

# PYREOS

## DUAL 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 detector achieves a signal to noise of ~10,000 and offers a fast, stable response over a wide operating frequency range. The sensor elements are 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. With a standard pin out it makes it a simple replacement for leading voltage mode devices.



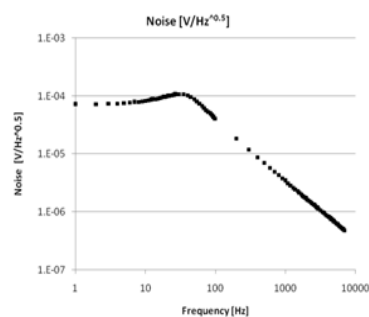
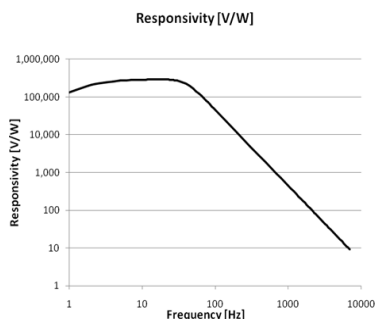
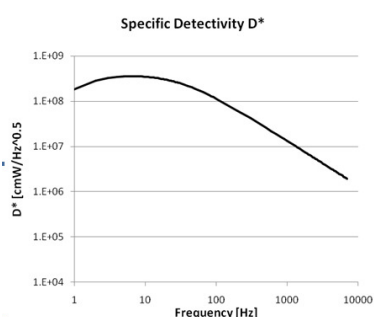
### Sensor Information

Filter aperture	2.6 mm square
Element size	1000 $\mu\text{m}$ x 1000 $\mu\text{m}$
Op amp with 10G Ohm feedback resistor	
Time Constant	~12 ms
Responsivity <sup>1</sup>	<b>150,000 V/W</b>
D* <sup>1</sup>	<b>3.5 x 10<sup>8</sup> cm<sup>2</sup>/Hz/ W</b>
Noise <sup>1</sup>	<b>70 <math>\mu\text{V}/\sqrt{\text{Hz}}</math></b>

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

Max. Voltage	8.0V
Min. Voltage	2.7V
Output Voltage	Normalised around mid rail
Microphonics	S <sub>vib</sub> ~2 $\mu\text{V}/\text{g}$ at 10Hz
Package	TO39
Filter	8 standard types & custom
Operating Temperature -20 to +70 C	
Storage Temperature -20 to +110 C	

