

SPECIFICATION

DESCRIPTION: Pyroelectric Infrared Sensor

Part NO.: PIR300B

1. Part NO.: PIR300B
2. Usage: Universal big window probe, can be used for automatic lighting automatic door toy into alarming, etc
3. Sensitive type: double type series
4. Size: TO-5 packaging, pls see chart 1.
5. Performance index

5.1 electric properties

project	Testing condition	specification
signal output	ambient temperature 25°C blackbody temperature 420K(147°C) modulation frequency 1HZ magnification 72.5 dB (operational amplifier 5000X) Vd= 5V, Rs=47KΩ	≥ 3 Vp-p
Noise	ambient temperature 25°C magnification 72.5 dB (operational amplifier 5000X) Vd= 5V, Rs=47KΩ	<170mVp-p Max. (Typ. 100mVp-p)
degree of balance [1]	blackbody temperature 420K(147°C) magnification 72.5 dB (operational amplifier 5000X) Vd= 5V, Rs=47KΩ	<15%
Mains voltage		3~15V

Source Voltage	Vd= 5V, Rs=47KΩ	0.4~1.1V
response time	Plus electric signal stability after the time required for output	<15S

[*] degree of balance = $V_{AB}/|V_A+V_B| \times 100\%$

V_{AB} = double sensitivity (mVp-p)

V_A = A 'sensitivity (mVp-p)

V_B = B 'sensitivity (mVp-p)

Testing way, pls see chart 2、 3。

5.2 optical property

Project	Specification
View Angle	X : 148° Y : 139°; pls see chart 4
Accept wavelength	5.5~14μm; pls see chart 5
cut-off wavelength	5.2±0.5μm; pls see chart 5
Average transmittance	>72%, 7~14μm
Filter materials	silicon
Thickness of filter	0.50mm

5.3 Environmental performance

project	Specification
Operating temperature	-30—70°C
Storage Temperature	-35—80°C

6. reliability evaluation

test project	Testing condition	tester	Testing standard
high-temperature working	70°C 72 hours	temperature-regulated oven	After the test, put the sensor in the natural environment 3hours, then test electrical performance measurement.
sweat resistance	60°C , 95%RH, 72 hours	temperature and humidity regulator	
LTST	-40°C 72 hours	temperature-regulated oven	
HTST	70°C 72 hours	temperature-regulated oven	

Thermal shock	-40℃ , 1 hour→Room Temperature , 1 hour→70℃ , 1 hour 10 times recycle	temperature-regulated oven	
natural aging	Outside 30 days	Test prototype	
soldering resistance	260±5℃ , 10s Dip depth 3.0mm	soldering furnace	
Seal	133.3 pascal , 1minute	vacuum pump	No bubble

