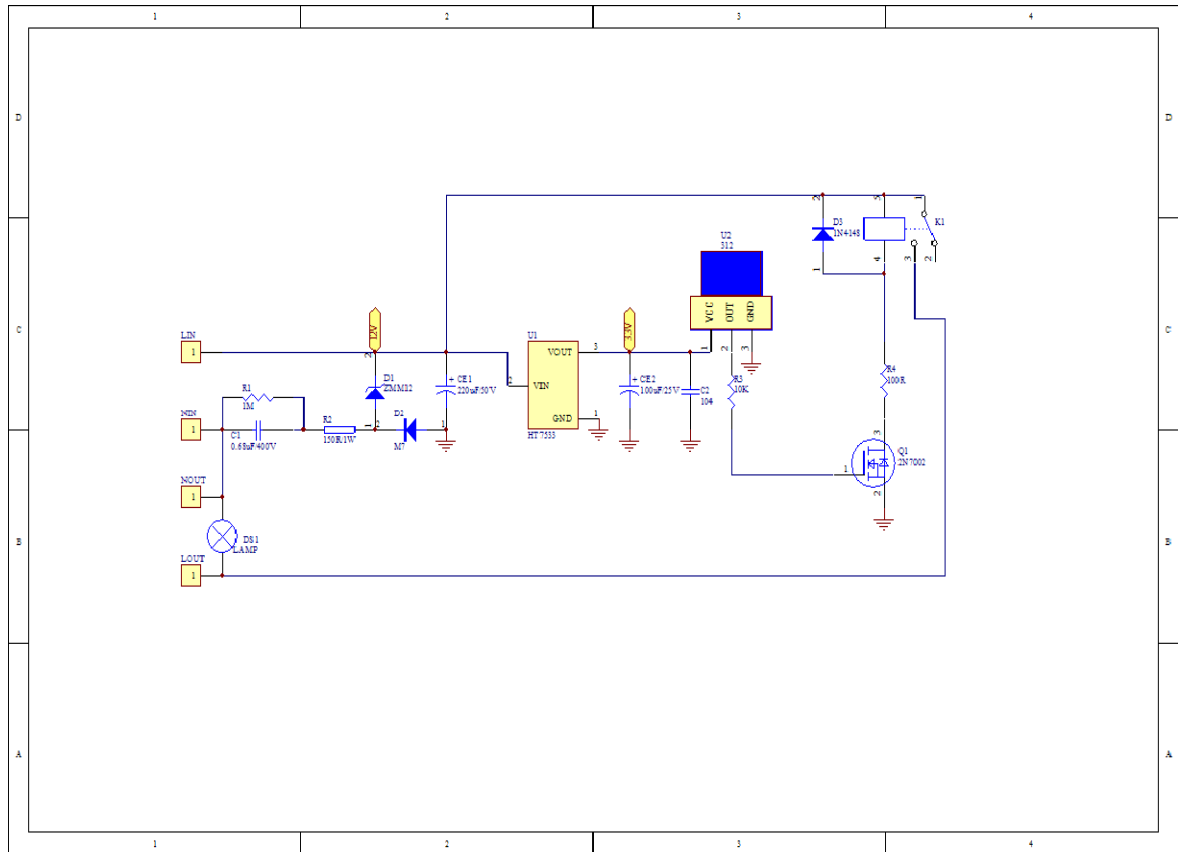
Oscillator & Filter

Low pass filter cut-off frequency				7	Hz	
High pass filter cut-off frequency				0.44	Hz	
Oscillator frequency on Chip	FCLK			64	kHz	

