



Pyroelectric Infrared Radial Sensor

TYPE: Am422
NANYANG SENBA OPTICAL AND ELECTRONIC CO., LTD.



Digital Intelligent Passive Infrared Sensor AM422

AM422 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.

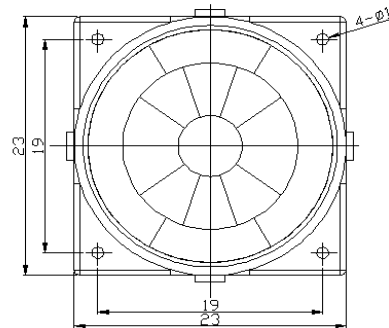
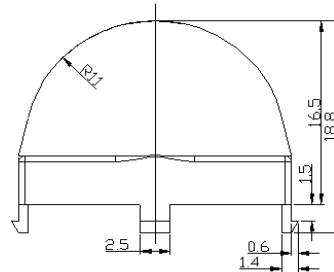
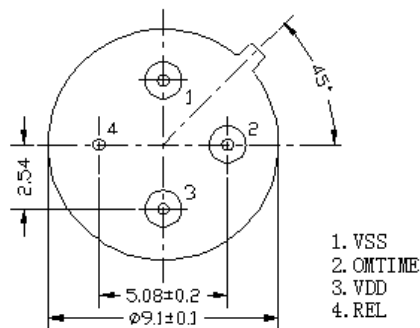
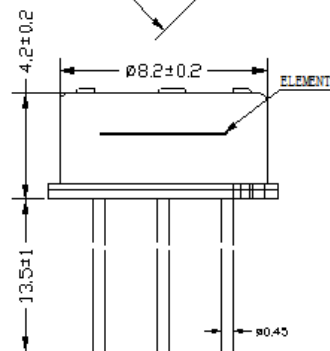
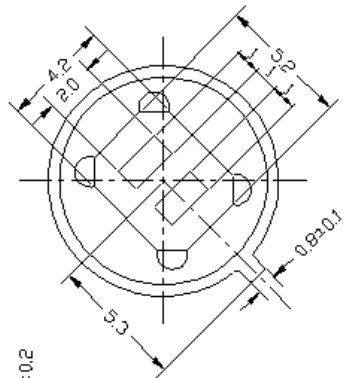
n Features and Benefits

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

n Applications

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

n Dimension



PIR Dimension (A)

Fresnel Lens Dimension (B)

Notes: Dimension A can be used with Dimension B.

n Technical Data

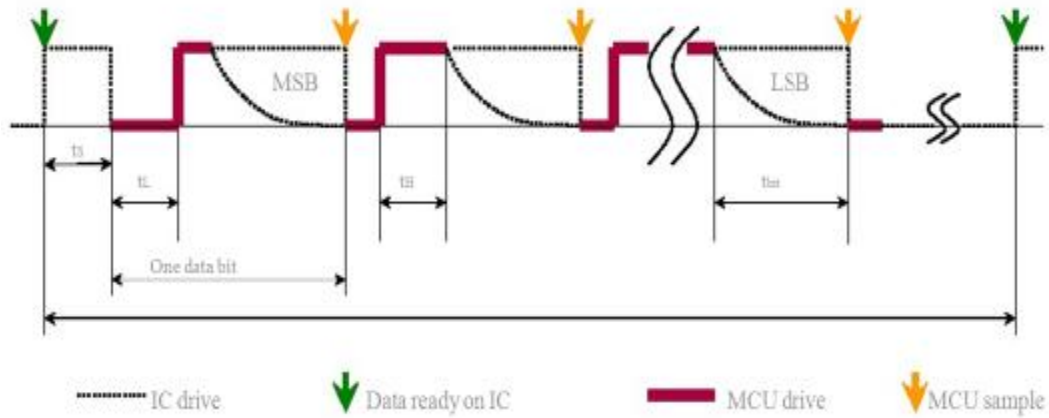
1. Maximum Ratings

Characteristics	Symbol	Min. Value	Max. Value	Unit	Remarks
Supply Voltage	V _{DD}	3	15	V	
Working Temperature	T _{ST}	-20	85	°C	
Current into any pin	I _{into}	-100	100	mA	
Storage Temperature	T _{ST}	-40	125	°C	

