Pyroelectric Infrared Radial Sensor

TYPE: AM612

NANYANG SENBA OPTICAL AND ELECTRONIC CO.，LTD.

Digital Smart Pyroelectric Detector AM612

AM612 is a newest smart digital motion detector. 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. The series has versions which can include ambient light level and sensitivity adjustments.

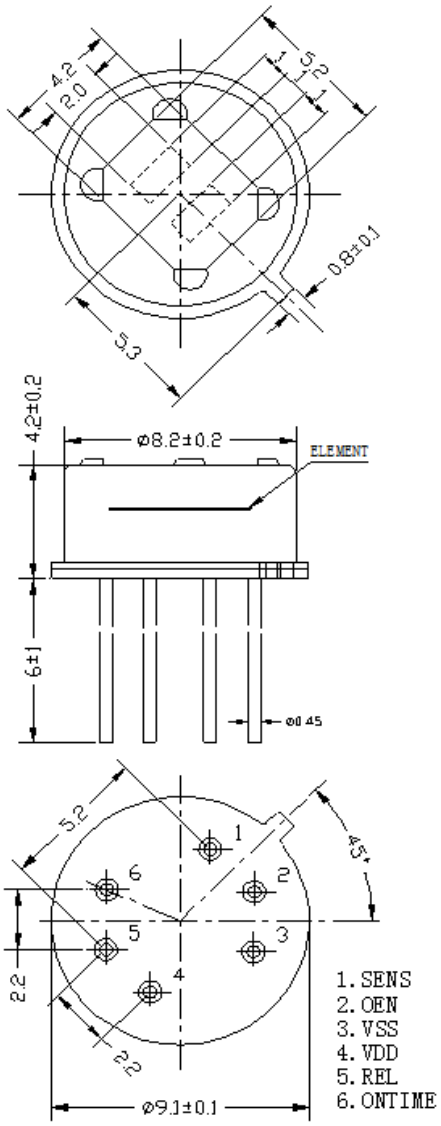
■ Features and Benefits

- 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

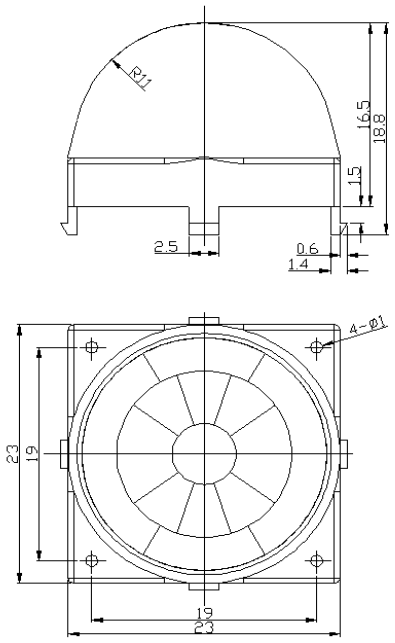
■ Applications

- 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）

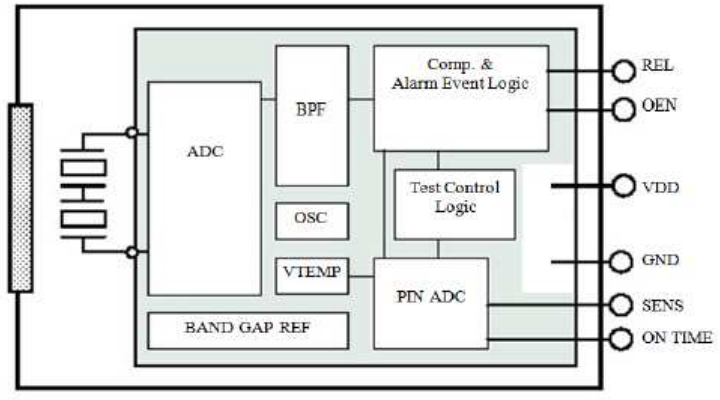
Notes：Dimension A can be used with Dimension B.

