

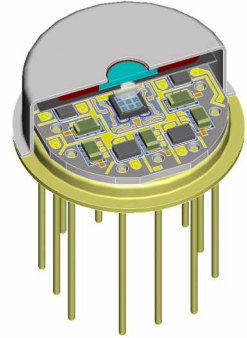
# PRELIMINARY

## PIA-903-X002

angular resolving pyroelectric detector

### Description:

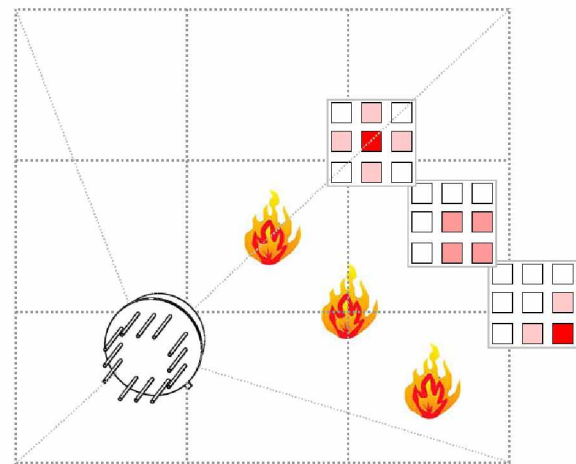
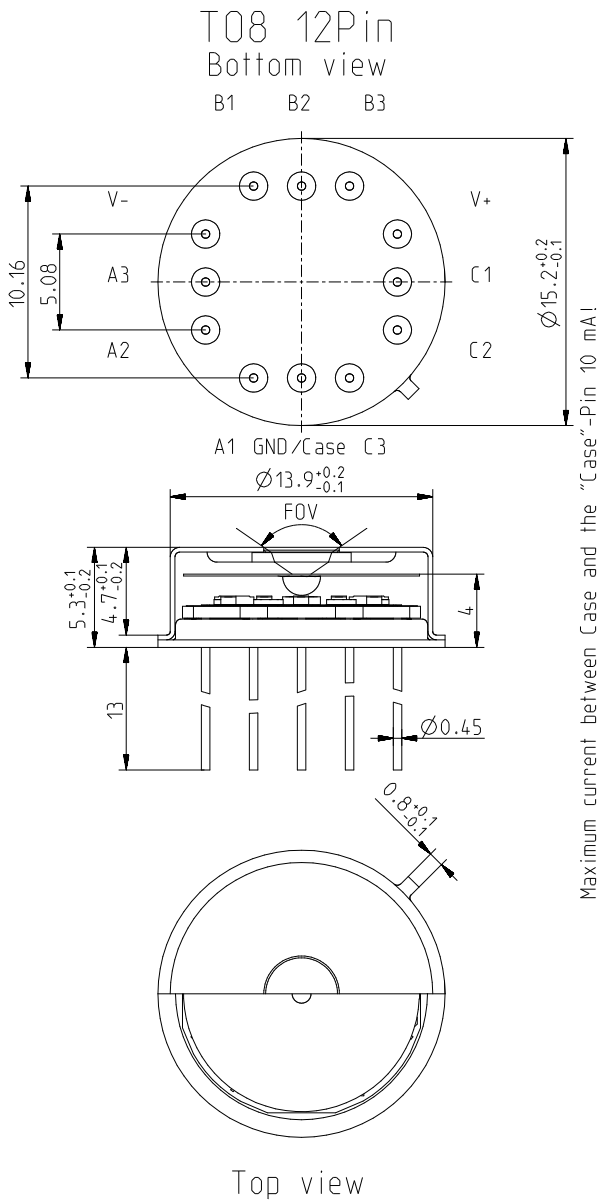
multi element; TO8 housing; OpAmp; current mode; feedback 5GOhm;  
 aperture Si ARC 3.0-10.0µm;  
 integrated Sapphire lens  
 3 x 3 pyroelectric elements, active area 1.7 mm x 1.7 mm  
 suitable for flame localization within a field of view (FOV) of up to 100°