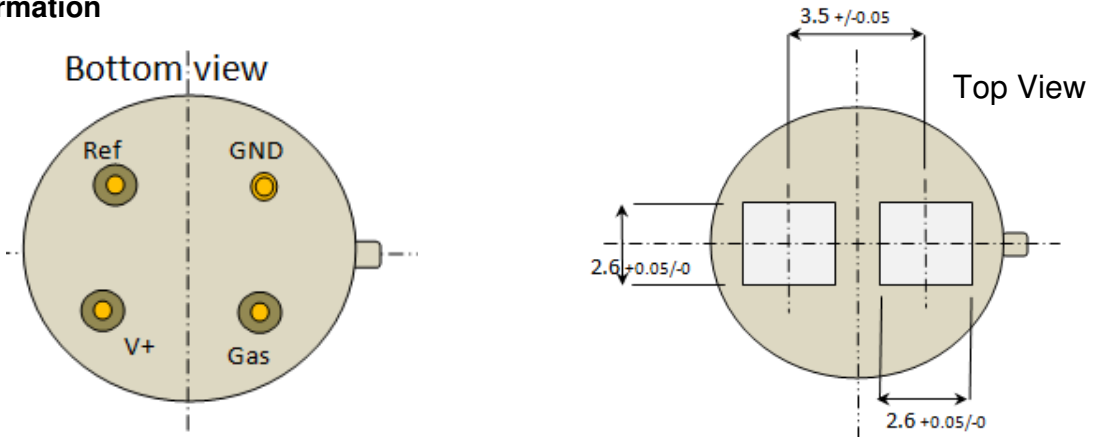
### Frequency Characteristics



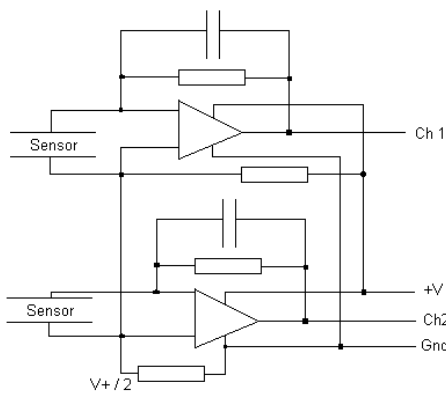
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**Package Information**



**Pin compatible with leading brands**



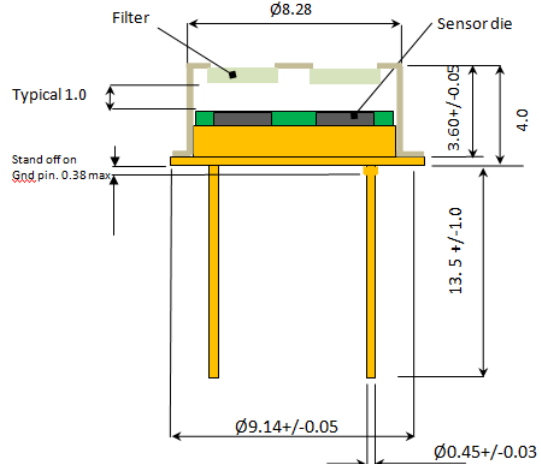
**Voltage mode output**

**Filters Available**

Pyreos has a range of standard filters for CO<sub>2</sub> CO hydrocarbon methane NO<sub>x</sub> SO<sub>x</sub> fire/flame and we can also rapidly process a customized filter for you. Typical performance values measured are shown.

Filter	CO <sub>2</sub>	CO	CH <sub>4</sub>	H-C	CO <sub>2</sub> Narrow	CONarrow	Ref.
CWL μm (HBP nm)	4.26(180)	4.64(180)	3.30(160)	3.375(190)	4.27(90)	4.64(90)	3.91(90)
Responsivity V/W (500K,10Hz)	7700	8200	3700	4200	3100	5300	5100
Noise 10Hz uV√Hz	70	70	70	70	70	70	70

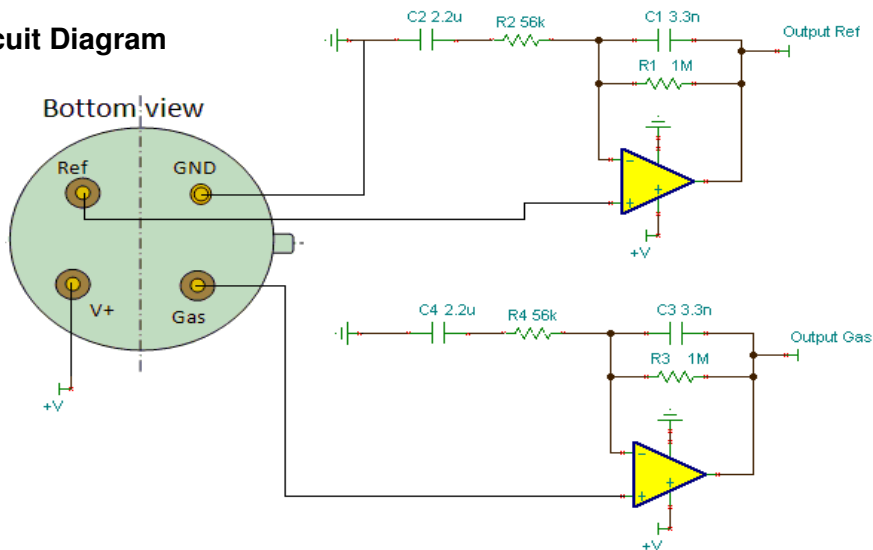
**Filter Window Size**



Dimensions in mm (Not to scale)

**Package Dimensions**

**Recommended Circuit Diagram**



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