Pyroelectric Infrared Radial Sensor

TYPE: Am622

NANYANG SENBA OPTICAL AND ELECTRONIC CO.，LTD.

Digital Smart Pyroelectric Detector AM622

AM622 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.

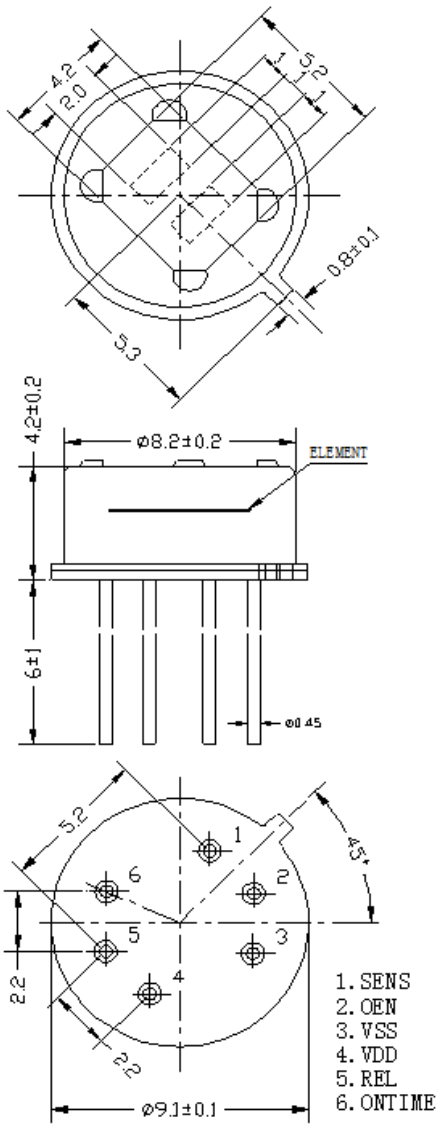
n Features and Benefits

- **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

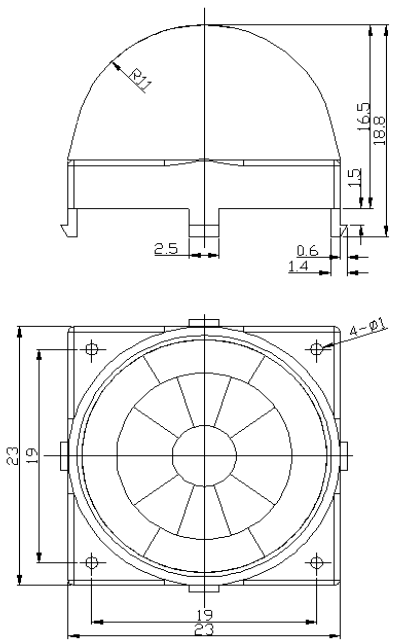
n Applications

- **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）

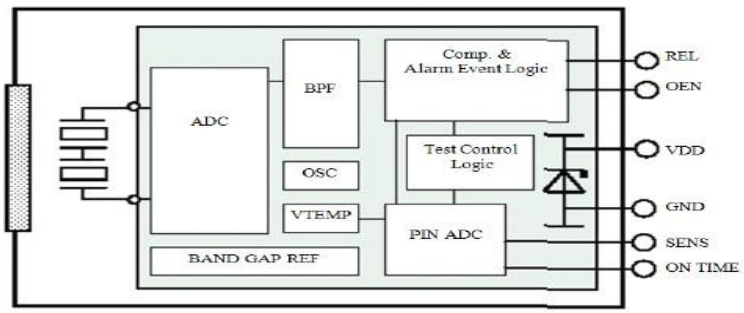
Notes：Dimension A can be used with Dimension B.

