



# **Pyroelectric Infrared Radial Sensor**

**TYPE: Am412  
NANYANG SENBA OPTICAL AND ELECTRONIC CO., LTD.**

## Digital Intelligent Passive Infrared Sensor AM412

AM412 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, a timer is included.

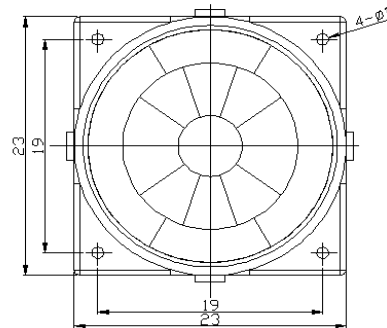
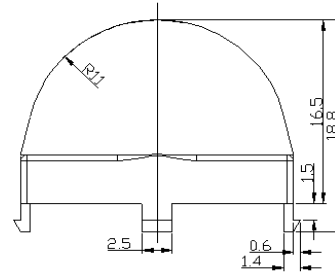
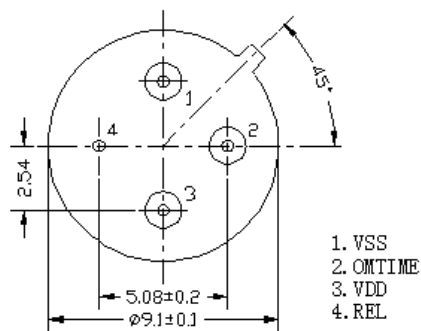
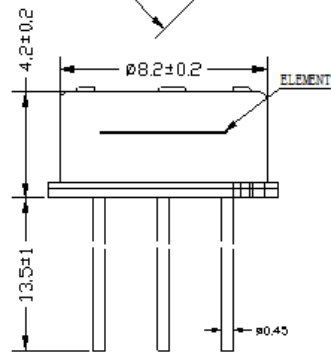
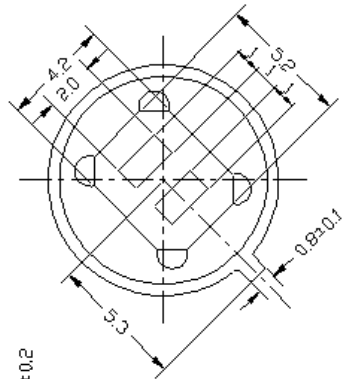
### ■ Features and Benefits

- Digital signal processing (DSP)
- Power adjustable, save more energy
- Two-way differential high impedance sensor input
- Built-in filter, screen the interference by other frequency
- Excellent power supply rejection, Insensitive to RF interference
- Schmidt REL output
- Low voltage, low power consumption, instantaneous settling after power up

### ■ Applications

- Toys
- Digital photo frame
- TV, Refrigerator, Air-conditioner
- USB Alarms
- PIR motion detection
- Intruder detection
- Occupancy detection
- Motion sensor lights
- Computer monitor
- Security system
- Automatic control
- Corridor
- Stairs Lights etc.

## Dimension



PIR Dimension (A)

Fresnel Lens Dimension (B)

Notes: Dimension A can be used with Dimension B.