Interior Block Diagram

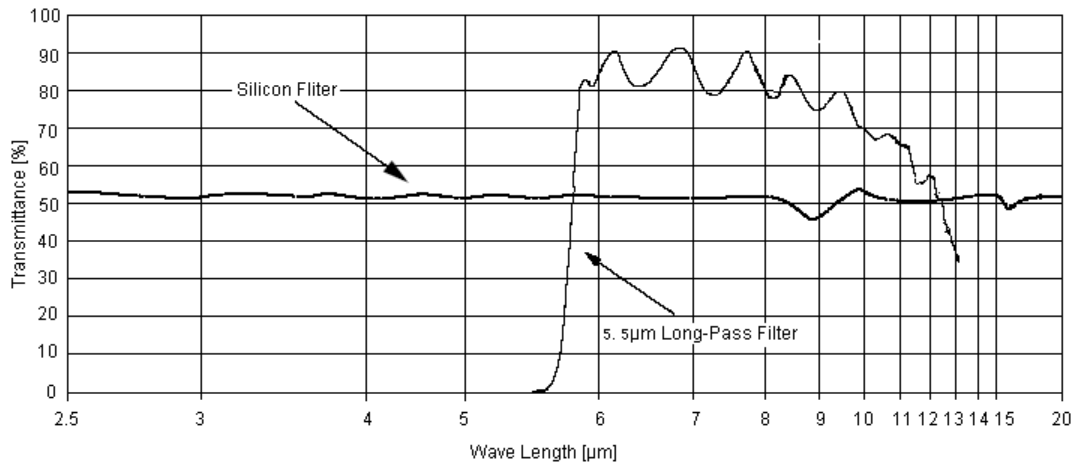


■ Typical Application



Notes: This is only reference circuit for PIR Sensor AM312.

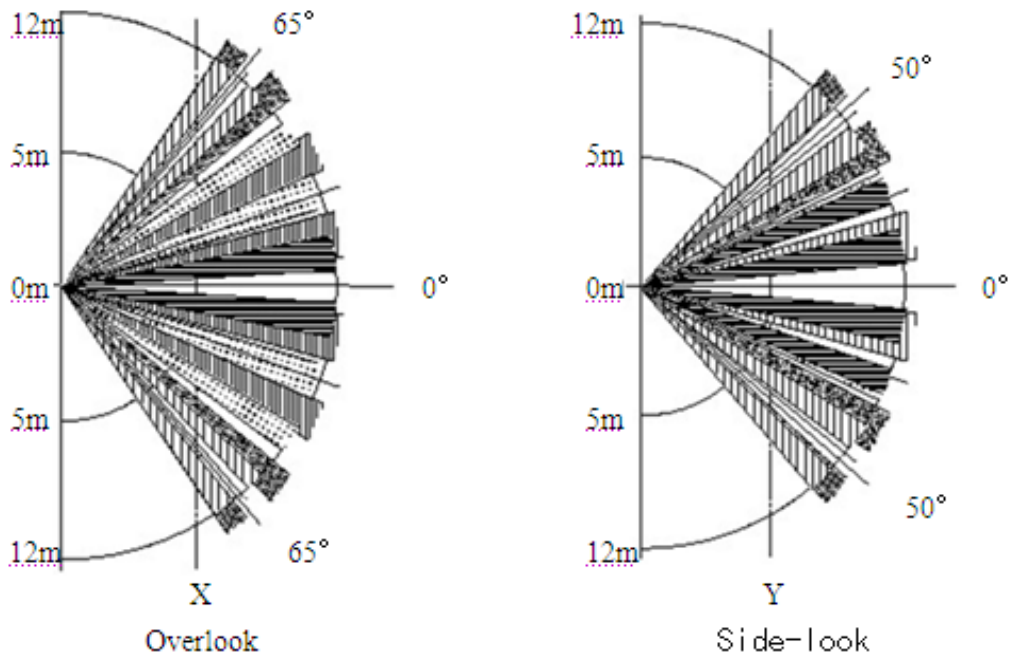
■ Spectral Response of Window Materials



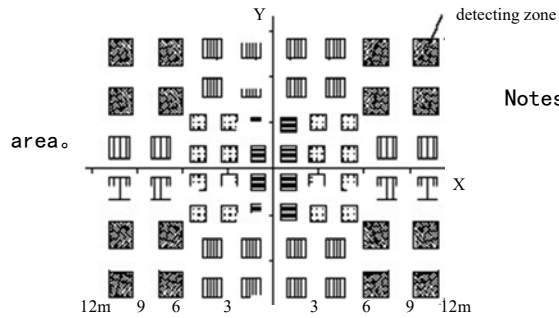
Notice:

The typical average transmissivity curve of 5.5µm pass IR filter is figured, which is vacuumed on silicon filter.

View of Field



X-Y sectional view



Notes: 1. X-Y sectional view represent the detecting

2. Objects with temperature difference can be Detected in the vertical level.

■ Directions for Use

- Pay attention to the mounting direction of the sensor's element and the size of element ichnography. Combining with focus of Fresnel lens can achieve a optimal optics design.
- The ex-factory parameter of sensor is gained by testing in the condition of standard Black Body and the relevant circuit after one minute steadying-time.
- The detecting distance of sensor is a multidimensional function, consisting of ambient temperature, temperature of moving target , target distance of Fresnel Lens', ambient humidity , amplifier gain and comparison voltage.
- The welding shall be made at 4mm above as per the recommendation for lead wire of sensor seat, and the welding should be completed in the shortest possible time.
- Do not touch the window by hand and the hard things directly.
- Strong shake and static should be avoided.
- 100pcs per small package ,3000pcs per large package.