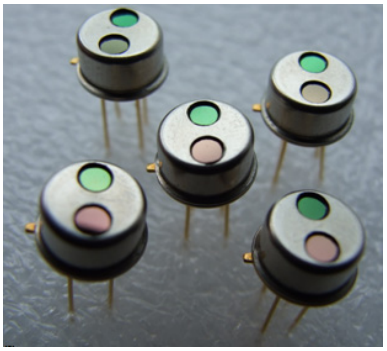
PYREOS

LASER COMPONENTS

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.

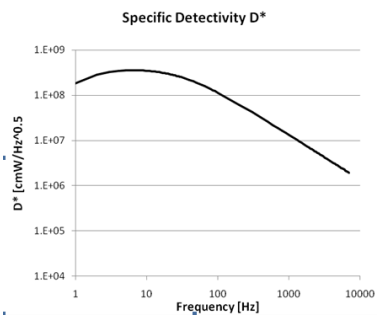
Sensor Information

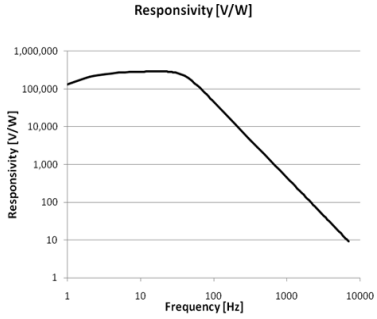
Filter aperture	2.6 mm square **or** 3.5 mm **ø**
Element size	1000 µm x 1000 µm
Op amp with 10G Ohm feedback resistor	
Time Constant	~12 ms
Responsivity[1]	**150,000 V/W**
D* [1]	***3.5 x 10^8 cm√Hz/ W***
Noise [1]	**60 uV√*Hz***

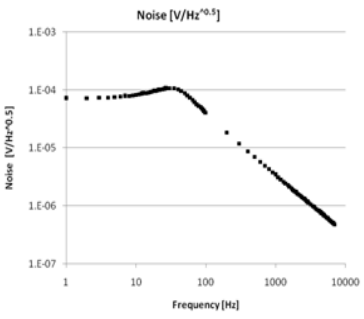
[1] 10Hz normalized without window & optics

Max. Voltage	8.0V
Min. Voltage	2.7V
Output Voltage Normalised around mid rail	
Microphonics	S $_{vib}$~2 µV/ 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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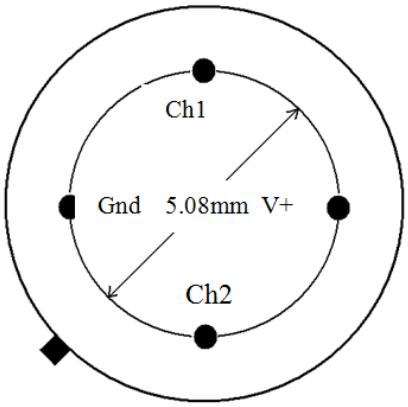
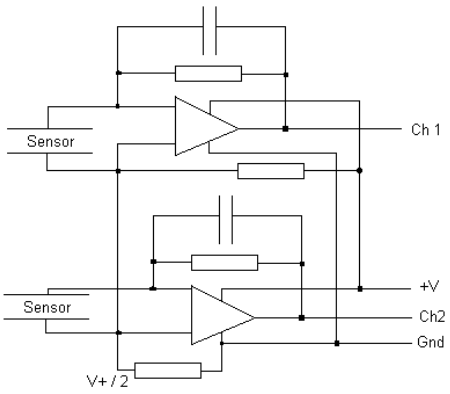
LASER COMPONENTS (UK) Ltd
Goldlay House, 114 Parkway, Chelmsford, Essex. CM2 7PR, Phone: 01245 491 499, Fax: 01245 491 801, info@lasercomponents.co.uk

Package Information & Circuit Diagram:



Top View

Pin compatible with leading brands



Voltage mode output

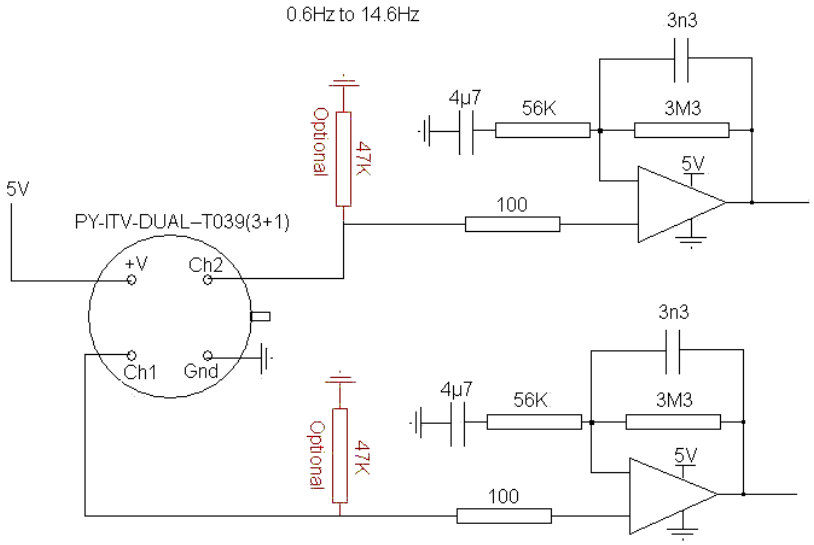
Filters Available

Pyreos has a range of standard filters available for all typical gases and can also access libraries of filters for a customized solution. Please ask your local sales contact for detailed filter transmission plots. Typical performance values measured with the 2.6mm square filters for our standard CO_2 and reference filters are shown;

Filter Centre bandwidth	**CO_2** 4.26µm	**Ref.** 3.91µm
Responsivity V/W (500K, 10Hz)	~7500	~3900
Noise 10Hz u$V\sqrt{Hz}$	~60	~60

Recommended Circuit

Pyreos dual channel detectors offer the maximum performance in the following recommended circuit diagram. They can also be incorporated into other suppliers recommended circuits, with no changes and will still likely offer a performance improvement.



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