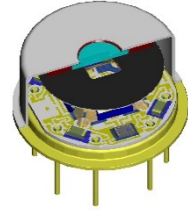


## LIM-054-#

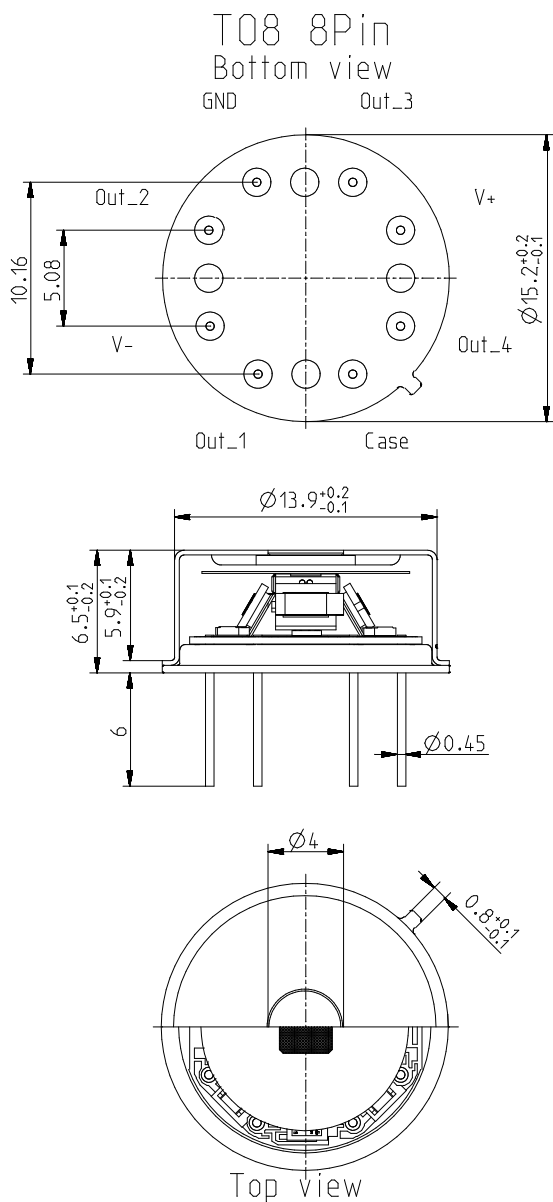
## PYROMID® multi channel pyroelectric detector

### Description:

quad channel; TO8 housing; small chip size; beamsplitter;  
OpAmp; current mode; feedback 22 GOhm;

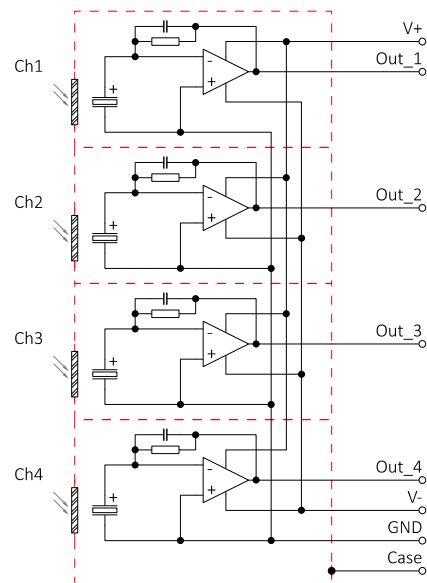


### Housing:

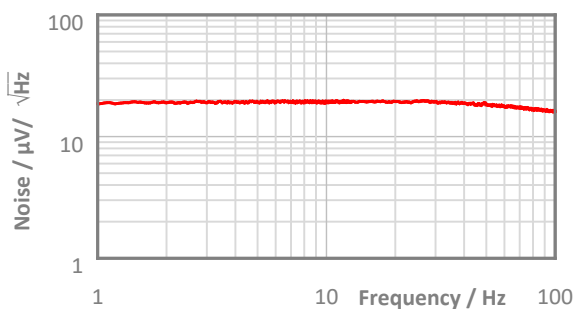
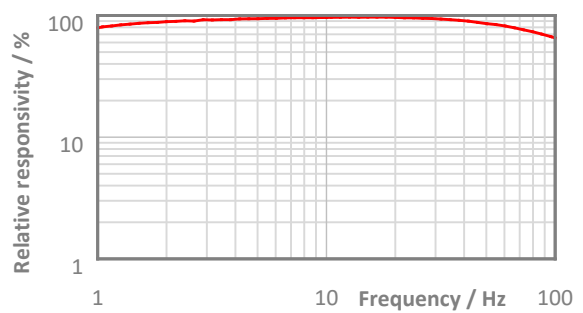


Maximum current between Case and the "Case"-Pin 10 mA!

