

One Channel Pyroelectric Low Noise Detector PS1x1U2-A-S1.5

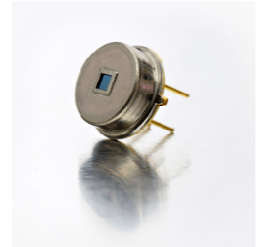
Pyroelectric one-channel current mode detector for NDIR gas analysis with unipolar low noise circuit.

Active Area	0.8 x 0.8	mm ²
Aperture	1.5 x 1.5	mm ²
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 ^{1,2,3}	typ. 175000	V/W
Noise Density Voltage ¹	typ. 50	$\mu\text{V}/\text{Hz}^{1/2}$
Noise Equivalent Power NEP ^{1,2,3}	typ. 2.86×10^{-10}	W/Hz ^{1/2}
Specific Detectivity D^* ^{1,2,3}	typ. 2.8×10^8	cmHz ^{1/2} /W
Microphonic Voltage ¹	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)	

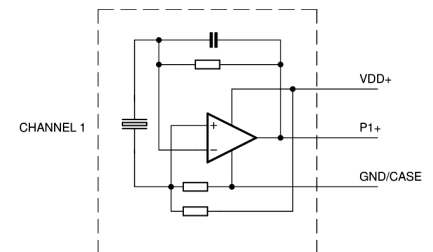
¹ at $T_{\text{amb}}=25\text{ }^\circ\text{C}$, 10 Hz, band width 1 Hz

² Blackbody $T=500\text{ K}$; $E=38\text{ W}/\text{m}^2$

³ on air without windows



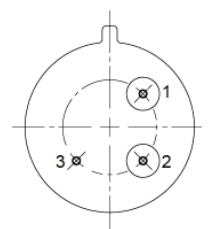
Equivalent Circuit



Pin Assignment

Bottom View

Pin 1 VDD+
Pin 2 Output P1+
Pin 3 GND



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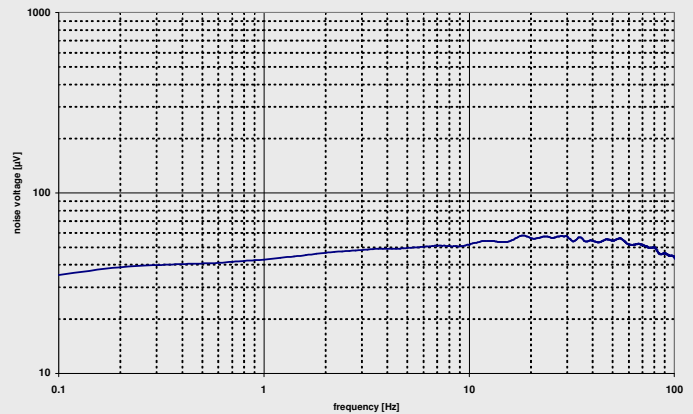
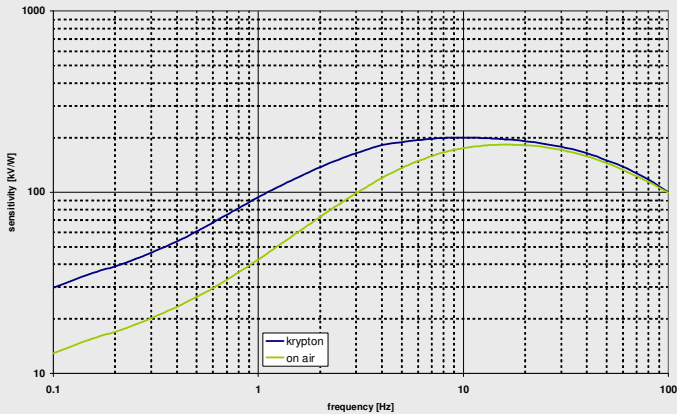
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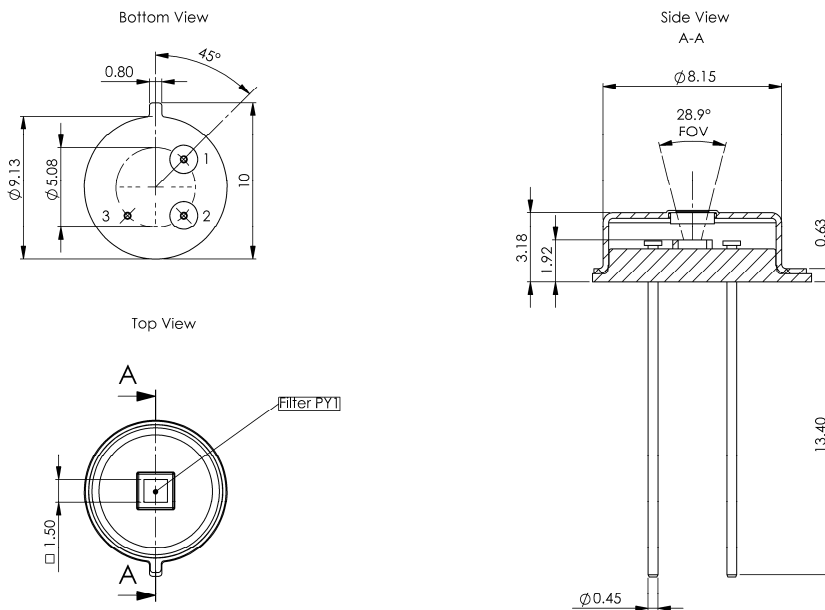
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Frequency Response



Housing



Ordering Information

PS1x1U2-A-S1.5-Filling Gas (GG)-Filter (H)

e.g. PS1x1U2-A-S1.5-Kr-E1

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

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