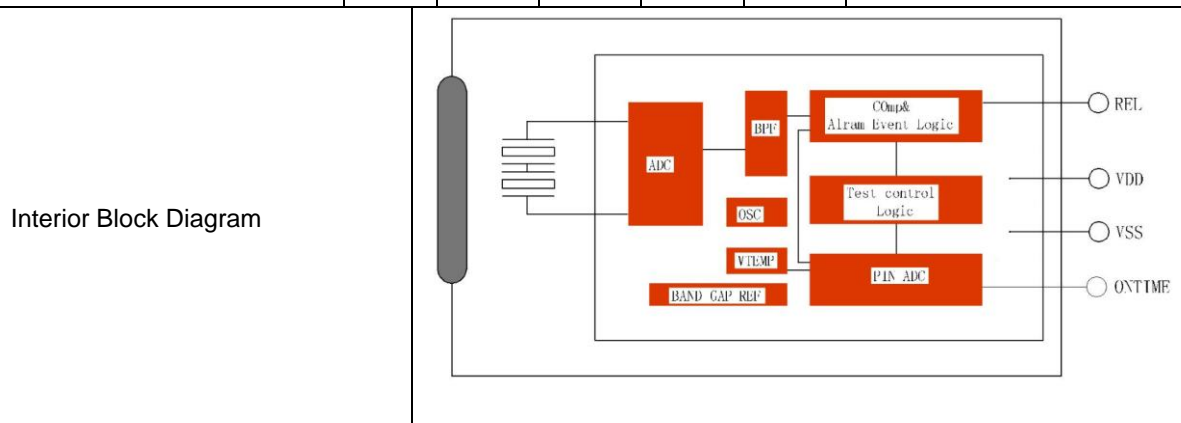
## ■ Technical Data

### 1. Maximum Ratings

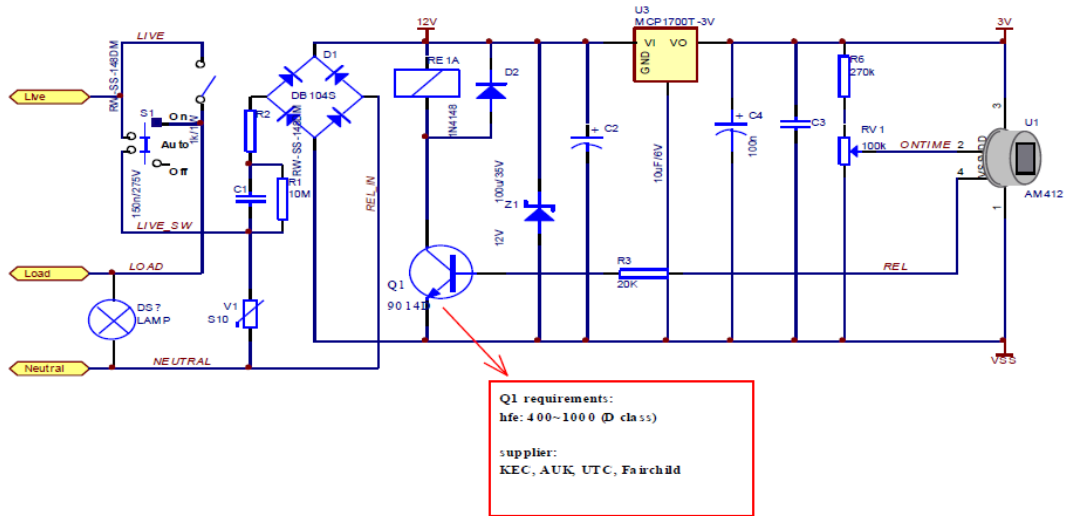
Characteristics	Symbol	Min. Value	Max. Value	Unit	Remarks
Supply Voltage	V <sub>DD</sub>	2.7	3.3	V	
Working Temperature	T <sub>ST</sub>	-20	85	°C	
Current into any pin	I <sub>INTO</sub>	-100	100	mA	
Storage Temperature	T <sub>ST</sub>	-40	125	°C	

### 2. Working Conditions (T=25°C, V<sub>DD</sub>=3V, Except other requirements)

Characteristics	Symbol	Min.	Type	Max.	Unit	Remarks
Supply Voltage	V <sub>DD</sub>	2.7		3.3	V	I <sub>R</sub> =0.5mA
Working Current	I <sub>DD</sub>		12	15	μA	
<b>Output REL</b>						
Output Low Current	I <sub>OL</sub>	10			mA	V <sub>OL</sub> <1V
Output High Current	I <sub>OH</sub>			-10	mA	V <sub>OL</sub> >(V <sub>DD</sub> -1V)
<b>Input ONTIME</b>						
Voltage Input Range		0		V <sub>DD</sub>	V	0V to ¼ V <sub>DD</sub>
Input Bias Current		-1		1	μA	
<b>Oscillator &amp; Filter</b>						
Low pass filter cut-off frequency				7	Hz	
High pass filter cut-off frequency				0.44	Hz	
Oscillator frequency on Chip	F <sub>CLK</sub>			64	kHz	

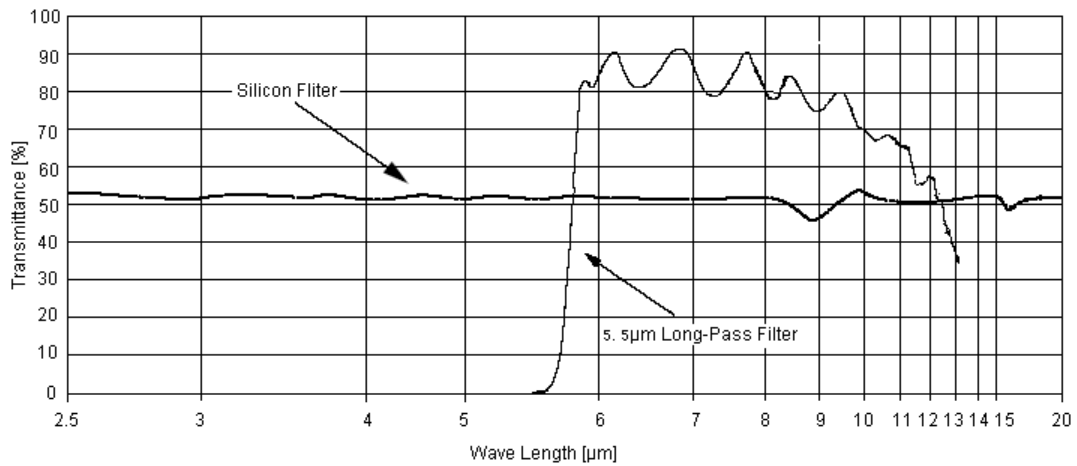


■ Typical Application



Notes: This is only for reference circuit of Am412 PIR Sensor.