■ Technical Data

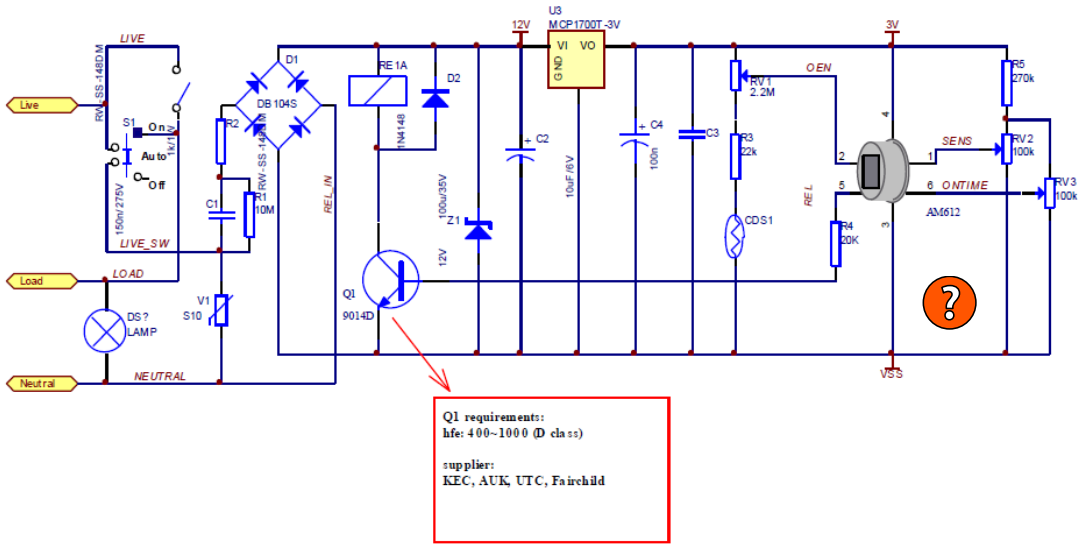
1. Maximum Ratings

Characteristics	Symbol	Min. Value	Max. Value	Unit	Remarks
Supply Voltage	V_{DD}	2.7	3.3	V	
Working Temperature	T_{ST}	-20	85	℃	
Max.current for pin	Into	-100	100	mA	
Storage Temperature	T_{ST}	-40	125	℃	

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

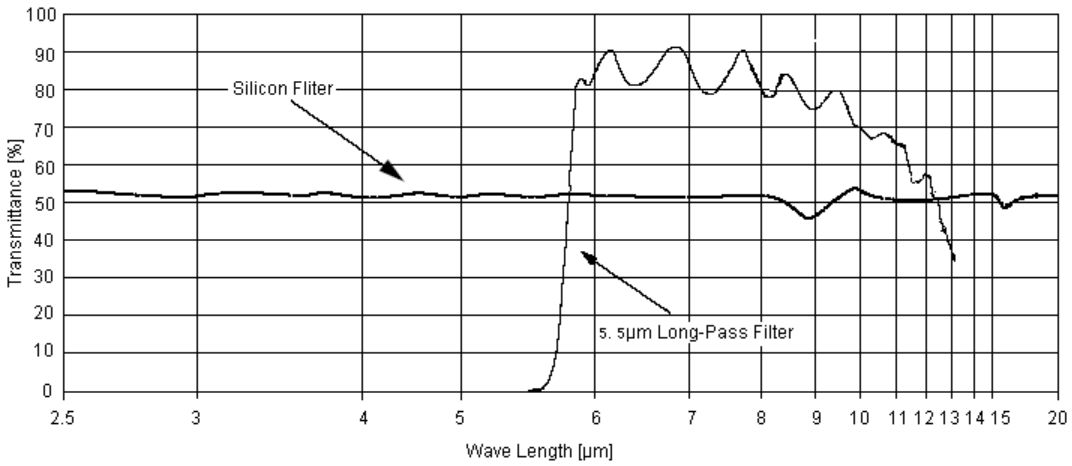
Characteristics	Symbol	Min.	Type	Max.	Unit	Remarks
Supply Voltage	V_{DD}	2.7		3.3	V	I_R=0.5mA
Working Current	I_{DD}		12	15	μA	
OEN						
Input Low Voltage	V_{IL}			0.2	Vdd	
Input High Voltage	V_{IH}	0.4			Vdd	
Input Current	I_I	-1		1	μA	$V_{SS}<V_{IN}<V_{DD}$
Output REL						
Output Low Current	I_{OL}	10			mA	V_{OL}<1V
Output High Current	I_{OH}			-10	mA	$V_{OL}>(V_{DD}-1V)$
Input SENS/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 Am612 PIR Sensor for simple intrusion detector for wired alarm systems.

