



## Two Channel Pyroelectric Low Noise Detector PS2x1U2-A-S1.5

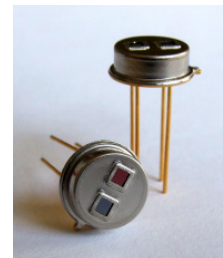
Pyroelectric dual-channel current mode detector for NDIR gas analysis with unipolar low noise circuit.

|   |  |                               |
|---|--|-------------------------------|
| Active Area                                     | 2 x (0.8 x 0.8)  | mm <sup>2</sup>               |
| Aperture  | 2 x (1.5 x 1.5)  | mm <sup>2</sup>               |
| Mode  | Current  |                               |
| Time Constant $t_{(0-63\%)} \text{ thermal}$    | typ. 17  | ms                            |
| Time Constant $t_{(0-63\%)} \text{ electrical}$ | typ. 2.7   | ms                            |
| AC Sensitivity <sup>1,2,3</sup>                 | typ. 175000  | V/W                           |
| Noise Density Voltage <sup>1</sup>              | typ. 50  | $\mu\text{V}/\text{Hz}^{1/2}$ |
| Noise Equivalent Power NEP <sup>1,2,3</sup>     | typ. $2.86 \times 10^{-10}$  | W/Hz <sup>1/2</sup>           |
| Specific Detectivity $D^* \sup{1,2,3}$          | typ. $2.8 \times 10^8$   | cmHz <sup>1/2</sup> /W        |
| Microphonic Voltage <sup>1</sup>                | typ. 2500  | $\mu\text{V}/\text{g}$        |
| Filling Gas                                     | Kr   |                               |
| Filters   | All Micro-Hybrid standard narrow band pass filters can be combined. Customized filters on request. For more information please see document "infrared filters" |                               |
| Operation Voltage VDD+                          | +4.4...+16   | VDC                           |
| Operation Current                               | max. 0.07  | mA                            |
| Feedback Resistor                               | 10   | GOhm                          |
| Feedback Capacitor                              | 275±55   | fF                            |
| Operation Temperature                           | -25 ... +85  | °C                            |
| Mass  | ~1   | g                             |
| Housing   | T039 (modified)  |                               |

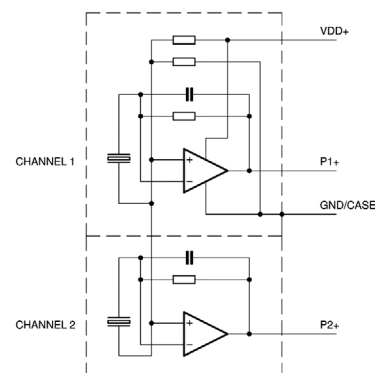
<sup>1</sup> at T<sub>amb</sub>=25 °C, 10 Hz, band width 1 Hz

<sup>2</sup> Blackbody T=500 K; E=38 W/m<sup>2</sup>

<sup>3</sup> on air without windows



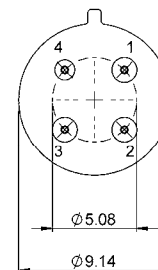
### Equivalent Circuit



### Pin Assignment

#### Bottom View

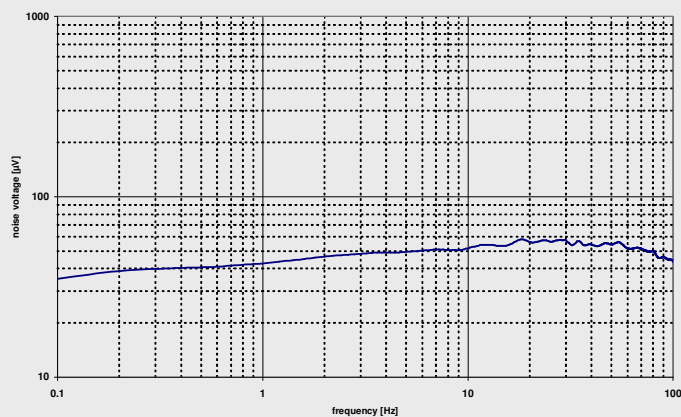
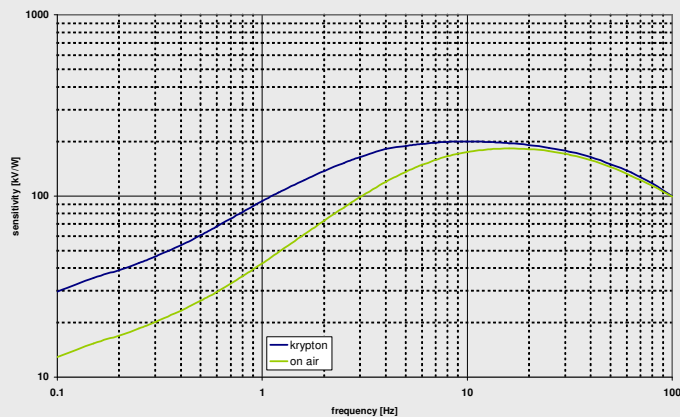
- Pin 1 Output P1+
- Pin 2 VDD+
- Pin 3 Output P2+
- Pin 4 GND



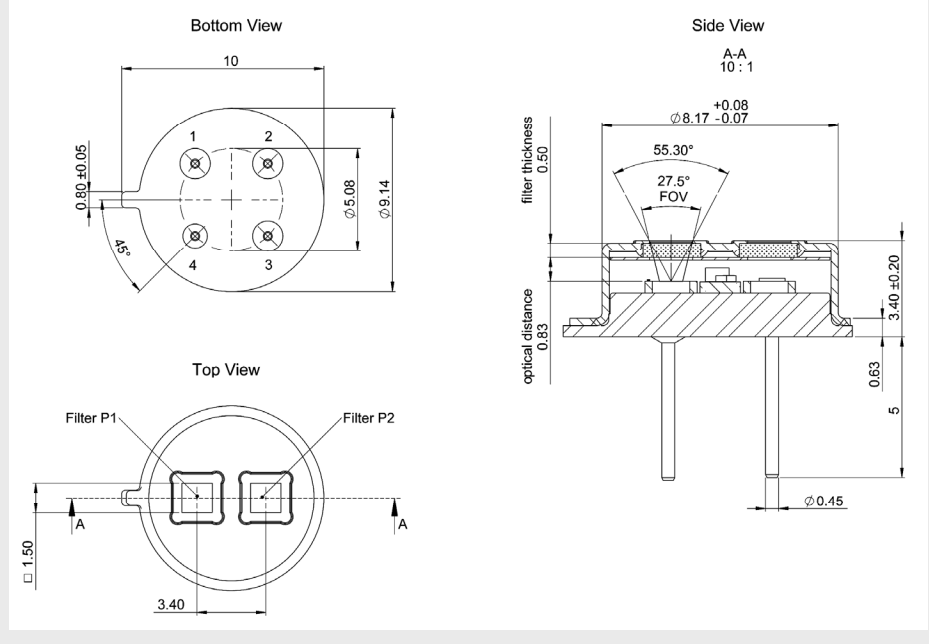
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## Frequency Response



## Housing



## Ordering Information

PS2x1U2-A-S1.5-Filling Gas (GG)-Filters (H/H)

e.g. PS2x1U2-A-S1.5-Kr-E1/D1

## Optional parts

IR-Source JSIR 350 - Fast IR emitter based on thin film technology  
Art.-Nr. 6353.01-3.01

Evaluation Kit - For independent evaluation of emitters and detectors  
Art.-Nr. 7206.01-A.00