

# PYREOS

## SINGLE CHANNEL PYROELECTRIC DETECTOR

### Introduction

The Pyreos thin film pyroelectric gas detectors offer exceptionally high responsivity, low microphonics and class leading thermal and electrical stability. This high performance is now available in the miniaturized TO46 form but retains an excellent signal to noise ratio, and offers a fast, stable response over a wide operating frequency range. The sensor element is built into a low noise circuit that has an internal cmos op amp, with a 10 G Ohm feedback resistor outputting an industry standard voltage mode signal. The standard pin-out makes it a simple replacement for leading voltage mode devices.



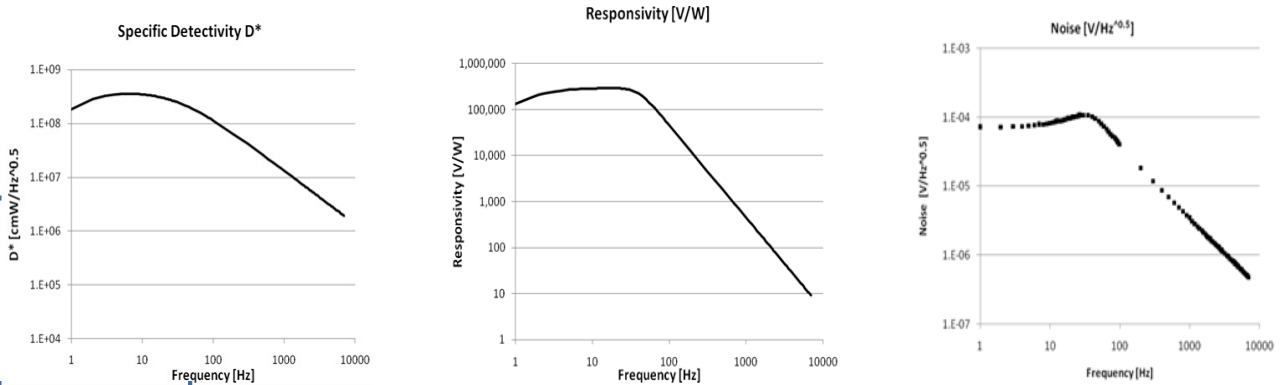
### Sensor Information

Filter aperture	2.4 mm $\phi$
Element size	700 $\mu\text{m}$ x 325 $\mu\text{m}$
Op amp with 10G Ohm feedback resistor	
Time Constant	~12 ms
Responsivity <sup>1</sup>	<b>110,000 V/W</b>
D* <sup>1</sup>	<b><math>3.5 \times 10^8 \text{ cm}\sqrt{\text{Hz}}/\text{W}</math></b>
Noise <sup>1</sup>	<b>30 <math>\mu\text{V}\sqrt{\text{Hz}}</math></b>

