

## One Channel Pyroelectric Low Noise Detector PS1x1U8-A-S1.5

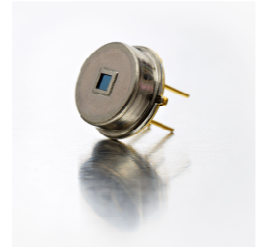
Pyroelectric one-channel current mode detector for NDIR gas analysis with unipolar low noise circuit.

Active Area	0.8 x 0.8	mm <sup>2</sup>
Aperture	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. 27	ms
AC Sensitivity <sup>1,2,3</sup>	typ. 1100000	V/W
Noise Density Voltage <sup>1</sup>	typ. 160	$\mu\text{V}/\text{Hz}^{1/2}$
Noise Equivalent Power NEP <sup>1,2,3</sup>	typ. $1.45 \times 10^{-10}$	W/Hz <sup>1/2</sup>
Specific Detectivity $D^* \text{ }^{1,2,3}$	typ. $5.50 \times 10^8$	cmHz <sup>1/2</sup> /W
Microphonic Voltage <sup>1</sup>	typ. 25000	$\mu\text{V}/\text{g}$
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	100	GOhm
Feedback Capacitor	275±55	fF
Operation Temperature	-25 ... +85	°C
Mass	~1	g
Housing	T039 (modified)	

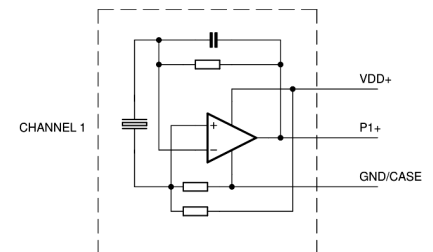
<sup>1</sup> at  $T_{\text{amb}}=25^\circ\text{C}$ , 10 Hz, band width 1 Hz

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

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



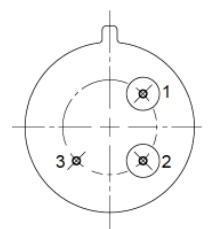
### Equivalent Circuit



### Pin Assignment

#### Bottom View

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



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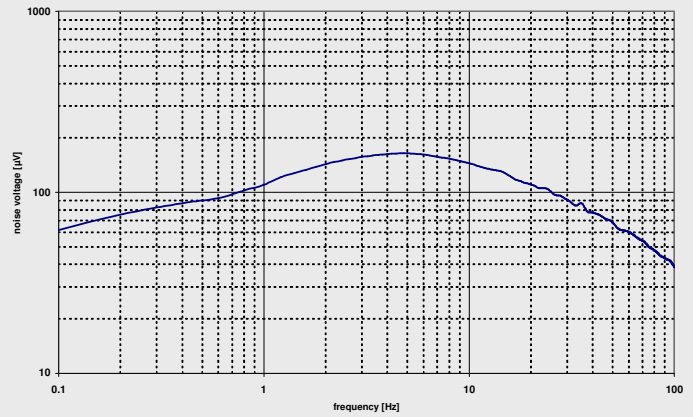
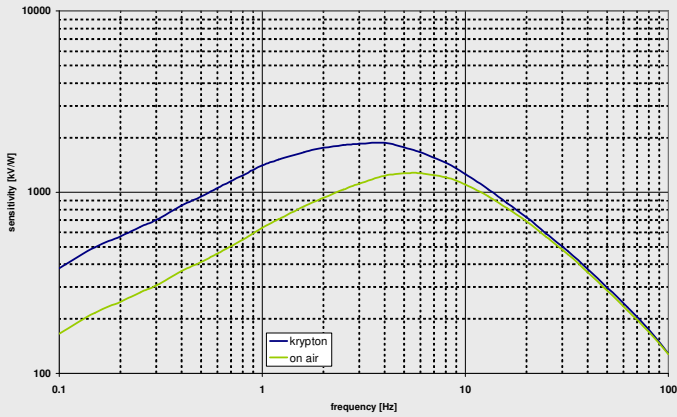
Email: [infrared@micro-hybrid.de](mailto:infrared@micro-hybrid.de)  
Web: [www.micro-hybrid.de](http://www.micro-hybrid.de)

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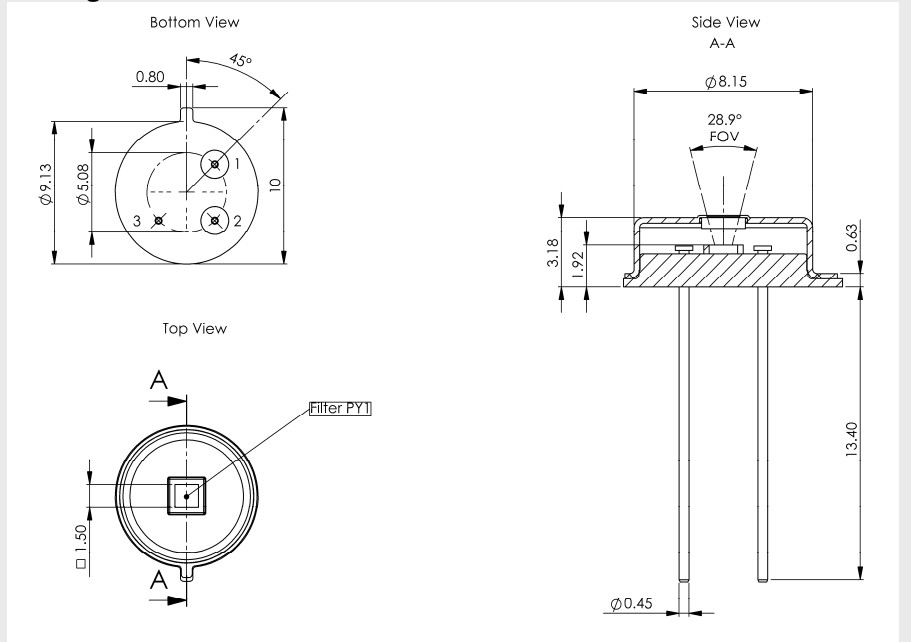


# One Channel Pyroelectric Low Noise Detector PS1x1U8-A-S1.5

## Frequency Response



## Housing



## Ordering Information

PS1x1U8-A-S1.5-Filling Gas (GG)-Filter (H)

e.g. PS1x1U8-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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