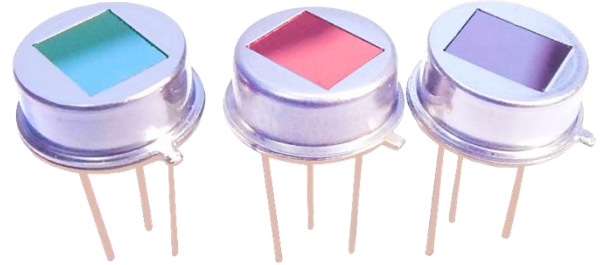


Thin Film Pyroelectric Flame Sensor

Introduction

The Pyreos thin film pyroelectric flame detectors offer exceptionally high responsivity, a wide field of view of typically 100° (*subject to filter band pass specification) and class leading rapid recovery from thermal and electrical shocks (<1 second downtime). This current mode sensor has excellent signal to noise at the signature 8-10 Hz flicker range of a flame, and can provide accurate discrimination of flame sources in triple IR flame detection systems. The sensor element is built into a low noise circuit that has an internal CMOS op amp with a 10GΩ feedback resistor outputting a voltage signal centred around half the supply rail.



Sensor Characteristics

| | |
|---------------------------|--------------------------------|
| Filter aperture | 5.2 mm x 4.2 mm |
| Element size | 1000 μm x 1000 μm |
| Package | TO39 |
| Responsivity ¹ | 150,000 V/W |
| D* ¹ | 3.5 x 10 ⁸ cm√Hz/ W |
| Noise ¹ | Mean 70 μV/√Hz |
| Field of View | Typical 100° ² |

¹10 Hz, 500 K, room temperature, without window and optics

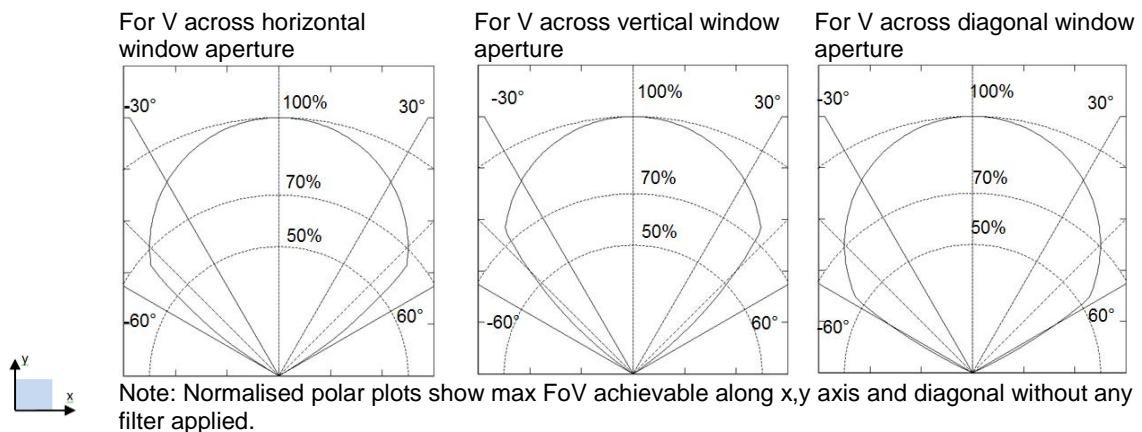
²With reference to filter used in PY0573

Electrical Characteristics

| | |
|---|-------------------------------------|
| Max. Voltage (+V) | 8.0 V |
| Min. Voltage (+V) | 2.7 V |
| Output voltage normalised around mid-rail | |
| Microphonics | S _{vib} ~2 μV/√Hz at 10 Hz |
| Time Constant | ~12 ms |
| Operating Temperature | -40 to +85 °C |
| Storage Temperature | -40 to +110 °C |
| Op-Amp with 10 GΩ feedback resistor | |

| | |
|--------|--------------------------------|
| Filter | As per Filters Available table |
|--------|--------------------------------|

