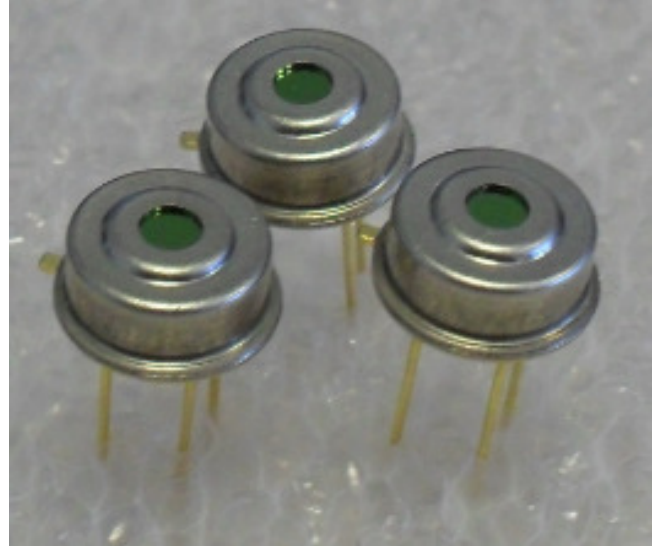


PYREOS

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 detector achieves a signal to noise of ~10,000 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	2.5 mm ϕ
Element size	1000 μm x 1000 μm
Op amp with 10G Ohm feedback resistor	
Time Constant	~12 ms
Responsivity ¹	150,000 V/W
D* ¹	$3.5 \times 10^8 \text{ cm}\sqrt{\text{Hz}}/\text{W}$
Noise ¹	70 $\mu\text{V}\sqrt{\text{Hz}}$

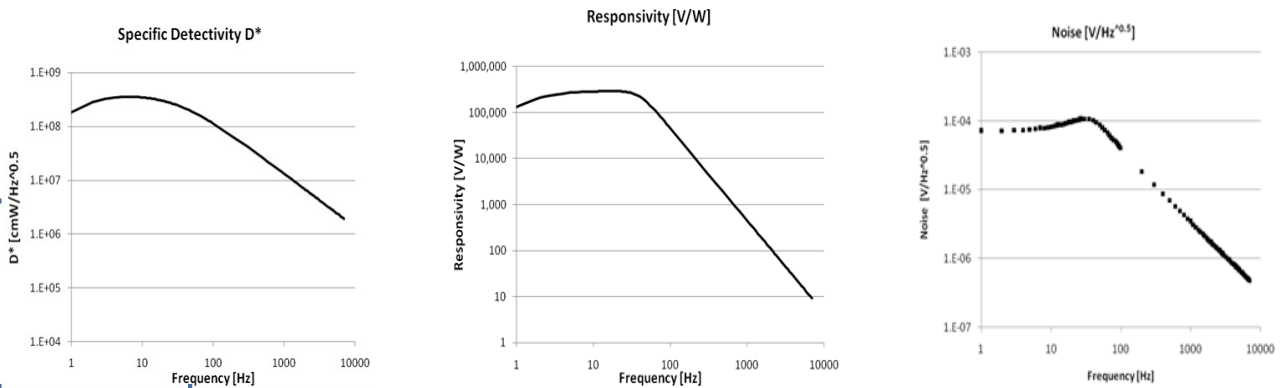
¹ 10Hz normalized without window & optics

Max. Voltage	8.0V
Min. Voltage	2.7V
Output Voltage	Normalised around mid rail
Microphonics	$S_{\text{vib}} \sim 2 \mu\text{V}/\text{g}$ at 10Hz
Package	TO39
Filter	8 standard types & custom

