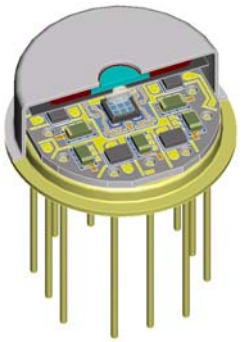
PRELIMINARY

PIA-903-X001

angular resolving pyroelectric detector

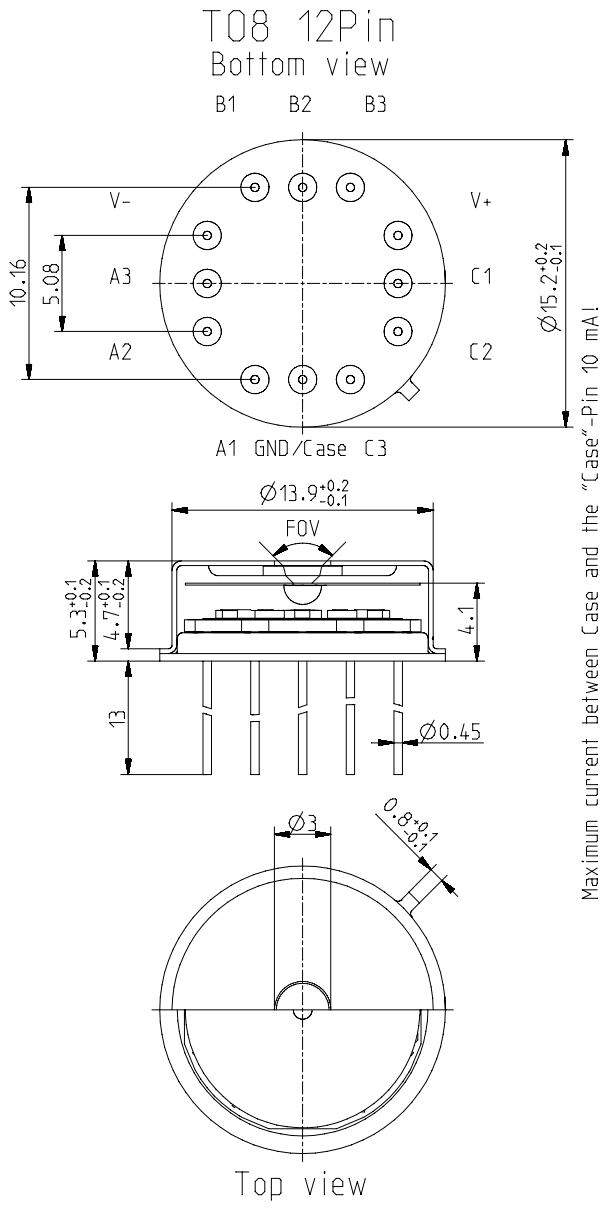
Description: **PROTOTYPE**

suitable for flame localization within an angle of ±45° both vertical and horizontal,
3 x 3 active elements, element size 0.3 mm x 0.3 mm, pitch 0.5 mm,
TO8 housing, integrated Sapphire lens,
OpAmp, current mode, feedback 5 GOhm, aperture Si WBP (3.85 - 5.05) µm

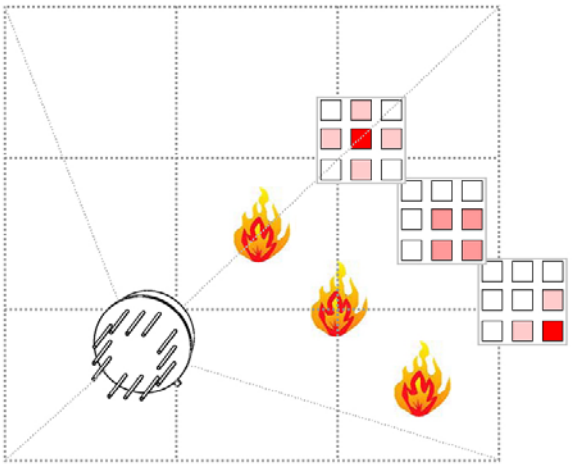


InfraTec Part number: S84857

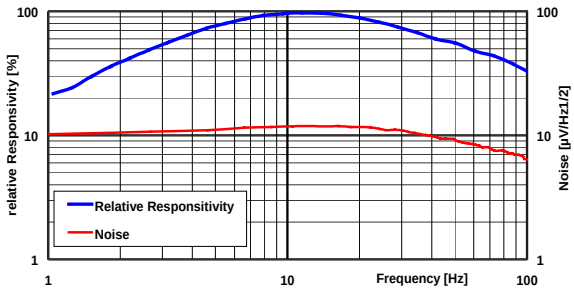
HOUSING:



