



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.

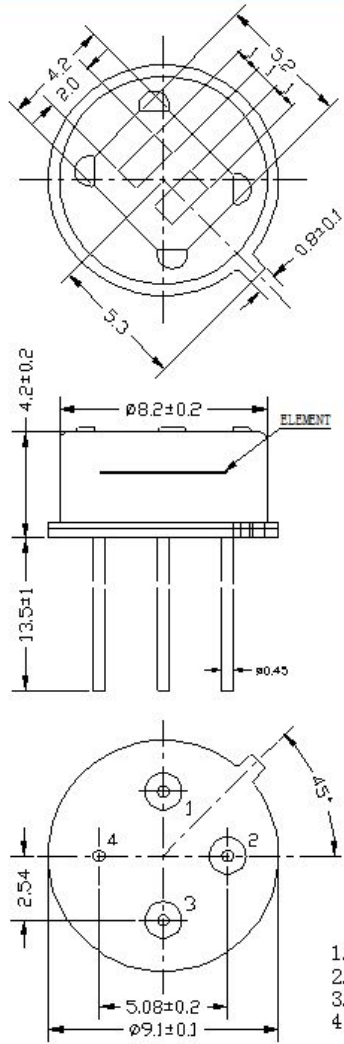
■ Features and Benefits

- 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

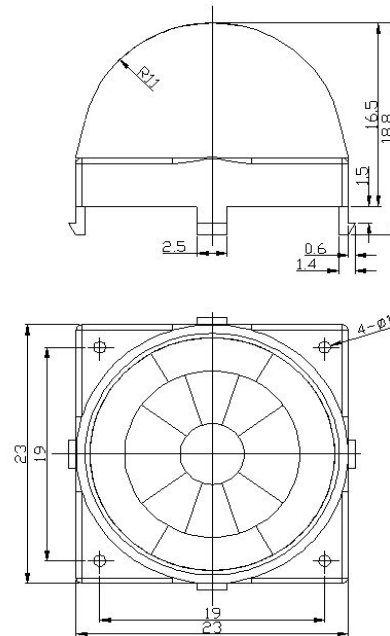
■ Applications

- 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

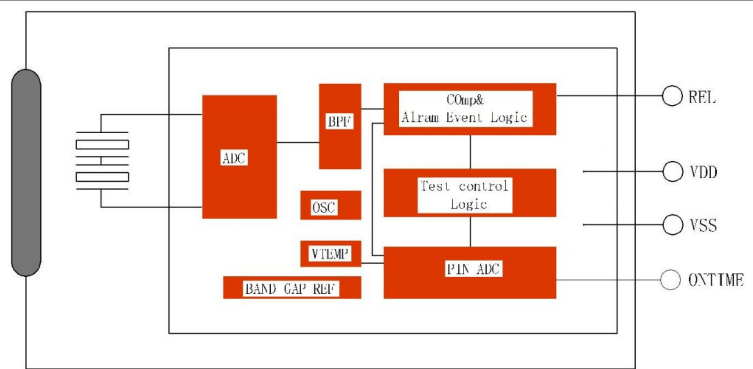
1. Maximum Ratings

Characteristics	Symbol	Min. Value	Max. Value	Unit	Remarks
Supply Voltage	V _{DD}	2.7	3.3	V	
Working Temperature	T _{ST}	-20	85	°C	
Current into any pin	I _{nto}	-100	100	mA	
Storage Temperature	T _{ST}	-40	125	°C	