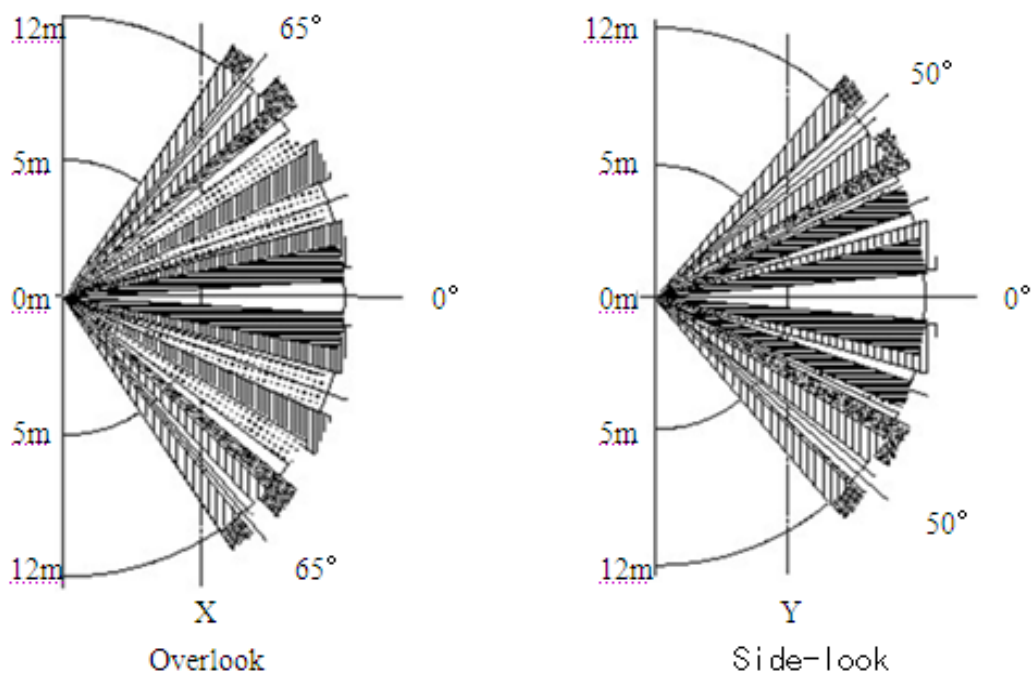
## ■ Spectral Response of Window Materials



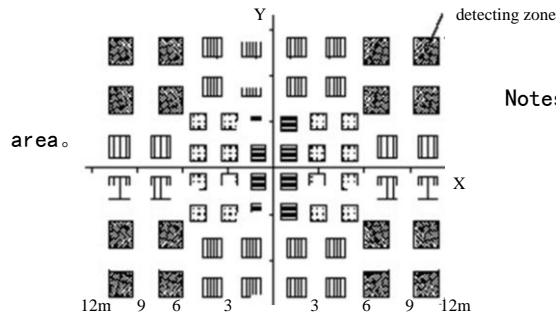
Notice:

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

## ■ View of Field



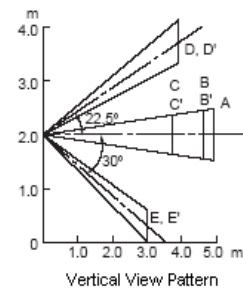
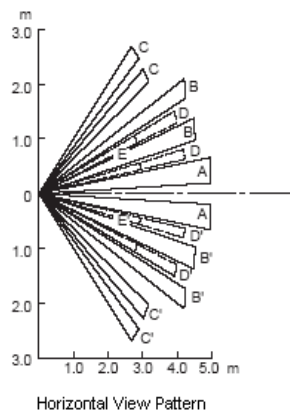
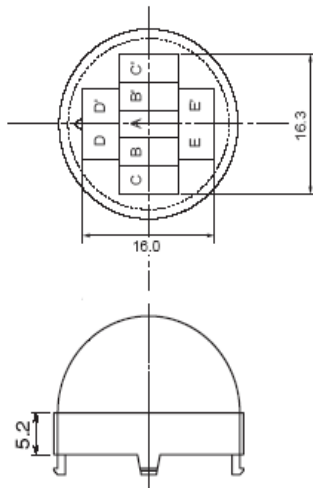
X-Y sectional view



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

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

■ Fresnel Lens for Human Body Detection



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