Frequency Characteristics



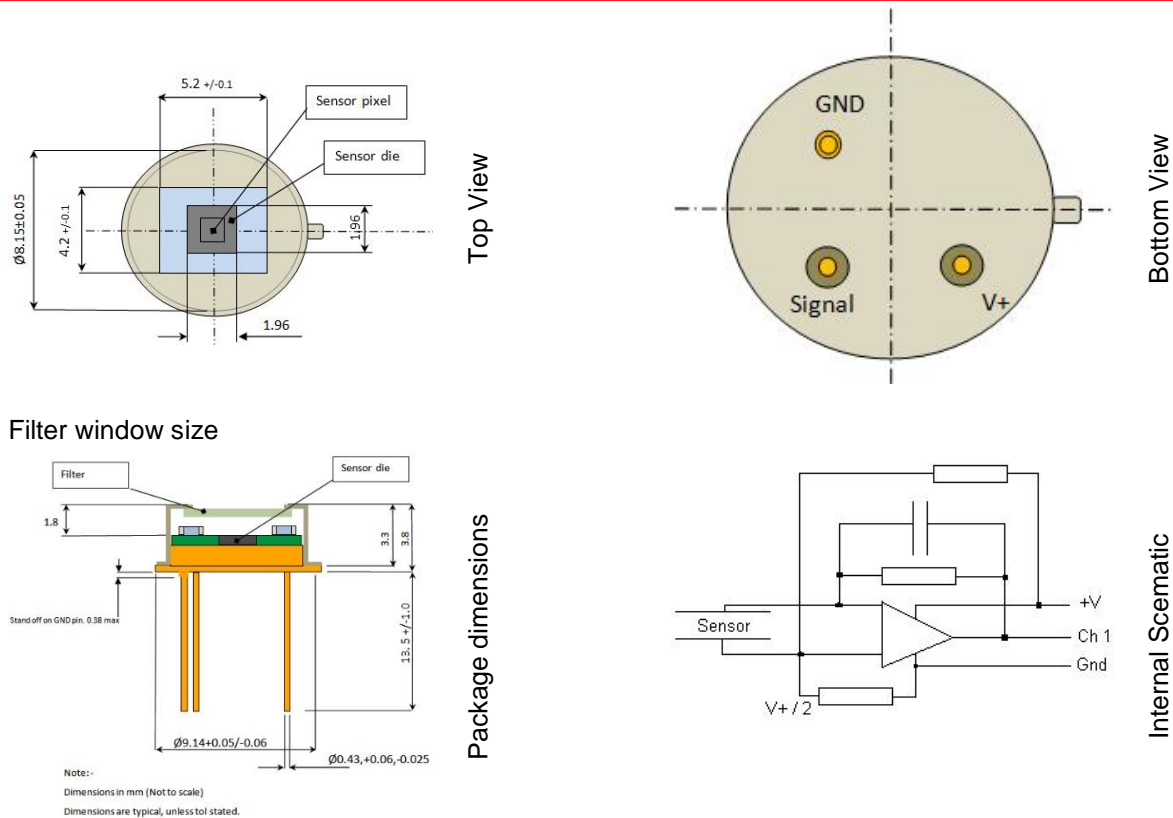
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Order Information

Please quote PY-ITV-FLAME-TO39(2+1) and your desired filter combination or quote specific part number PYXXXX as per filter table.

Contact: sales@pyreos.com

Package Information



Note: Ensure that the sensor base is not in contact with the PCB in order to avoid shorts.

Filters Available

| Part number | PY1580 | PY0575 | PY0573 | PY1600 | PY0574 | PY1601 | PY0576 |
|--|-----------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|--------------------------|--------------------------|
| Filter name | 3.38 μm bandpass | 3.91 μm bandpass | 4.35 μm bandpass | 4.48 μm bandpass | 4.55 μm band pass | 5.0 μm cut on | 5.5 μm cut on |
| Cut on wavelength typical (μm) | 3.295 | 3.865 | 4.05 | 4.17 | 4.34 | 5.0 | 5.5 |
| Cut off wavelength typical (μm) | 3.475 | 3.955 | 4.65 | 4.79 | 4.76 | - | - |

Note: An additional window is required to provide high wavelength blocking (above 8.0 μm) and thermal shielding.

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