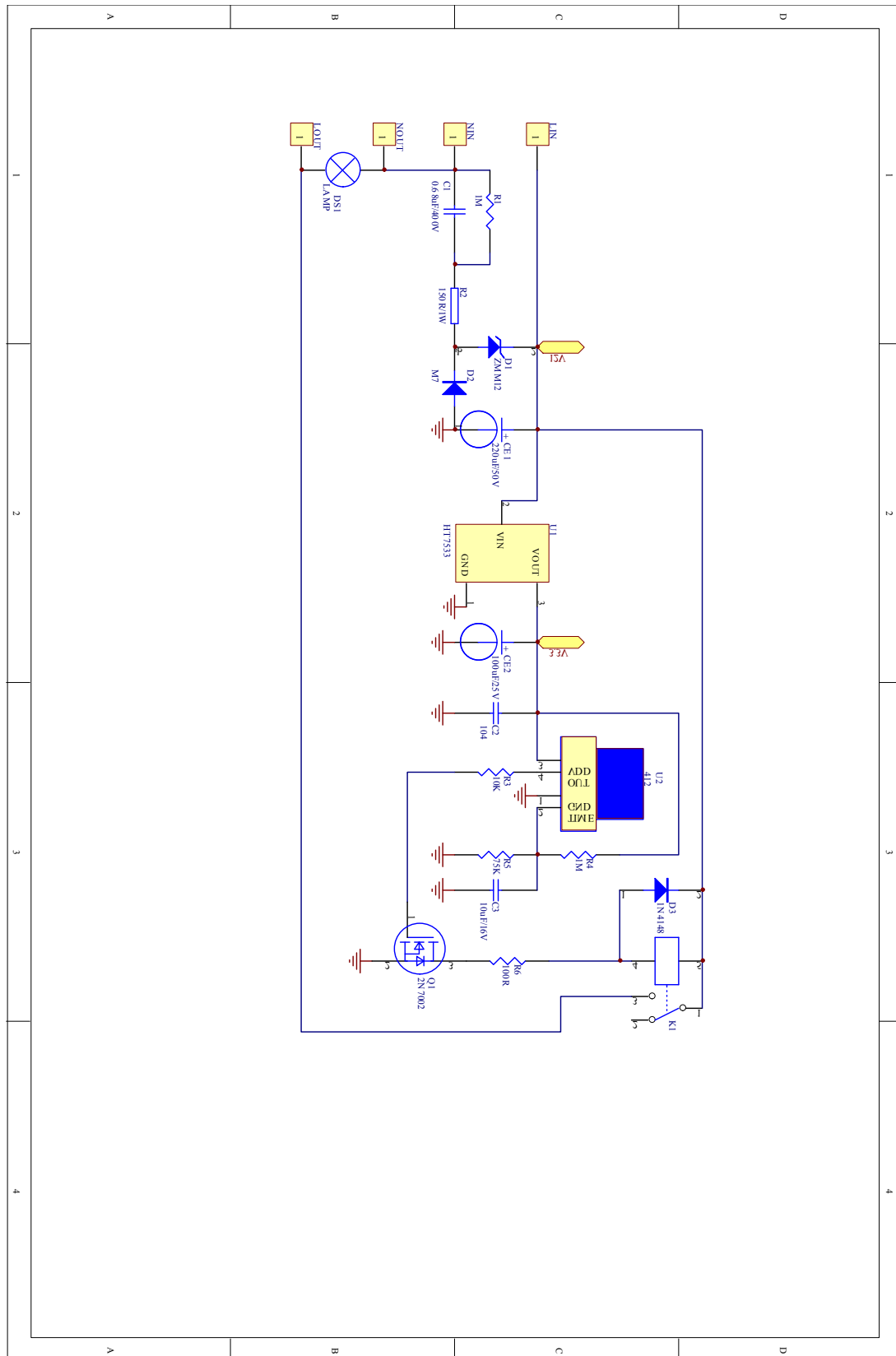
2. Working Conditions (T=25°C, V_{dd}=3V, Except other requirements)