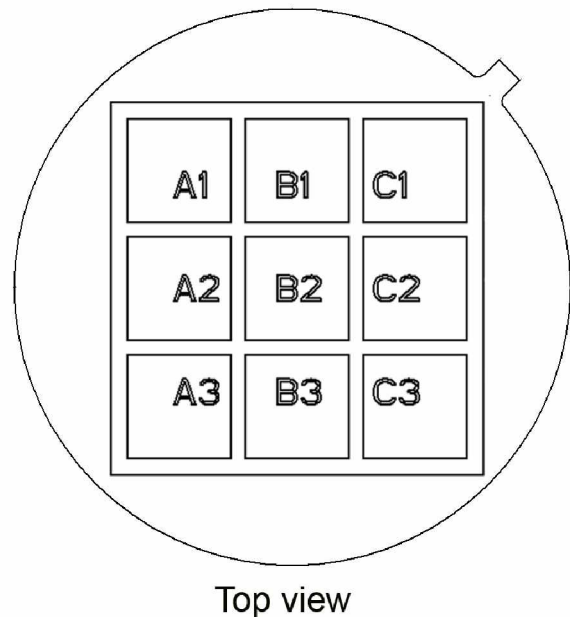
InfraTec Part number: **S85414**

HOUSING:

SIGNAL SCHEME:



ELEMENT LAYOUT



# PRELIMINARY

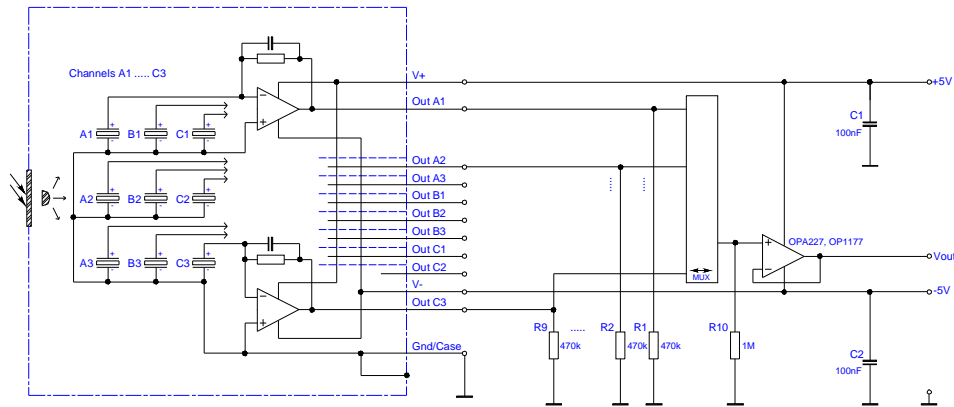
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Datasheet - Customized product

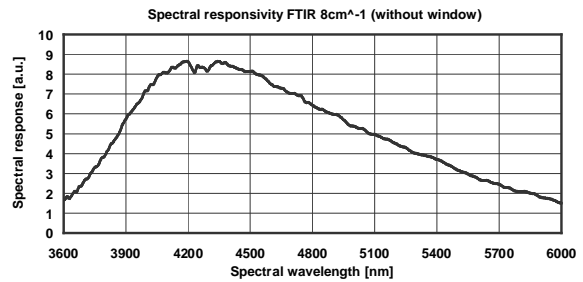
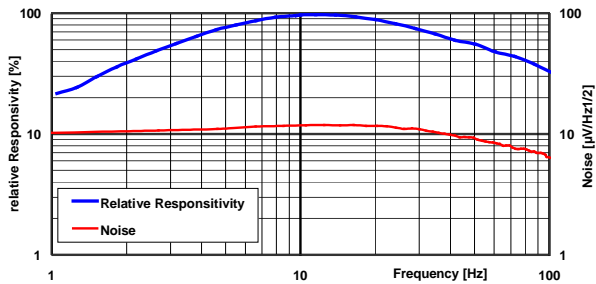
## PIA-903-X002

angular resolving pyroelectric detector

### TEST CIRCUIT:



### RESPONSE



### PARAMETERS:

Aperture size	nom	∅1.0 mm
Active area / type	nom	1.7 x 1.7 mm <sup>2</sup> , 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 and optics}	typ	55,000 V/W
Voltage responsivity (rms) channel B2 (center element) {500K, 10 Hz, 25 °C, window and optics included}	typ	8000 V/W
Noise density (rms) {10 Hz, BW 1 Hz, 25 °C}	max	18 µV/(sqrt[Hz])
Detectivity {500K, 10 Hz, 1 Hz, 25 °C, without window and optics}	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 ARC 3 - 10µm
Field of View (FOV)*	nom	100°
*3dB responsivity cutoff of edge pixels		