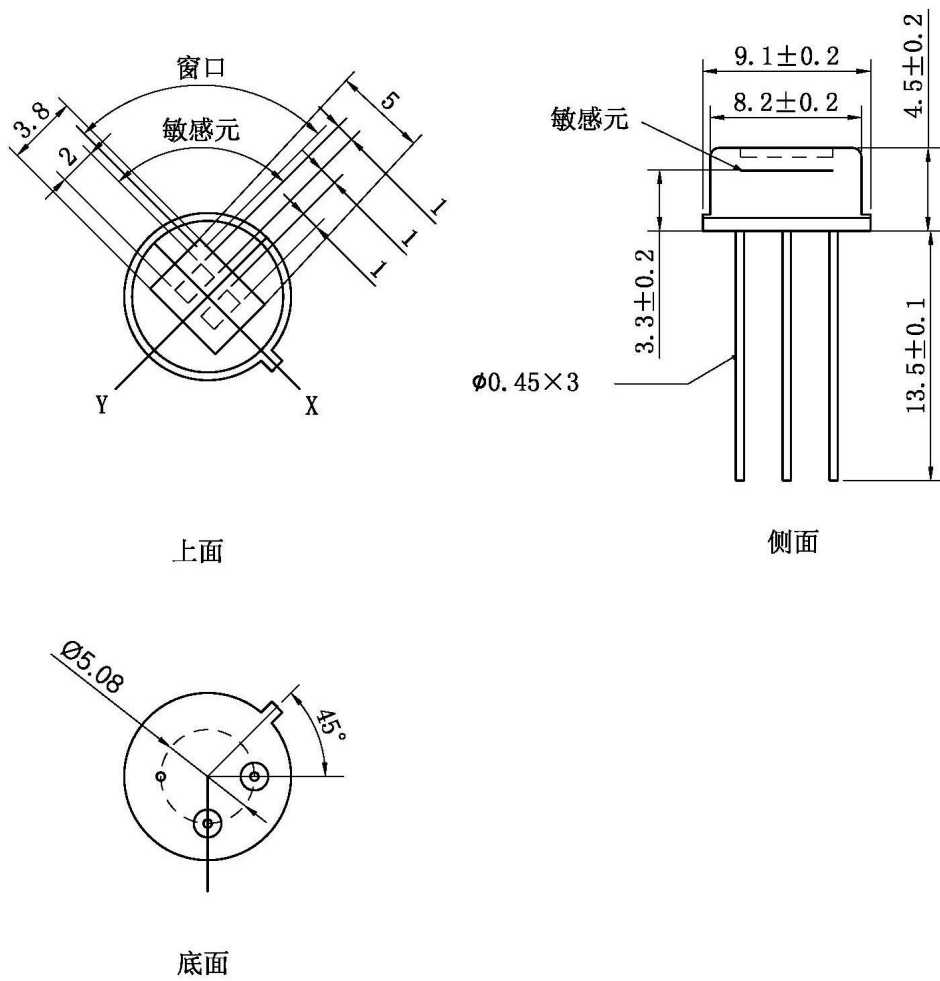
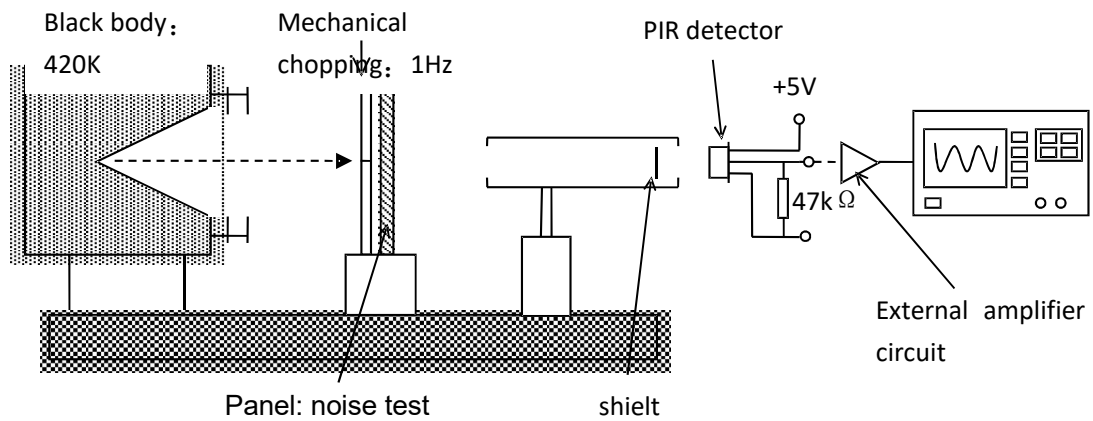


Chart 1.: Specification of the senso



The distance between black body and PIR sensor ; 200mm
 Amplifier circuit; 72.5 dB