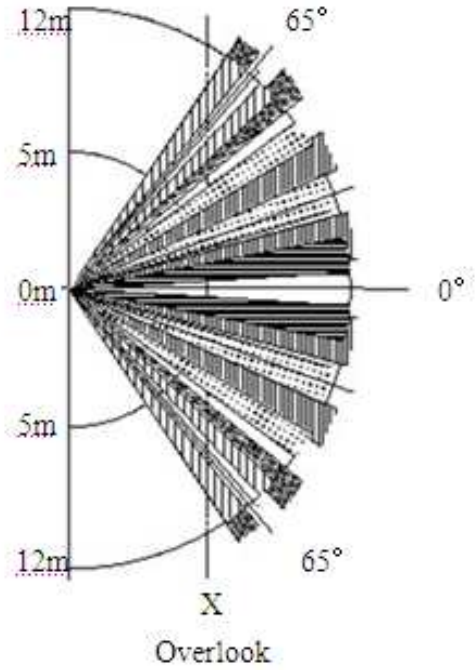
■ Spectral Response of Window Materials



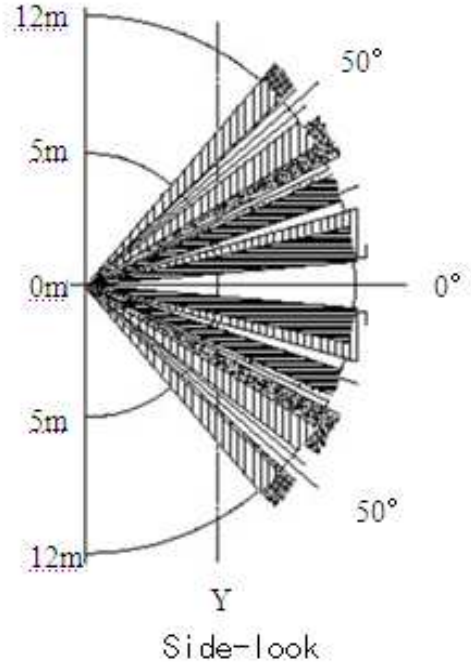
Notice:

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

■ View of Field

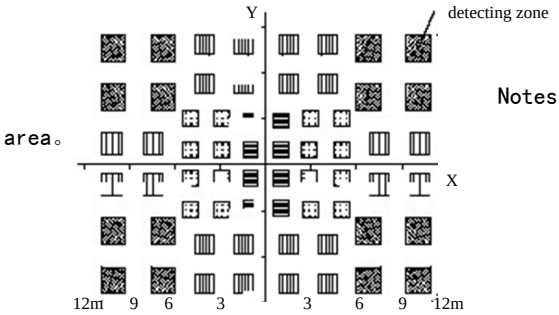


Overlook



Side-look

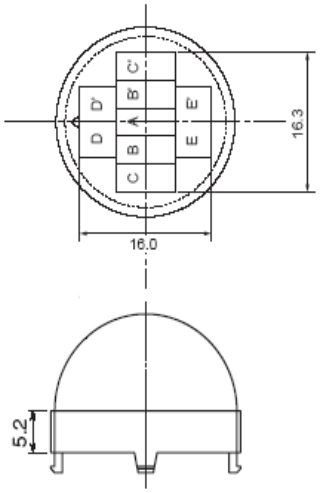
X-Y sectional view

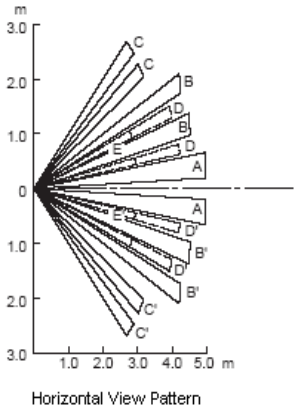


Notes: 1. X-Y sectional view represent the detecting area。

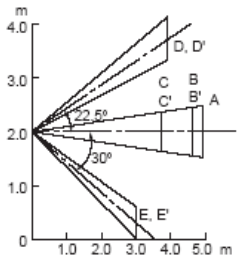
2. Objects with temperature difference can be Detected in the vertical level.

■ Fresnel Lens for Human Body Detection





Horizontal View Pattern



Vertical View Pattern

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