

S201B

Pyroelectric Infrared Sensor

Specification

Model: S201B

Application: General type sensor, used for auto lighting, auto door, toys, alarms and so on.

Sensor Type: Dual Element Tandem.

Dimension: TO-5 package, see Figure 1.

Performance Index

Electrical Characteristic:

Item	Test Condition	Specification
Signal Output	Environment temperature: 25 °C Black body temperature: 420K(147 °C) Modulation Frequency: 1Hz Magnification: 72.5 dB (Operational amplifier: 5000 times) Vd= 5V, Rs=47KΩ	= 3 Vp-p
Noise	Environment temperature: 25 °C Magnification: 72.5 dB (Operational amplifier: 5000 times) Vd= 5V, Rs=47KΩ	<170mVp-p Max. (Typ. 100mVp-p)
Degree of Balance [*]	Black body temperature: 420K(147 °C) Magnification: 72.5 dB (Operational amplifier: 5000 times) Vd= 5V, Rs=47KΩ	<15%
Supply Voltage		3~15V
Source Voltage	Vd= 5V, Rs=47KΩ	0.4~1.1V
Response Time	Time of signal stable output after power on	<15S

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

V_{AB} = Sensitivity of dual element (mVp-p)

V_A = Sensitivity of element A (mVp-p)

V_B = Sensitivity of dual element B (mVp-p)

Test methods see Figure 2,3.

Optical Characteristic:

Item	Specification
Angle of View	X axis: 140° Y axis: 130° (see Figure 4)
Receiving Wavelength	5.5~41μm (see Figure 5)
Cutoff Wavelength	5.2 ±0.5μm (see Figure 5)
Average Transmittance	>72%, 7~14μm
Material of Filter	Silicon
Thickness of Filter	0.50mm

Environment Performance:

Item	Specification
Operating Temperature	-30— 70 ℃
Storage Temperature	-35— 80 ℃

Reliability Test

Item	Condition	Instrument	Standard
High-temperature Operation	70 ℃, 72 hours	Thermostat	Test the electric performance after the sensor set in natural environment for 3 hours. 1. No obvious change in appearance 2. Electric performance parameters change within 20%
waterlogging resistance	60 ℃, 95 %RH, 72 hours	Thermo-humidistat	
Low-temperature Storage	-40 ℃, 72 hours	Thermostat	
High-temperature Storage	70 ℃, 72 hours	Thermostat	
Thermal shock	-40 ℃, 1 hour indoor temperature, 1hour 70 ℃, 1hour 10 cycles	Thermostat	
Natural Ageing	30 days outdoors	Prototype test	
Soldering Resistance	260 ±5 ℃, 10s, immersion depth 3.0mm	Soldering tin furnace	
Sealing	133.3 Pa, 1 minute	Vacuum pump	No bubble

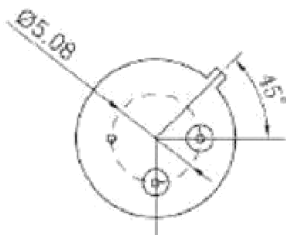
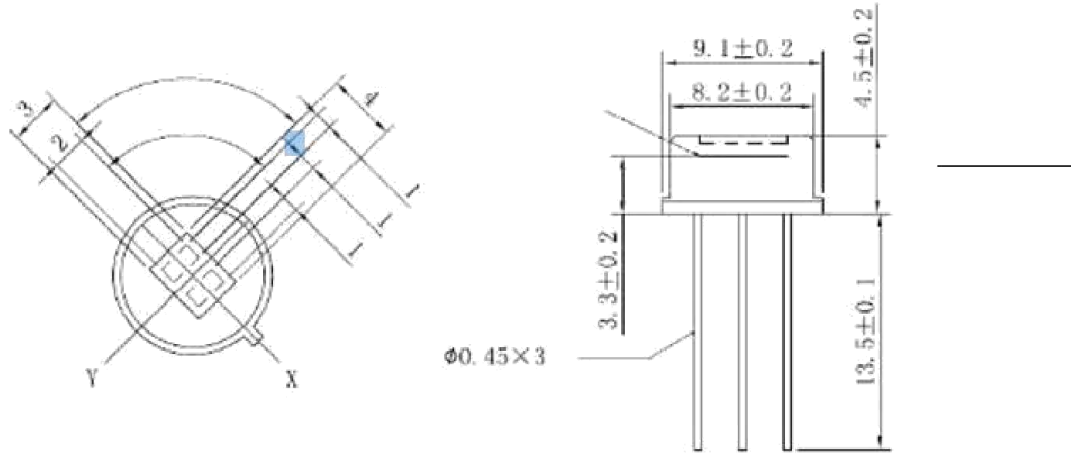