### Pin Assignment:



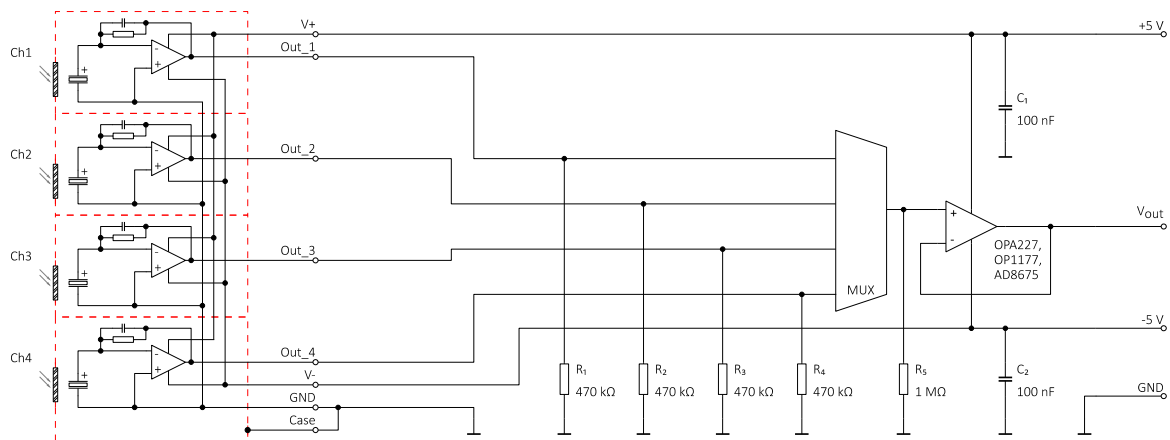
### Frequency Response:



## LIM-054-#

## PYROMID® multi channel pyroelectric detector

### Test Circuit:



### Parameters:

Aperture size	nom	□ 2.8 mm (inlet aperture $\varnothing$ 4.0 mm)
Element size / type	nom	2.2 × 1.3 mm <sup>2</sup> lithium-tantalate with black layer
Beamsplitter	nom	Array of micro pyramids
Thermal time constant	typ	250 ms
Feedback resistor	nom	22 G $\Omega$ $\pm$ 10 %
Feedback capacitor	nom	0.2 pF $\pm$ 0.1 pF
Polarity	nom	Negative signal by positive IR flux change
Voltage responsivity (rms) {500 K, 10 Hz, 25 °C, without filter/window}	min	3,000 V/W
Noise density (rms) {10 Hz, BW 1 Hz, 25 °C}	max	29 $\mu$ V/ $\sqrt$ Hz
Detectivity {500 K, 10 Hz, 1 Hz, 25 °C, without filter/window}	typ	4.2E+07 cmVHz/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 1 M $\Omega$ }	max	150 $\mu$ A
Offset voltage {25 °C; output load 1 M $\Omega$ }		-5 mV ... +5 mV
Optimal output load	nom	470 k $\Omega$
Absolute output current	max	$\pm$ 0.4 mA
Potential of detector case	nom	Selectable potential between -8 ... +8 V to Ground {EMC requires low-impedance coupling}
Operating / Storage temperature	nom	-40 ... +85 °C
IR filter		Combinations of all InfraTec standard narrow band pass filters are available. Customized filters upon request.
Filter sizes	nom	Rectangular filters: (2.70 +0/-0.1 × 2.00 +0.05/-0.1) mm Circular filters: not applicable Standard thickness: 0.50 mm +0.2/-0.1 mm
Aperture window		Selected by manufacturer for best channel filter matching
Aperture window sizes	nom	Rectangular filters: (5.25 × 5.25) mm +0/-0.05 mm Circular filters: $\varnothing$ 6.5 mm $\pm$ 0.1 mm Standard thickness: 0.50 mm +0.2/-0.1 mm
Field of View	min	Maximum angle of incidence shall be $\pm$ 7° otherwise internal reflexions may modify the channel ratio!

InfraTec reserves the right to change these specifications at any time without notification.