MFrontier
美 思 先 端

Pyroelectric gas sensor

MPY20-A112T

The MPY20-A112T series pyroelectric sensor uses lithium tantalate single crystal as the sensitive element material. The Curie temperature of the lithium tantalate crystal material is above 600°C. It has a small relative dielectric constant and a high specific detection rate. It can operate in a wide range of room temperature. Within the temperature range, the pyroelectric coefficient of the material changes very little with temperature, and the temperature change rate of the output signal is only 1-2‰. The temperature stability of the sensor is very good, and the spectral response consistency is good within the wavelength range of 1~20um.

Features

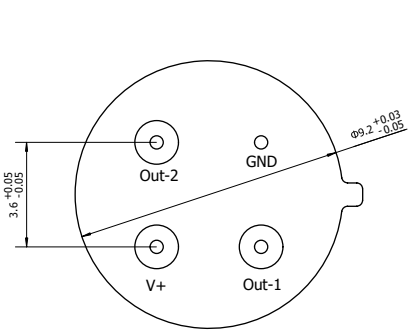
- Dual channel
- TO-39 package
- thermal compensation
- JFET
- Voltage mode

Applications

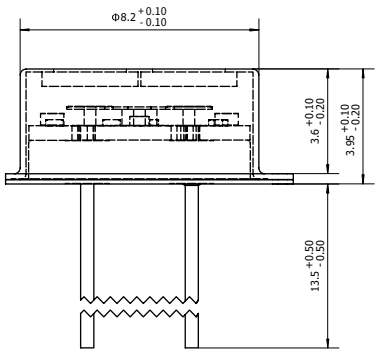
- Medical industry
- Security career
- Home electronics
- Industrial production

Product Size

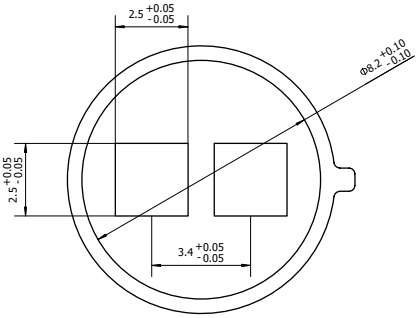
unit：mm



Bottom view



Main view



Top view

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Product parameters

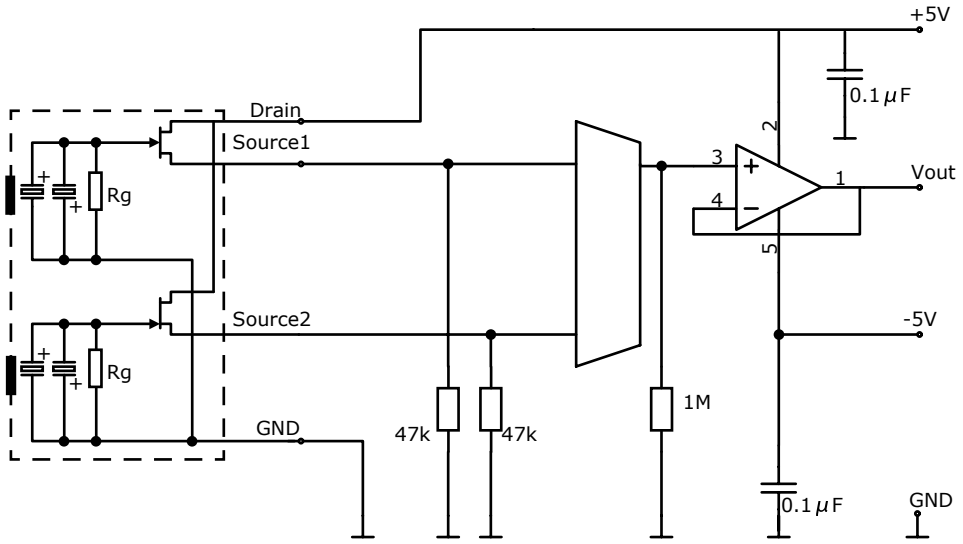
Technical indicators	Typical value
Window size	2.5×2.5mm²
Sensitive element size	1.6×1.6mm²
Feedback resistor	50GΩ
Thermal time constant	100ms
Operating Voltage	2~12V
Recommended voltage	5V
Noise density (10HZ, BW1HZ, 25)	⩽ 150μV/Hz$^{1/2}$
Voltage response rate (no window)Rv(500K,10HZ,25℃)	⩾ 280V/W
Specific detection rate (no window) D*(500K,10HZ,BW 1HZ,25)	⩾ 3.0×10^{8}cm・Hz$^{1/2}$/W
Best output load	47kΩ
Range of working temperature	-40~+80℃
Storage temperature range	-40~+80℃

Note: 1. All maximum and minimum values are measured at 5V, 25℃, unless otherwise specified.
2. Maxxian reserves the right to change these specifications at any time without prior notice.

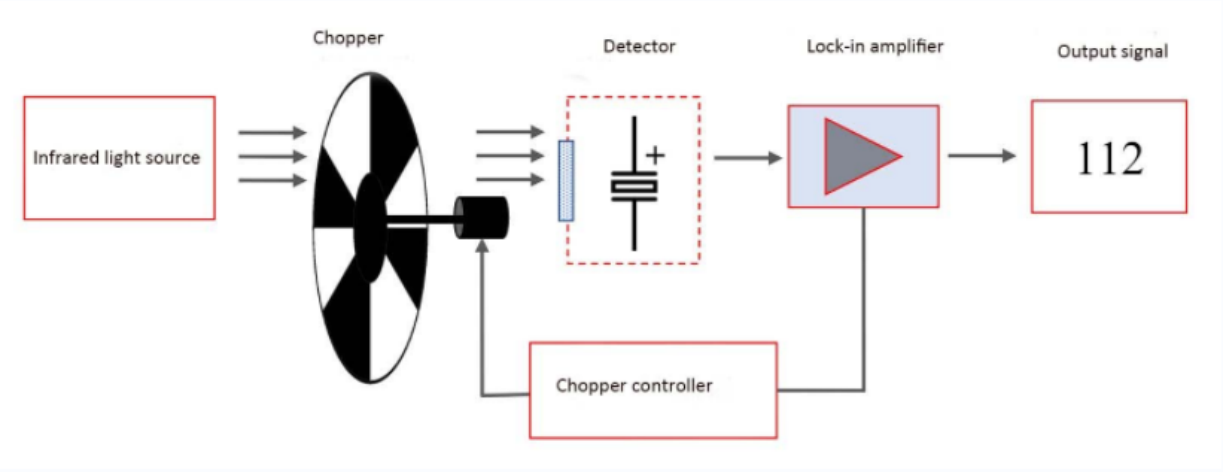
Filter selection

Product number	Channel 1 Reference (CWL μm/HBP nm)	Channel 2 Measure (CWL μm/HBP nm)
MPY20-A112T-CH4	3.95 / 90	3.30 / 160
MPY20-A112T-CO2	3.95 / 90	4.26 / 180
MPY20-A112T-N2O	3.95 / 90	4.56 / 160
MPY20-A112T-CO	3.95 / 90	4.64 / 180
MPY20-A112T-NO	3.95 / 90	5.30 / 180
MPY20-A112T-NO2	3.95 / 90	6.20 / 200
MPY20-A112T-SO2	3.95 / 90	7.30 / 200
MPY20-A112T-SF6	3.95 / 90	10.6 / 240

Test circuit diagram



Test device



Version history

Date	Version	Change
2022.05.01	1.0	Initial version
2023.09.01	1.1	Brand upgrade

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