Operating Temperature -20 to +70 C

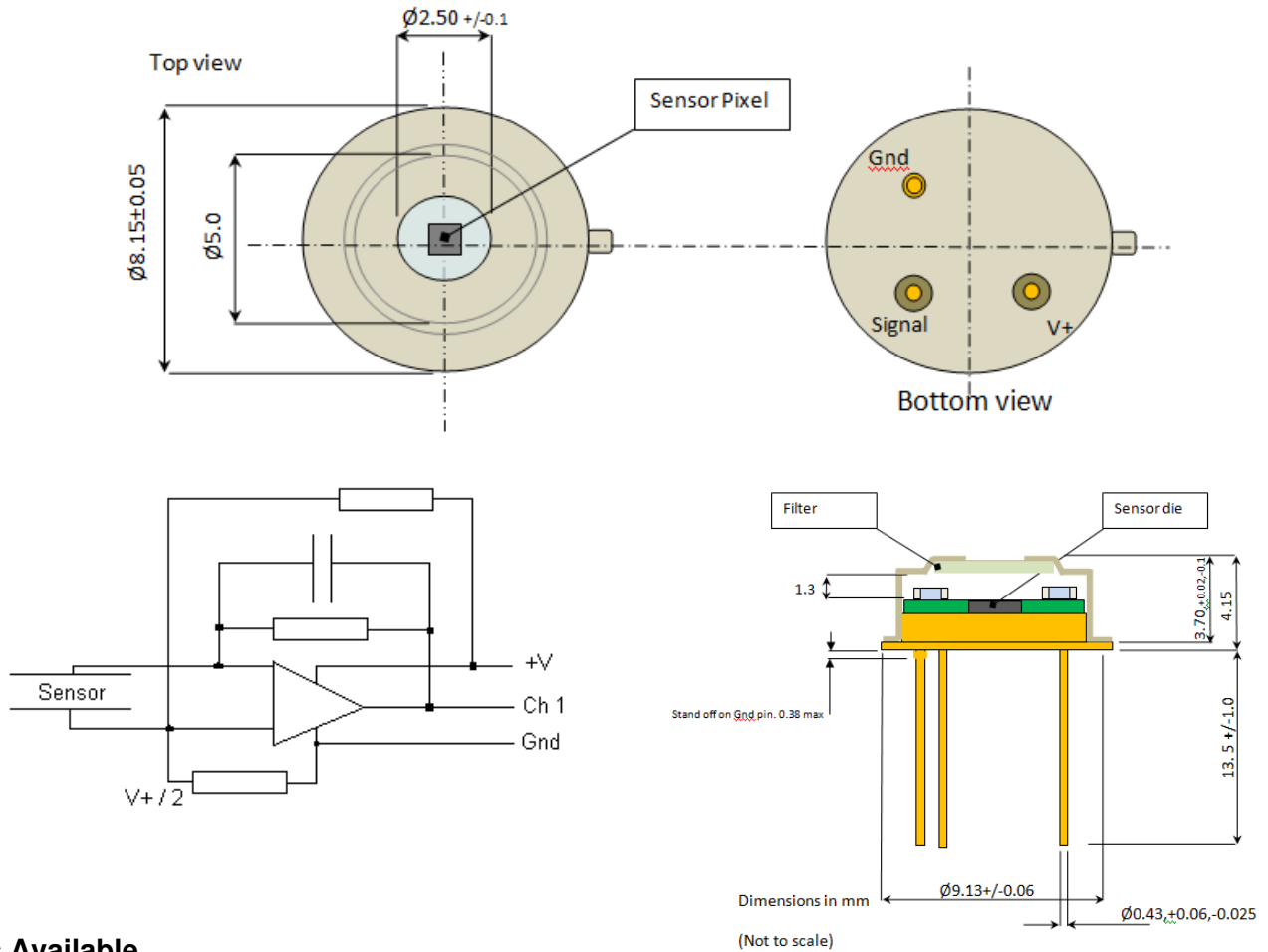
Storage Temperature -20 to +110 C

Frequency Characteristics



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Package Information & Circuit Diagram:

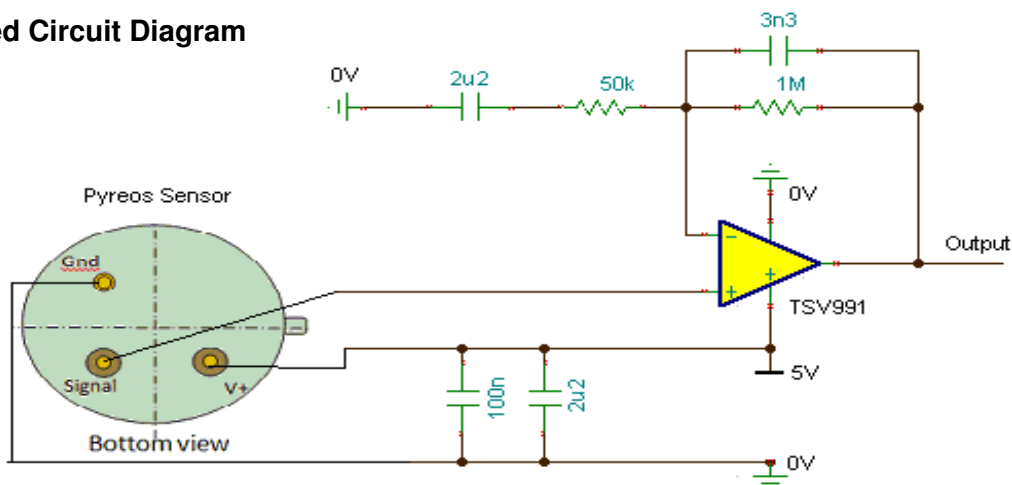


Filters Available

Pyreos has a range of standard filters for CO₂ CO hydrocarbon methane NO_x SO_x fire/flame and we can also rapidly process a customized filter for you. Typical performance values measured are shown.

Filter	CO ₂	CO	CH ₄	H-C	CO ₂ Narrow	CONarrow	Ref.
CWL μ m (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 μ V \sqrt Hz	70	70	70	70	70	70	70

Recommended Circuit Diagram



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