Chart 2: Testing Schematic plot

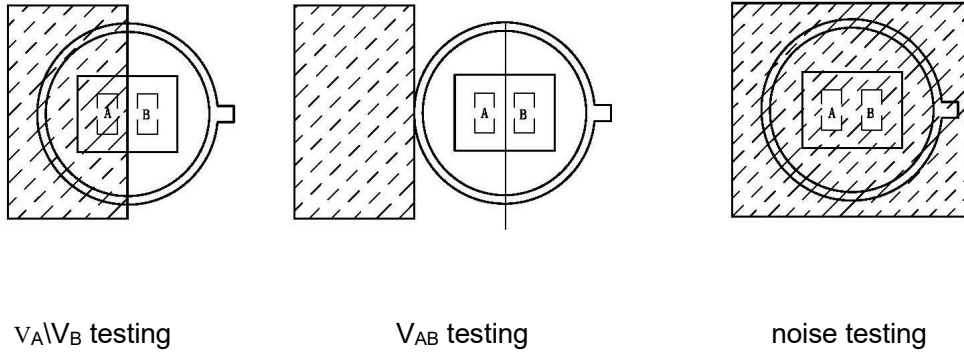


Chart 3: PIR sensor testing Schematic plot

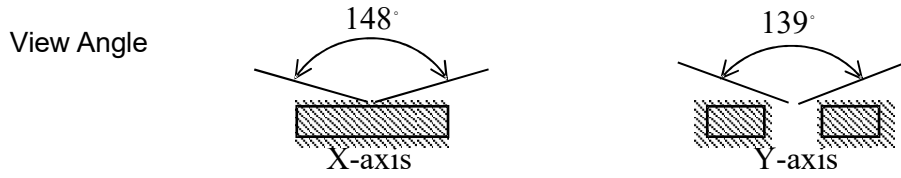


Chart 4: View angle testing Schematic plot

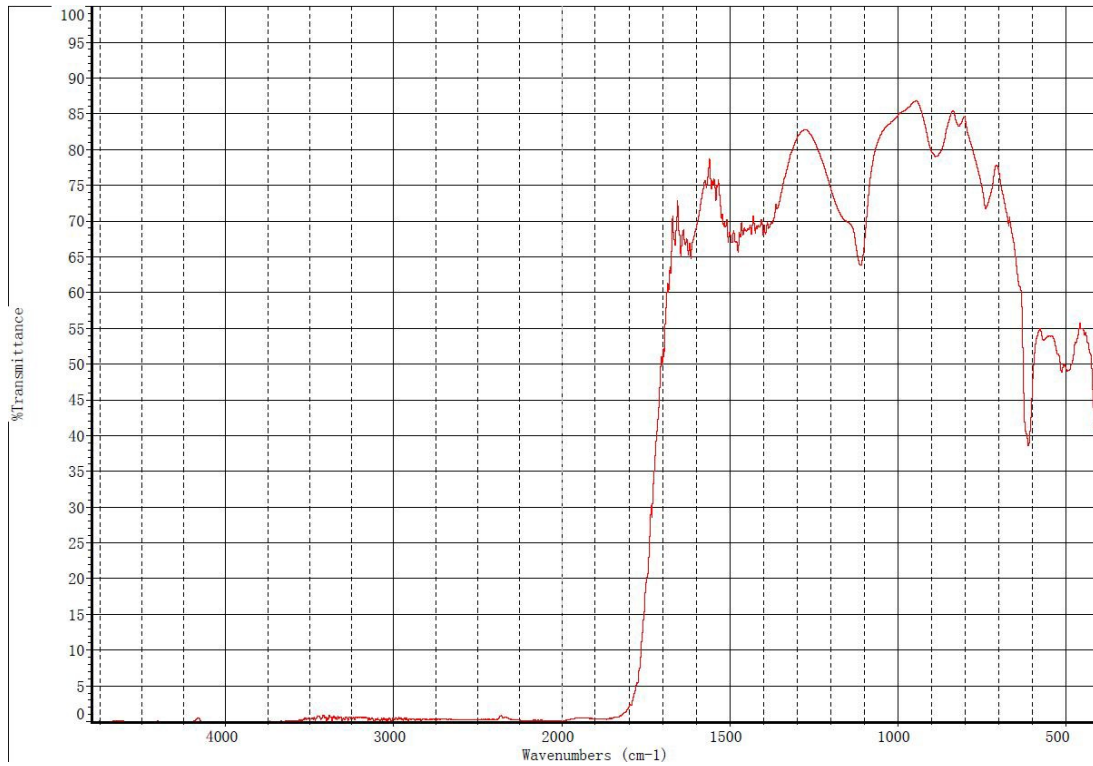


Chart 5: : filter through characteristic curve