n Technical Data

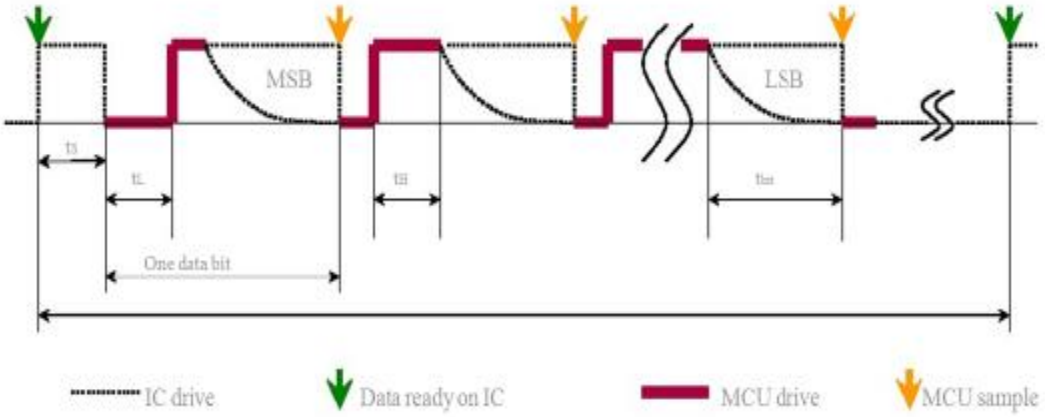
1. Maximum Ratings

Characteristics	Symbol	Min. Value	Max. Value	Unit	Remarks
Supply Voltage	V_{DD}	3	15	V	
Working Temperature	T_{ST}	-20	85	℃	
Max.current for pin	Into	-100	100	mA	
Storage Temperature	T_{ST}	-40	125	℃	

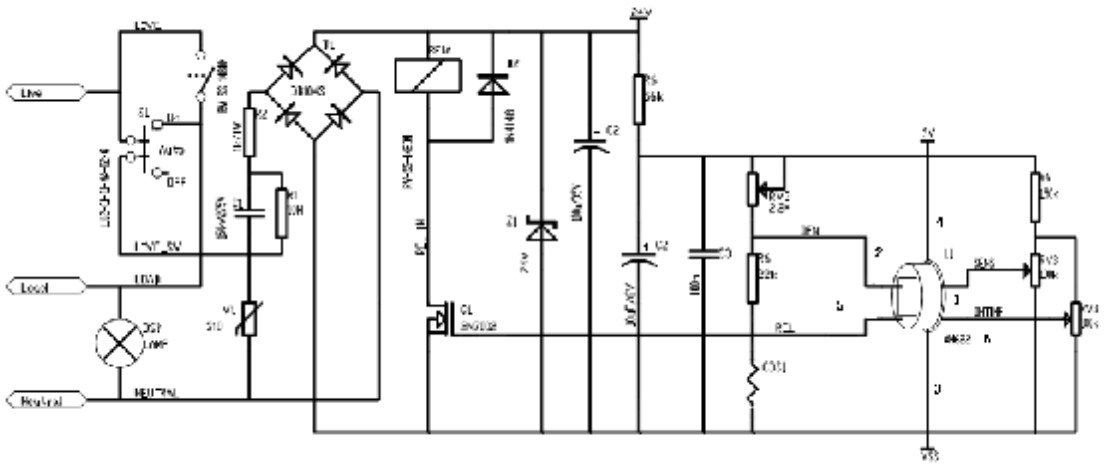
2.Working Conditions (T=25°C, Vdd=3V，Except other requirements)

Characteristics	Symbol	Min.	Type	Max.	Unit	Remarks
Supply Voltage	V_{DD}	3		15	V	I_R=0.5mA
Regulated Current	I_R			5	mA	
Working Current ENREG=VDD	I_{DD}		25	30	μA	V_{DD} >3.3V
Working Current ENREG=VSS	I_{DD}		12	15	μA	V_{DD} <3.3V can not active
OEN						
Input Low Voltage	V_{IL}			0.8	V	
Input High Voltage	V_{IH}	0.9			V	
Input Current	I_I	-1		1	μA	$V_{SS}<V_{IN}<V_{DD}$
ENVREG						
Input Low Voltage	V_{IL}			0.2	Vdd	
Input High Voltage	V_{IH}	0.8			Vdd	
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	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						

3. Output Voltage Wave Form

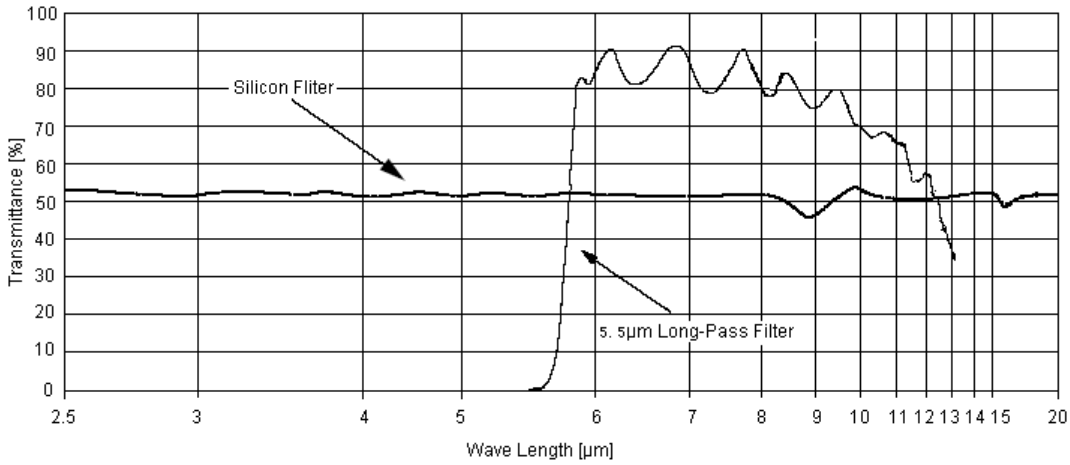


n Typical Application



Notes：This is only for reference circuit of Am622 PIR Sensor for simple intrusion detector for wired alarm systems.