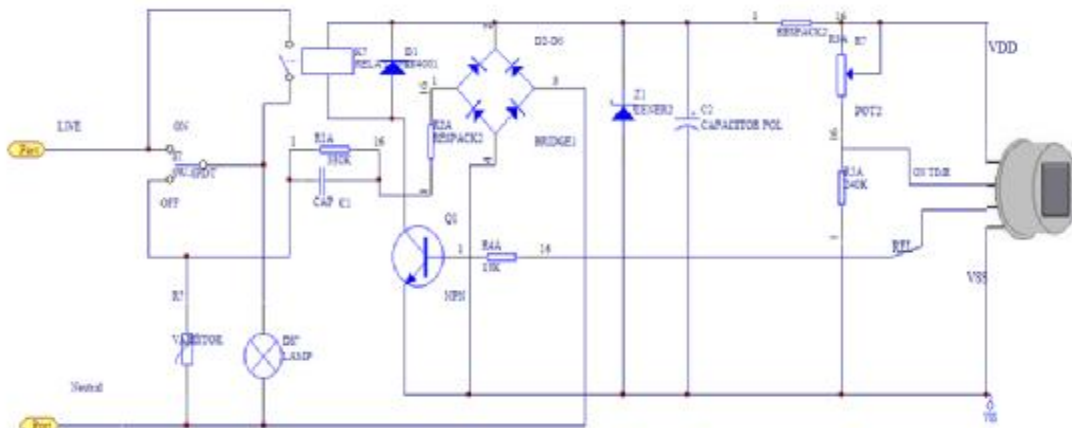
2.Working Conditions (T=25°C, Vdd=3V, Except other requirements)

Characteristics	Symbol	Min.	Type	Max.	Unit	Remarks
Supply Voltage	V _{DD}	3		15	V	I _R =0.5mA
Constant voltage adjustment current	I _R			5	mA	
Working Current ENREG=VDD	I _{DD}		25	30	μA	V _{DD} > 3.3V Inputs active
Working Current ENREG=VSS	I _{DD}		12	15	μA	V _{DD} < 3.3V Inputs inactive
Input OEN						
Input Low Voltage	V _{IL}			0.8	V	
Input High Voltage	V _{IH}	0.9			V	
Input Current	I _I	-1		1	μA	V _{SS} < V _{IN} < V _{DD}
Input ENVREG						
Input Low Voltage	V _{IL}			0.2	V _{DD}	
Input High Voltage	V _{IH}	0.8			V _{DD}	
Input Current	I _I	-1		1	μA	V _{SS} < V _{IN} < V _{DD}
Output REL/LED						
Output Low Current	I _{OL}	10			mA	V _{OL} < 1V
Output High Current	I _{OH}			-10	mA	V _{OL} > (V _{DD} -1V)
Input SENS/ONTIME						
Voltage Input Range		0		V _{DD}	V	Between 0V and 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						

3. Output Voltage Wave Form

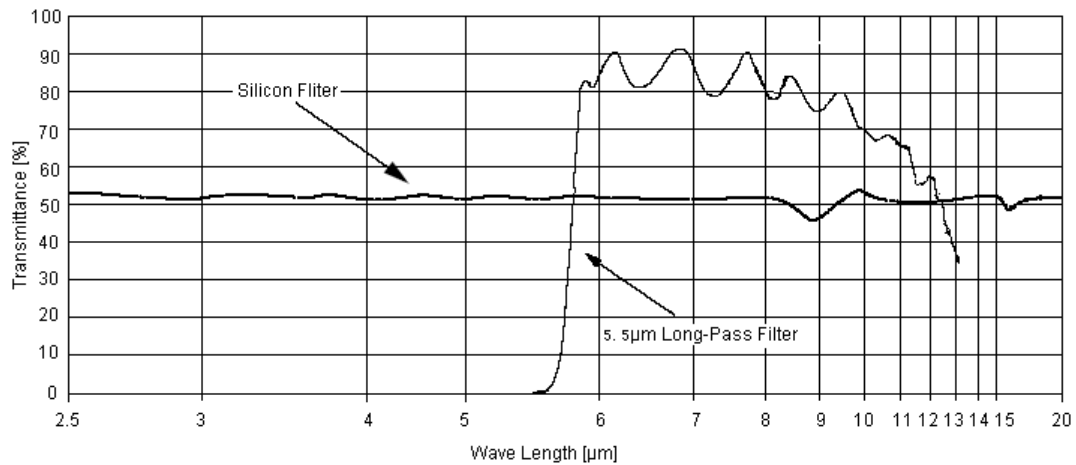


n Typical Application



Notes: This is only for reference circuit of Am422 PIR Sensor.

