

Thin Film Pyroelectric Single Channel Sensor

Introduction

Pyreos thin film pyroelectric IR sensors for gas detection and concentration measurement offer exceptionally high responsivity, low microphonics and class leading thermal and electrical stability. This high performance current mode sensor 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 operational amplifier, with a 10 GΩ feedback resistor outputting a voltage signal centred around half the supply rail.

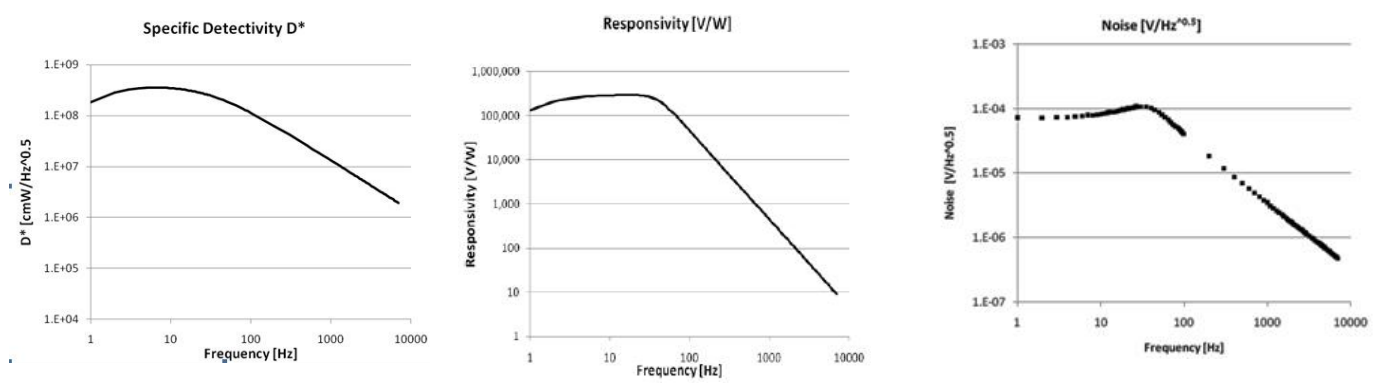


Sensor Characteristics	
Filter aperture	2.5 mm \varnothing
Element size	1000 μm x 1000 μm
Package	TO39
Responsivity ¹	150,000 V/W
D* ¹	$3.5 \times 10^8 \text{ cm}\sqrt{\text{Hz}}/\text{W}$
Noise ¹	70 $\mu\text{V}\sqrt{\text{Hz}}$
Op amp with 10 GΩ feedback resistor	

Electrical Characteristics	
Max. Voltage (+V)	8.0 V
Output voltage normalised around mid-rail	
Min. Voltage (+V)	2.7 V
Microphonics	$S_{\text{vib}} \sim 2 \mu\text{V}/\text{g}$ at 10 Hz
Time Constant	~12 ms
Operating Temperature	-40 to +85 °C
Storage Temperature	-40 to +110 °C
Filter	See "Filters Available"

¹ 10 Hz, 500 K, room temperature, without window and optics

Frequency Characteristics

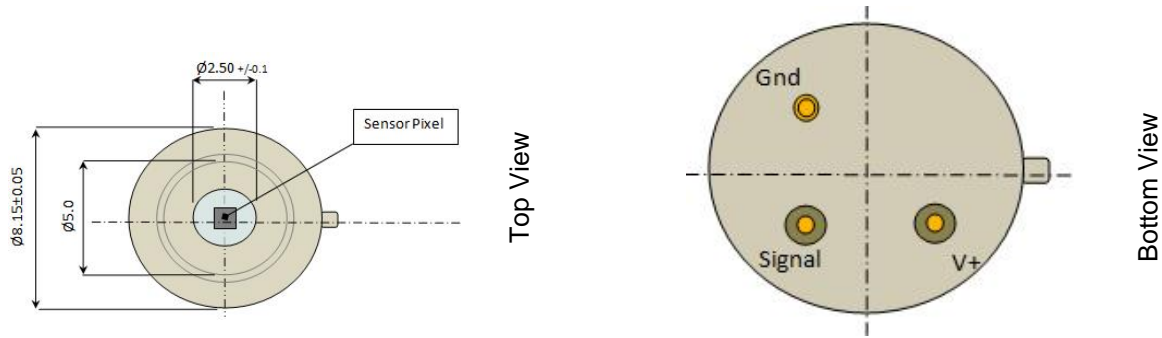


Order Information

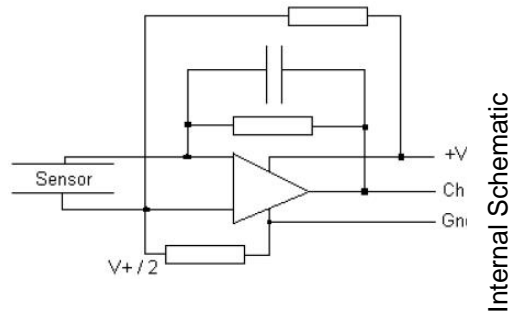
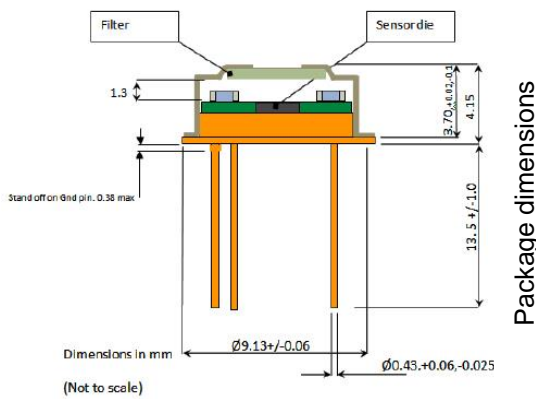
Please quote PY-ITV-SINGLE-TO39(2+1) and your desired filter combination or quote specific part number PY0XXX as per filter table. Contact: sales@pyreos.com

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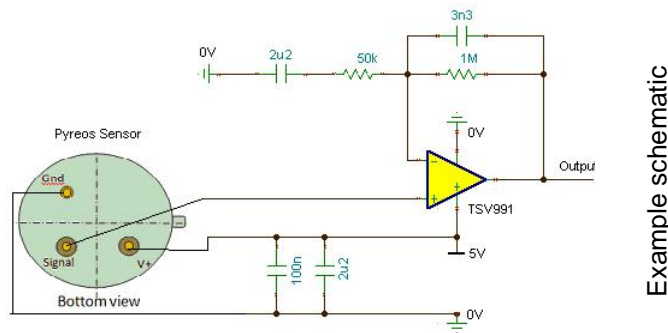
Package Information



Filter window size



Recommended Circuit Diagram



Filters Available

Part number	PY0175	PY0211	PY0213	PY0293	PY1944	PY0212	PY0210	PY0275	PY0253	PY0254
Filter	CO ₂	CO	CH ₄	H-C	CO ₂ Narrow	CO Narrow	CO ₂ Special	Ref.	NO	SO _x
CWL μm / (HPB nm)	4.26 (180)	4.64 (180)	3.30 (160)	3.375 (190)	4.30 (110)	4.64 (90)	4.43 (60)	3.91 (90)	5.30 (180)	7.30 (200)

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