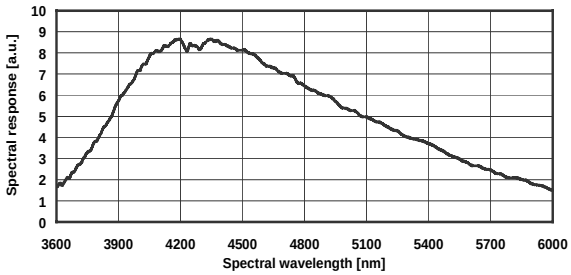
SIGNAL SCHEME:



RESPONSE:



Spectral responsivity FTIR 8cm^-1 (without window)



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Infrarotsensorik und Messtechnik
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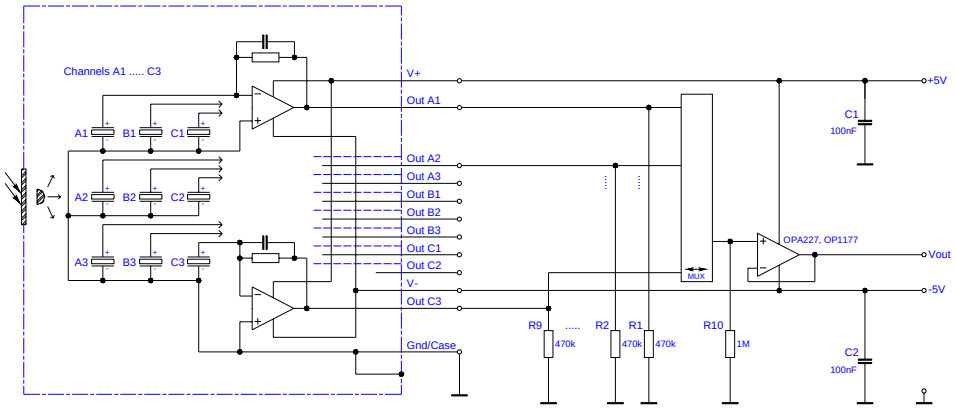
distributed by:

PIA-903-X001

angular resolving pyroelectric detector

TEST CIRCUIT:



PARAMETERS:

Aperture size	nom	ø1.0 mm
Element size / type	nom	0.3x0.3 mm², 3x3 array
Thermal time constant	typ	15 ms
Electrical time constant	typ	5 ms
Feedback resistor	nom	5 GOhm ±10%
Feedback capacitor	nom	1.0 pF ±0.2 pF
Polarity	nom	negative signal by positive IR flux change
Voltage responsivity (rms) {500K, 10 Hz, 25 °C, without window}	min	65,000 V/W (without optics)
Voltage responsivity (rms) Channel 1 {500K, 10 Hz, 25 °C, window included}	typ	750 V/W (B2, center element)
Noise density (rms) {10 Hz, BW 1 Hz, 25 °C}	max	13 µV/(sqrt[Hz])
Detectivity {500K, 10 Hz, 1 Hz, 25 °C, without window}	min	1.5E+08 cm(sqrt[Hz])/W
CMOS operational amplifier	nom	OpAmp2
Supply voltage V+ - V-	max	16 V
Operating supply voltage V+ / V-		+2.2 ... 8.0 V / -2.2 ... -8.0 V
Recommended supply voltage V+ / V-	nom	V+ = +5 V; V- = -5 V
Supply current {output load 1MOhm}	max	750 µA
Offset voltage {25 °C; output load 1MOhm}		-5 mV ... +5 mV
Optimal output load	nom	330 kOhm
Absolute output current	max	±0.4 mA
Operating / Storage temperature	nom	-25 ... +85°C
IR window		Si WBP 3.850-5.050µm
Field of View	nom	±45°