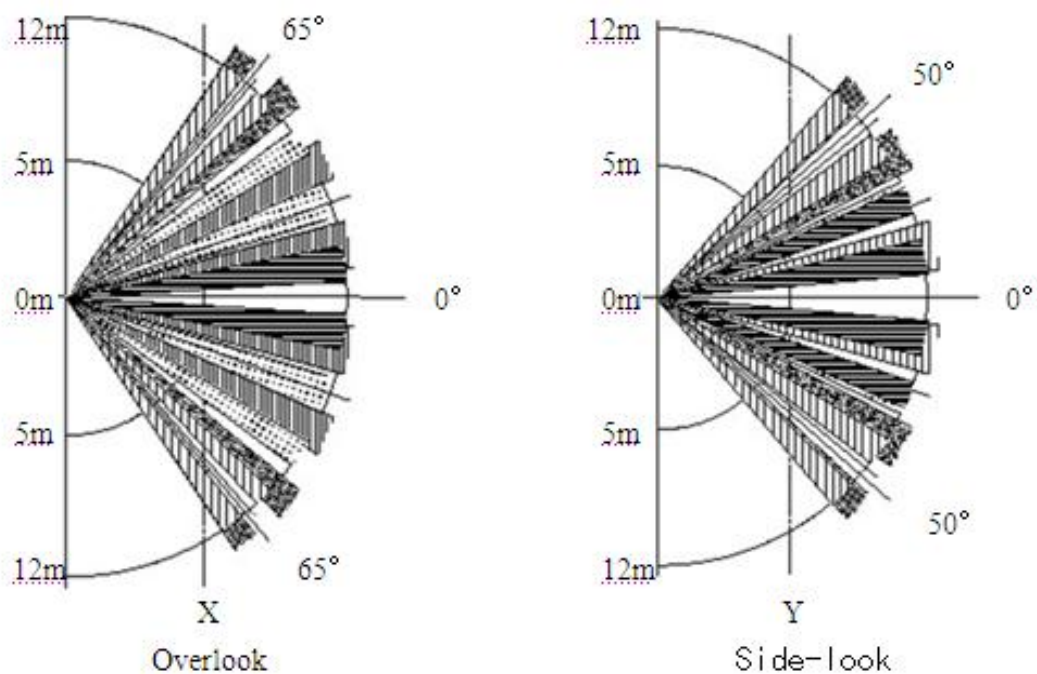
n Spectral Response of Window Materials



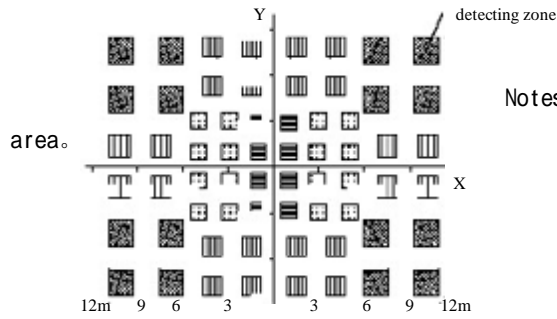
Notice:

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

n View of Field



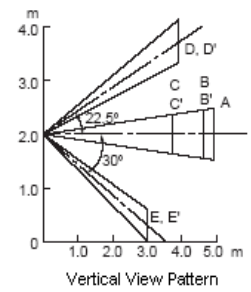
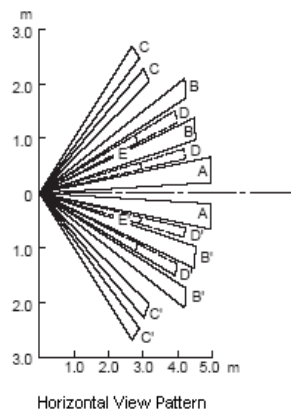
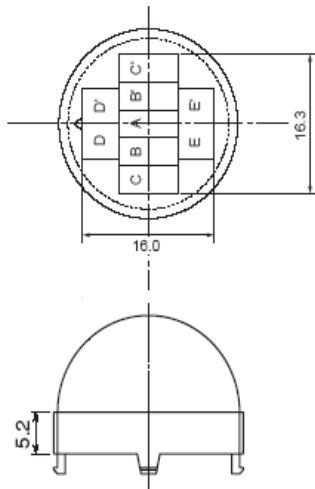
X-Y sectional view



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

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

n Fresnel Lens for Human Body Detection



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