<sup>1</sup> 10Hz normalized without window & optics

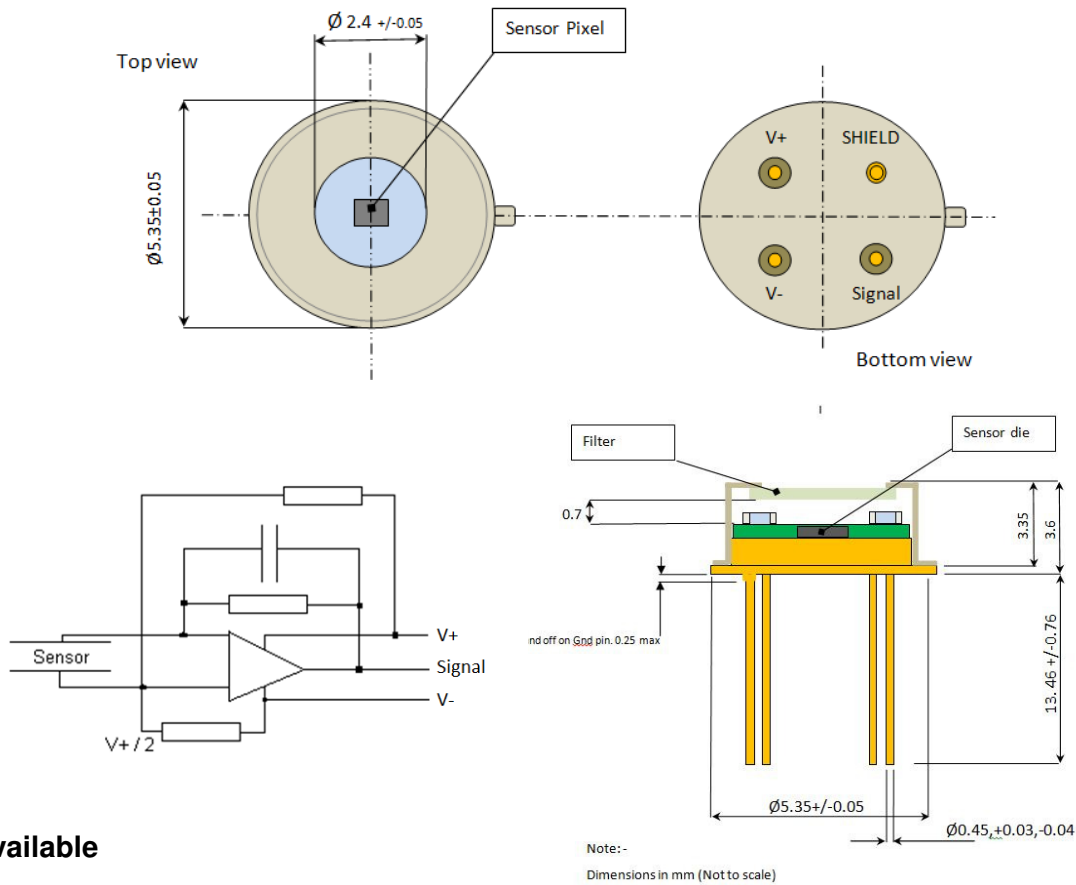
Max. Voltage	5.5V
Min. Voltage	2.4V
Output Voltage	Normalised around mid rail
Microphonics	$S_{\text{vib}} \sim 2 \mu\text{V}/\text{g}$ at 10Hz
Package	TO46
Filter	Standard types & custom
Operating Temperature -20 to +70 C	
Storage Temperature -20 to +110 C	

### Frequency Characteristics



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## Package Information & Circuit Diagram:

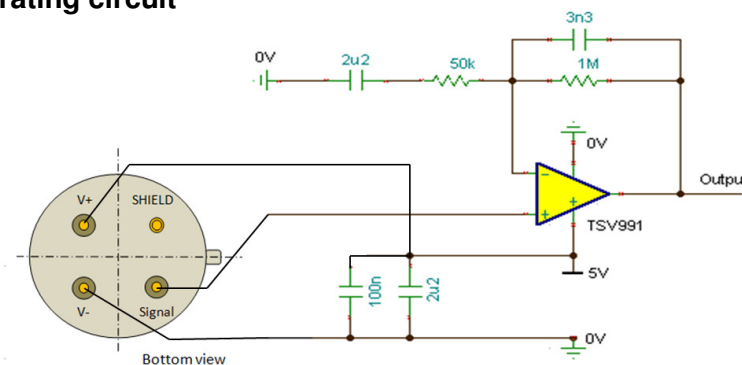


## Filters Available

Please see the Pyreos list of our standard filters. Sample quantities of sensors are typically available immediately for most standard filters. We can also rapidly process a customized filter for you. Typical performance values are shown for some standard filters.

Part Number	PY0568	PY0569	PY0570
Filter	CO <sub>2</sub>	CO <sub>2</sub> special	CO
CWL $\mu$ m (HBP nm)	4.26(180)	4.43(60)	4.64(180)
Responsivity V/W (500K,10Hz)	5400	2800	5750
Noise 10Hz $\mu$ V $\sqrt$ Hz	30	30	30

## Typical operating circuit



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