Figure 1. Dimension

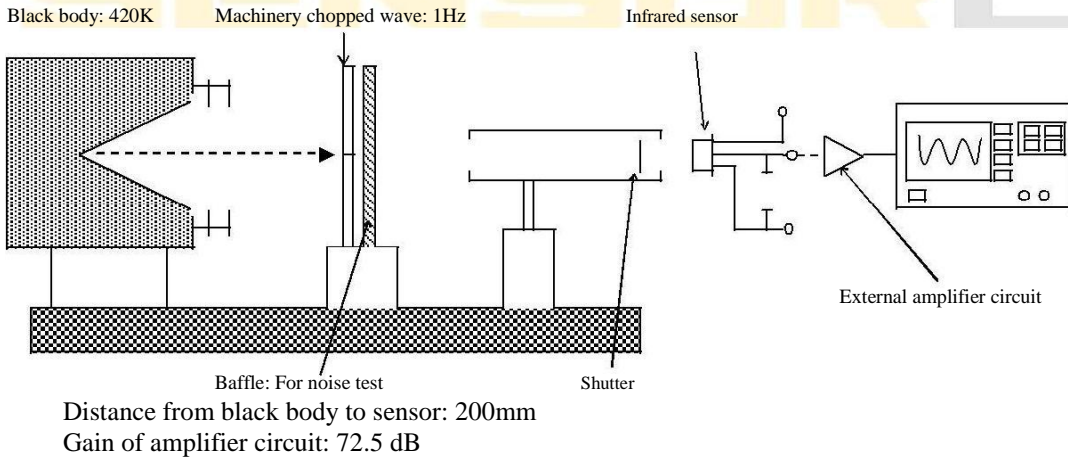


Figure 2. Test machine diagram

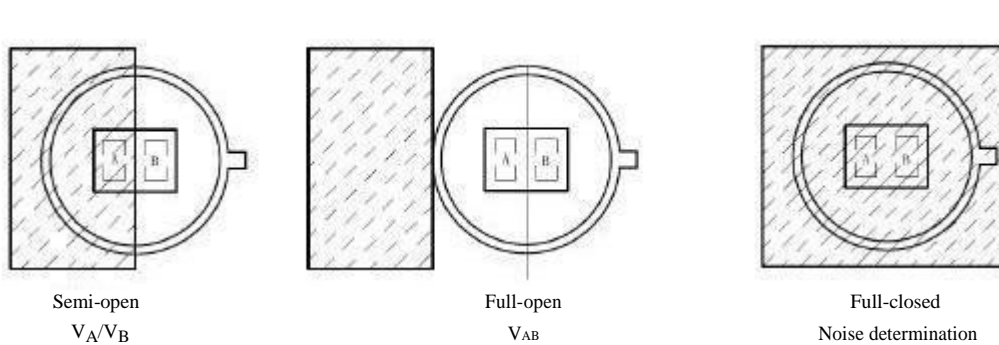


Figure 3. Determination method diagram

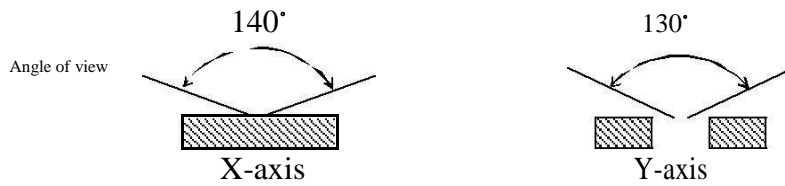


Figure 4. Angle of view diagram

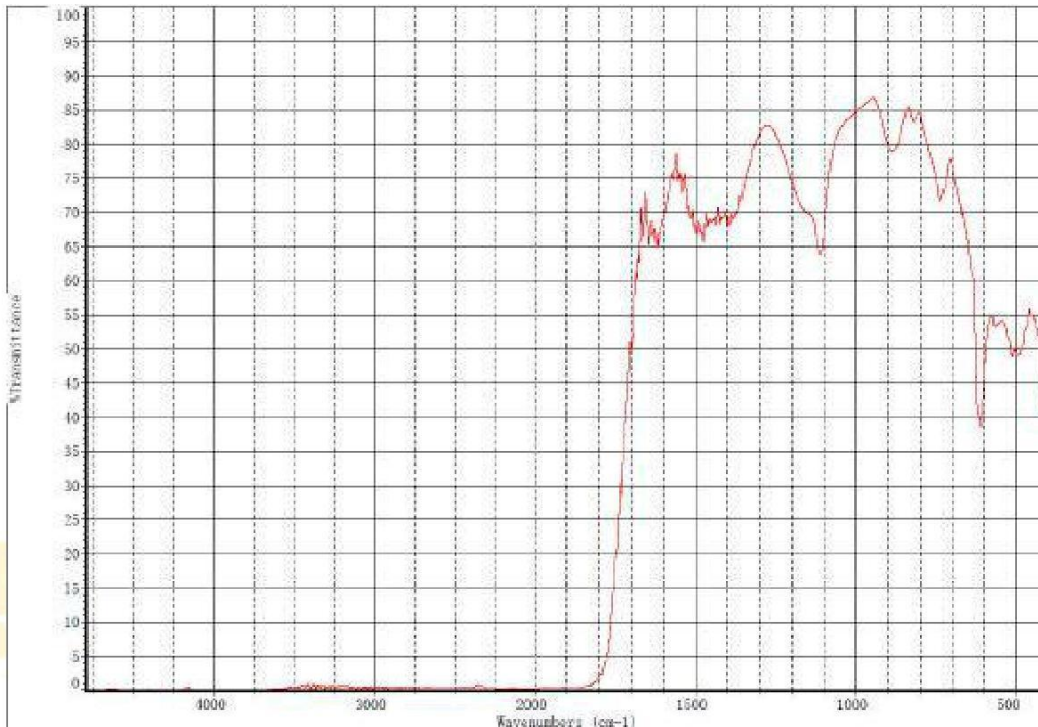


Figure 5.Characteristic curve of optical filter

Responsibility

Sensorcn will not be responsible for the product damage or other risks under the inappropriate condition. For example, using while parameter exceeds the absolute limit or in the circumstance with strict requirement such as safety devices, fire alarm, life support devices and so on.

Warranty

Sensorcn guarantee that no defective material or deficient technology are used during the process. And we assure a one-year duration period beginning from the date the delivery signed up.

All the products made by Sensorcn accord the above warranty, expect for the ones made for flourmill, lime factory, metal works, etc, which require a hostile environment with high concentration, temperature, humidity. For more specifics of the warranty, please refer to the order confirmation or consult the sales of Sensorcn. The product returned to Sensorcn before the expiration date and inspected to be defective will be repaired or exchanged.

Warning

Customer should determine the applicability of the product for your own good while Sensorcn provide the application assistance through official document and Sensorcn website. We believe the information here are accurate and reliable, but we have no responsibility for the usage.

Contact

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