

## Pyroelectric Low Noise Flame Detector PS1x3U10-A-D3.7

Pyroelectric one-channel current mode detector for flame detection with large active area and unipolar low noise circuit.

Active Area	1.65 x 1.65	mm <sup>2</sup>
Aperture	Ø 3.7	mm <sup>2</sup>
Mode	Current	
Time Constant $t_{(0-63\%)} \text{ thermal}$	typ. 62	ms
Time Constant $t_{(0-63\%)} \text{ electrical}$	typ. 0.02	ms
AC Sensitivity <sup>1,2,3</sup>	typ. 2000	V/W
Noise Density Voltage <sup>1</sup>	typ. 1.5	$\mu\text{V}/\text{Hz}^{1/2}$
Noise Equivalent Power NEP <sup>1,2,3</sup>	typ. $7.5 \times 10^{-10}$	W/Hz <sup>1/2</sup>
Specific Detectivity $D^*$ <sup>1,2,3</sup>	typ. $2.20 \times 10^8$	cmHz <sup>1/2</sup> /W
Microphonic Voltage <sup>1</sup>	typ. 50	$\mu\text{V}/\text{g}$
Filling Gas	Kr	
Filters	It is recommended to use filters with a CWL of 4.3 $\mu\text{m}$ or 5 $\mu\text{m}$ . 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	0.1	GOhm
Feedback Capacitor	200±50	fF
Operation Temperature	-25 ... +125	°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  $T=500\text{K}$ ;  $E=38\text{W}/\text{m}^2$

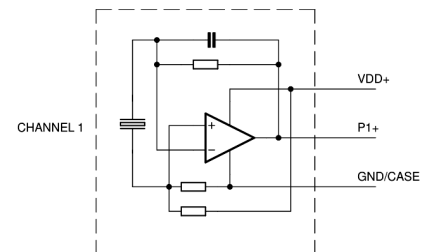
<sup>3</sup> on air without windows



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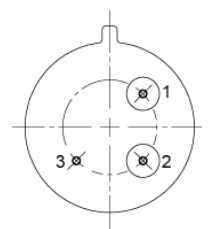
### Equivalent Circuit



### Pin Assignment

#### Bottom View

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



**Micro-Hybrid Electronic GmbH**

Heinrich-Hertz-Straße 8  
D-07629 Hermsdorf

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

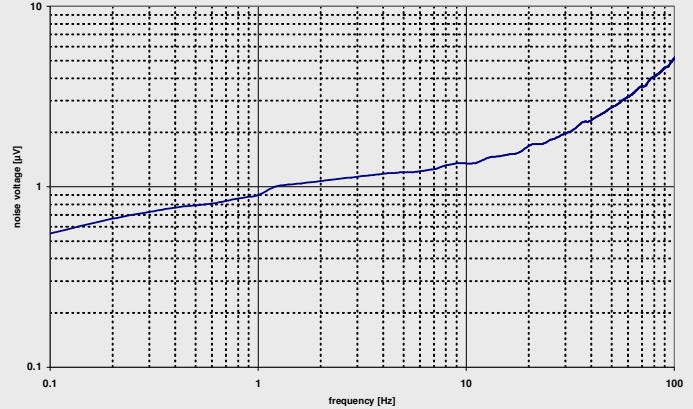
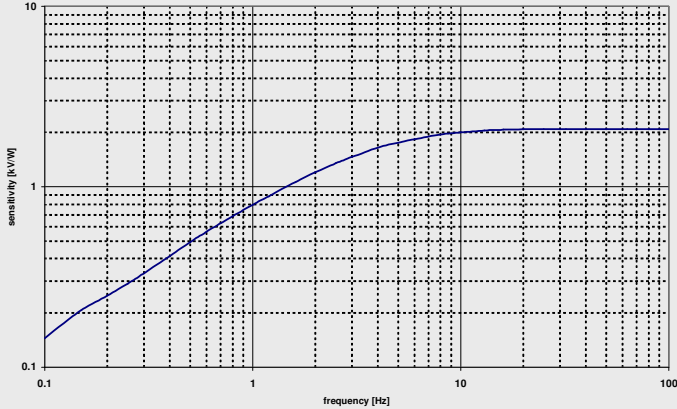
Email: [infrared@micro-hybrid.de](mailto:infrared@micro-hybrid.de)  
Web: [www.micro-hybrid.de](http://www.micro-hybrid.de)

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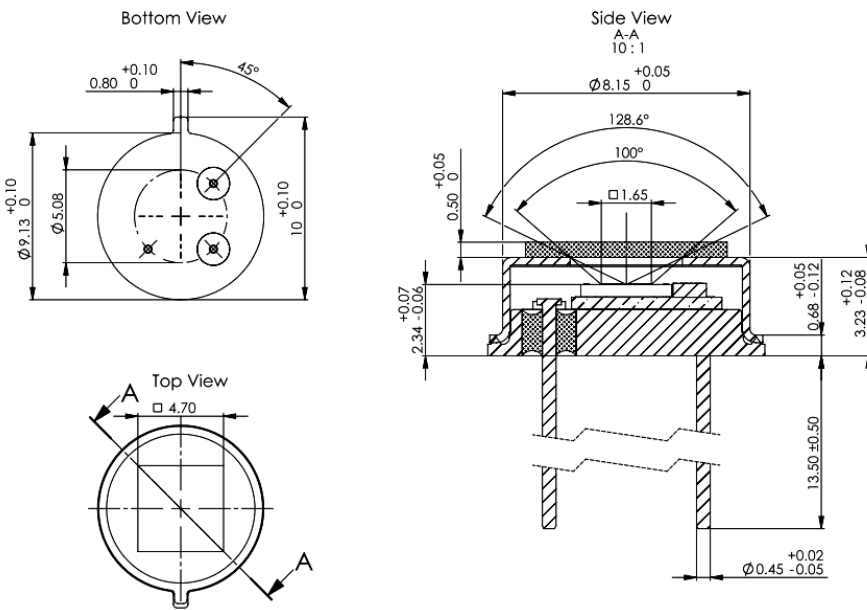
# Pyroelectric Low Noise Flame Detector PS1x3U10-A-D3.7



## Frequency Response



## Housing



## Ordering Information

PS1x3U10A-S1.5-Filling Gas (GG)-Filter (H)

e.g. PS1x3U10-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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Heinrich-Hertz-Straße 8  
D-07629 Hermsdorf

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

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

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