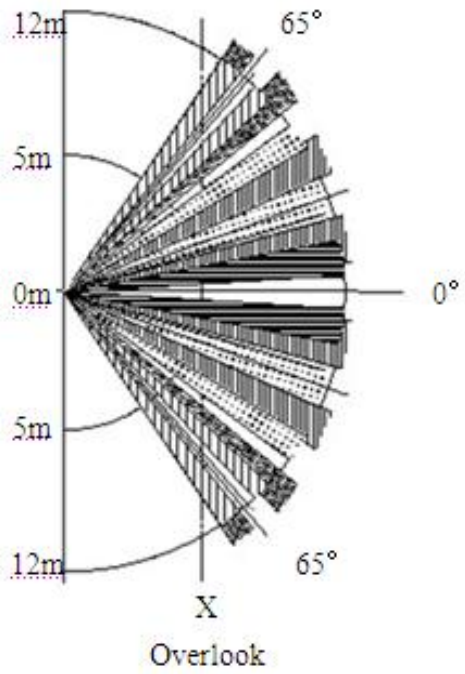
n Spectral Response of Window Materials

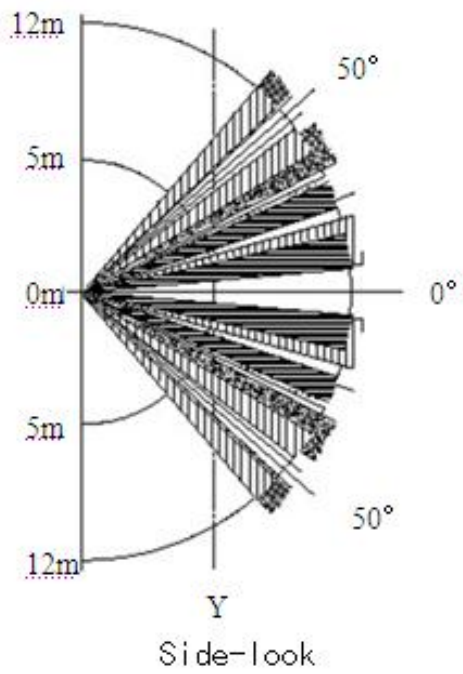


Notice:

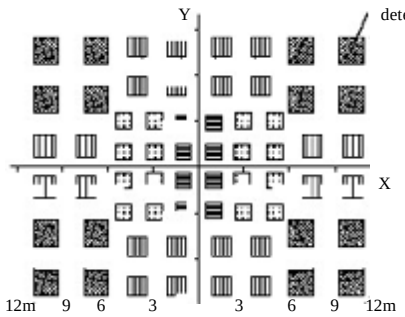
The typical average transmissivity curve of 5.5μm pass IR filter is figured, which is vacuumed on silicon filter.

n View of Field





X-Y sectional view

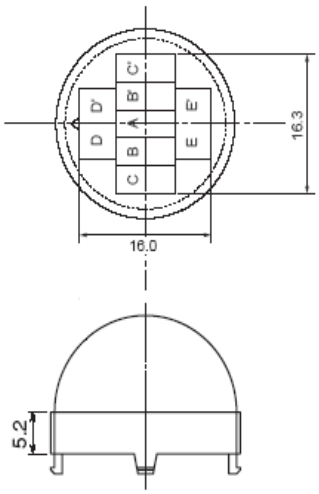


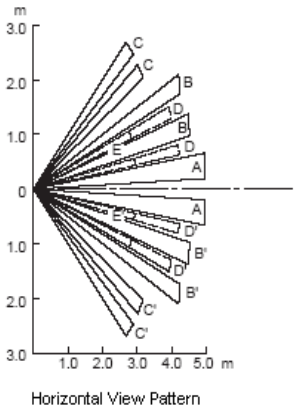
area。

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

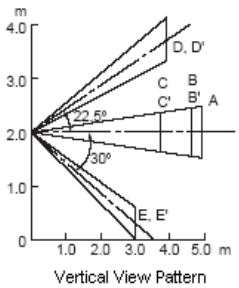
2.Objects with temperature difference can be Detected in the vertical level.

n Fresnel Lens for Human Body Detection





Horizontal View Pattern



Vertical View Pattern