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

Interior Block Diagram

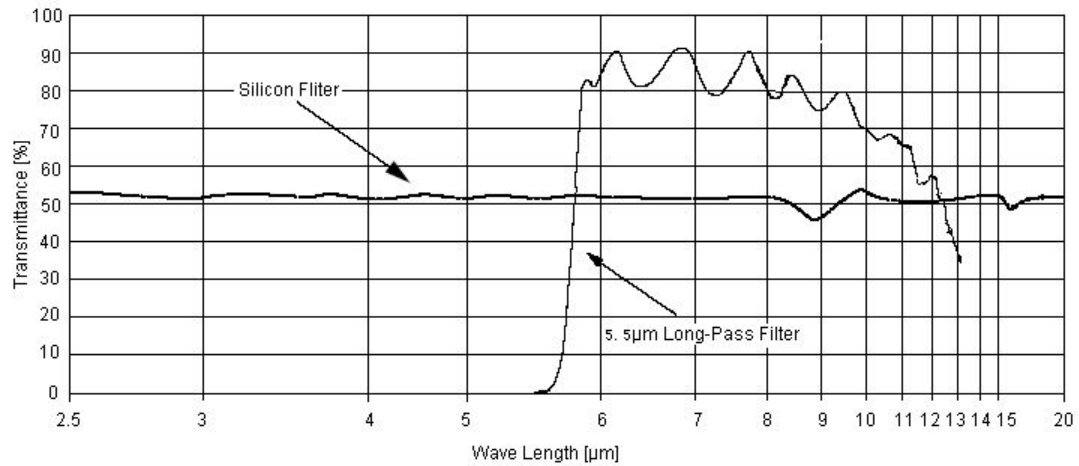


Typical Application



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

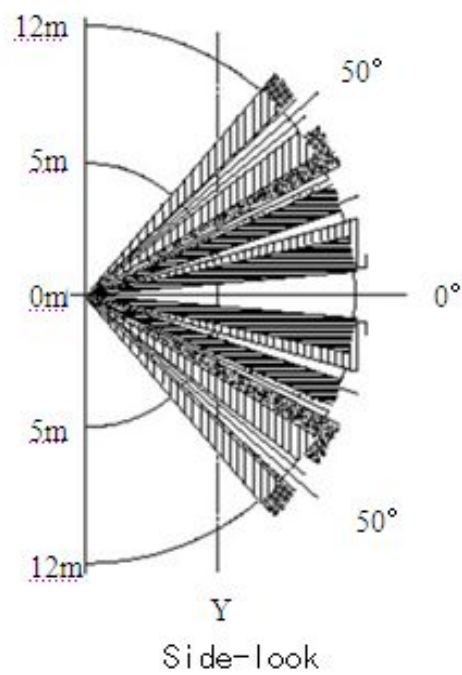
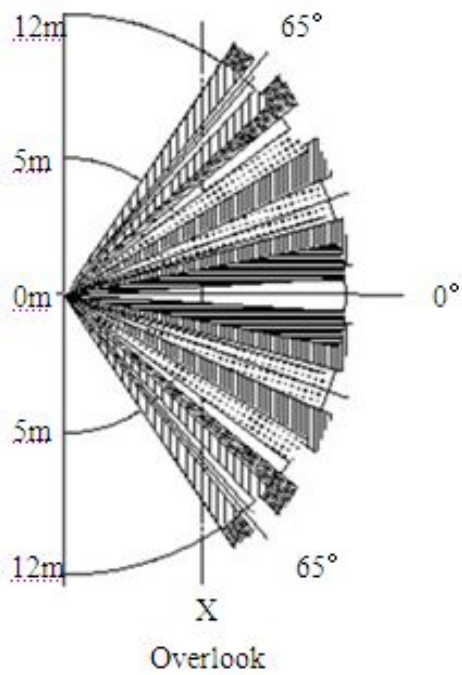
■ Spectral Response of Window Materials



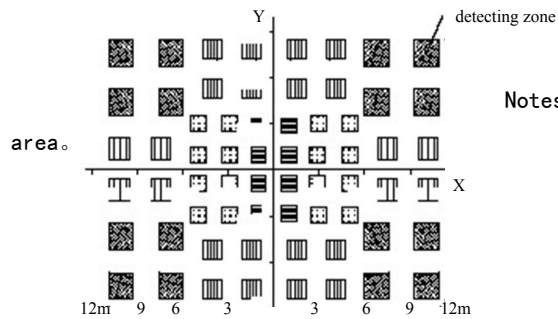
Notice:

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

■ View of Field

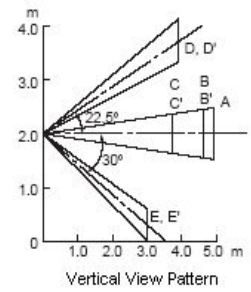
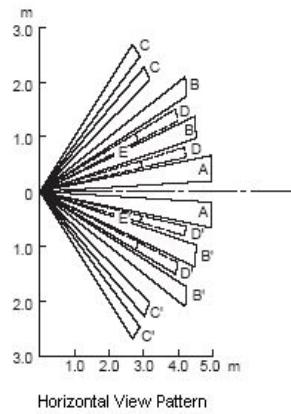
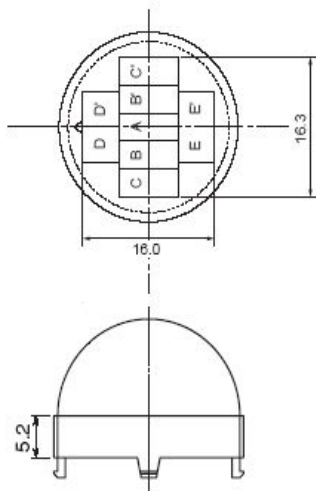


X-Y sectional view



- Notes:
- 1.X-Y sectional view represent the detecting area.
 - 2.Objects with temperature difference can be Detected in the vertical level.

■ Fresnel Lens for Human Body Detection



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