

Two Channel Pyroelectric Detector PS2x1U1-A-S1.5

Preliminary Version

Pyroelectric dual-channel unipolar current mode detector with narrow band filters for gas analysis.

Active Area	2 x (0.8 x 0.8)	mm ²
Aperture	2 x (1.5 x 1.5)	mm ²
Mode	Current	
Time Constant $t_{(0-63\%)} \text{ thermal}^1$	typ. 17	ms
Time Constant $t_{(0-63\%)} \text{ electrical}^1$	typ. 2.7	ms
AC Sensitivity ^{1,2,3}	typ. 165000	V/W
Noise Density Voltage ¹	typ. 76	$\mu\text{V}/\text{Hz}^{1/2}$
Noise Equivalent Power NEP ^{1,2,3}	typ. 4.6×10^{-10}	W/Hz ^{1/2}
Specific Detectivity $D^* \sup{1,2,3}$	typ. 1.75×10^8	cmHz ^{1/2} /W
Crosstalk between channels	typ. 0.5	%
Microphonic Voltage ¹	typ. 530	$\mu\text{V}/\text{g}$
Filling Gas	N ₂ (others on customers request)	
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	0-5	V
Operation Current	max. 1.1	mA
Feedback Resistor	10	GOhm
Feedback Capacitor	275±55	fF
Operation Temperature	-25 ... +85	°C
Mass	~1	g
Housing	T039 (modified)	

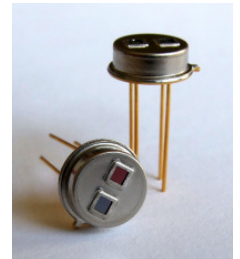
¹ at T_{amb}=25 °C, 10 Hz, band width 1 Hz

² Blackbody T=500 K; E=38 W/m²

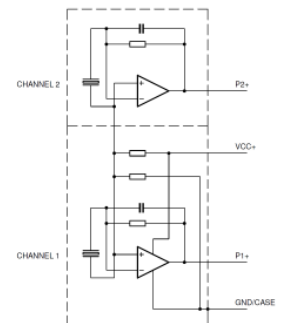
³ on air without windows



MICRO-HYBRID



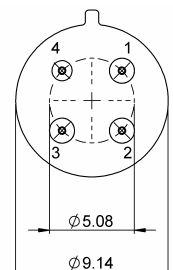
Equivalent Circuit



Bottom View

Pin Assignment:

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



Ordering Information:

PS2x1U1-A-S1.5-Filling Gas (GG)-Filters (H/H)

e.g. PS2x1U1-A-S1.5-N2-E1/D1

Micro-Hybrid Electronic GmbH

Heinrich-Hertz-Straße 8
D-07629 Hermsdorf

Tel +49 366 01 592 100
Fax +49 366 01 592 110

Email: infrared@micro-hybrid.de
Web: www.micro-hybrid.de

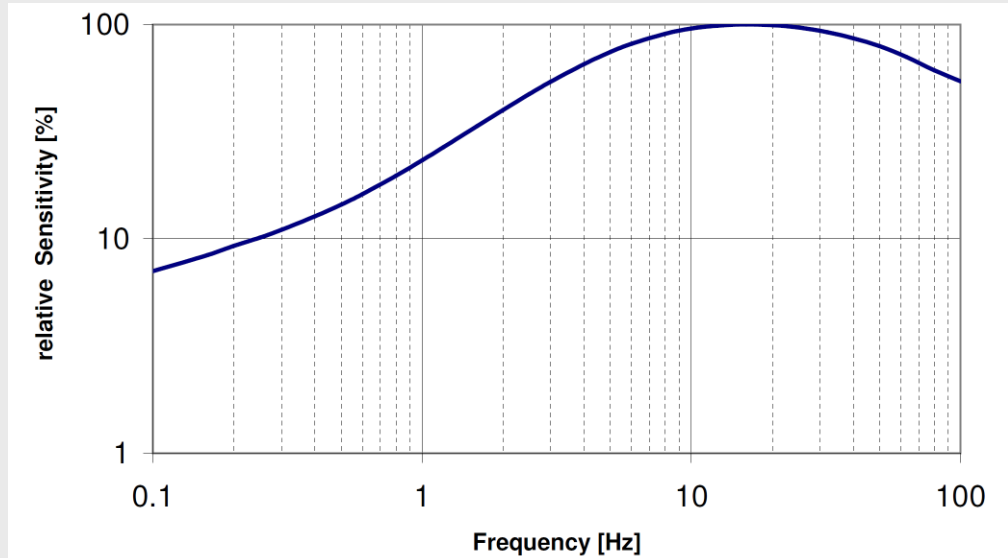
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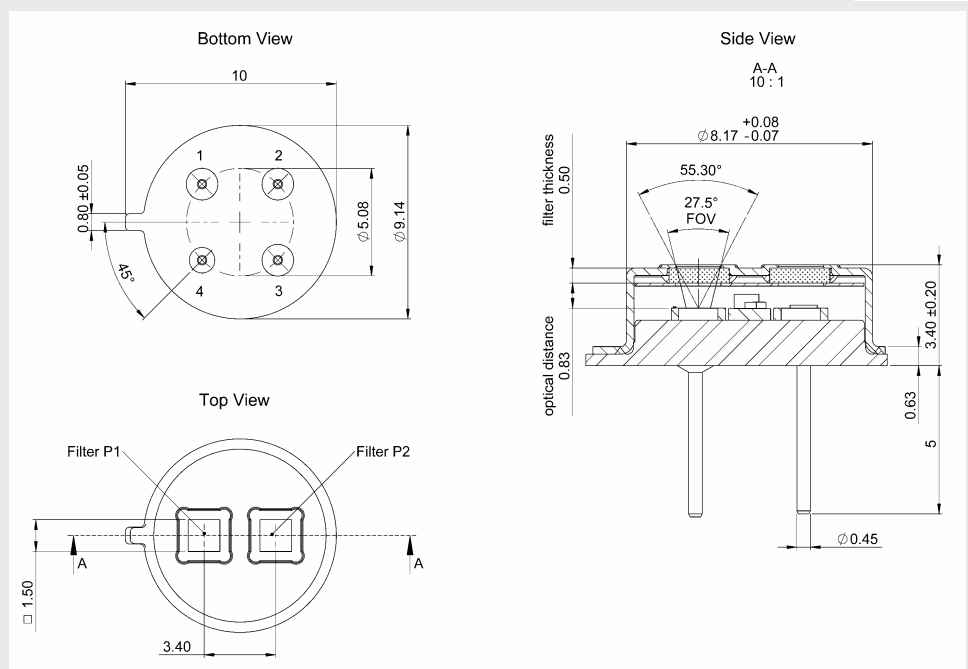
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Frequency Response



Housing T39 Package



Optional part:

IR-Source JSIR 350 - Fast IR emitter based on thin film technology
Art.-Nr. 6351.01-3.01

Micro-Hybrid Electronic GmbH

Heinrich-Hertz-Straße 8
D-07629 Hermsdorf

Tel +49 366 01 592 100
Fax +49 366 01 592 110

Email: infrared@micro-hybrid.de
Web: www.micro-hybrid.de