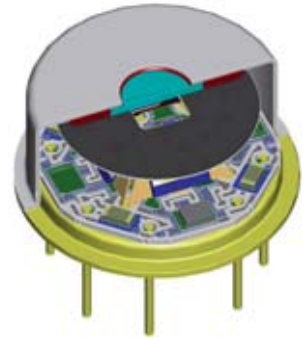


## LIM-054-#

## pyroelectric multispectral detector

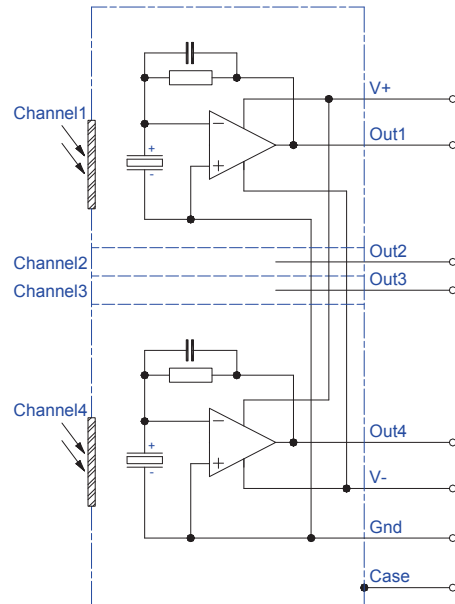
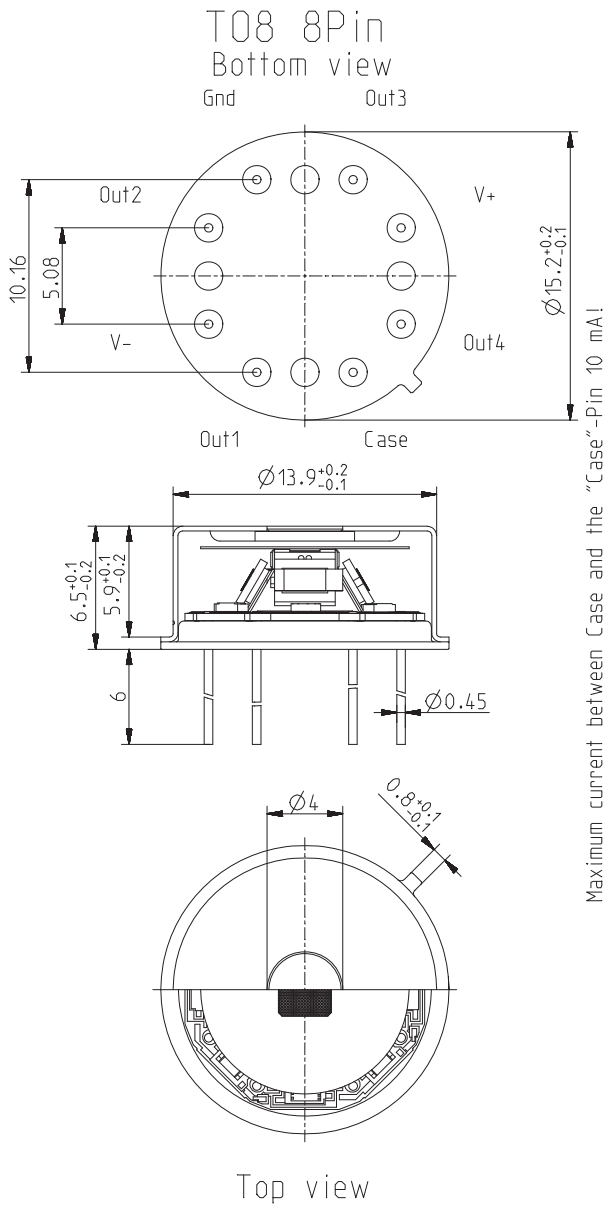
### Description:

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

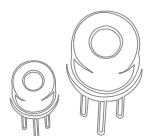
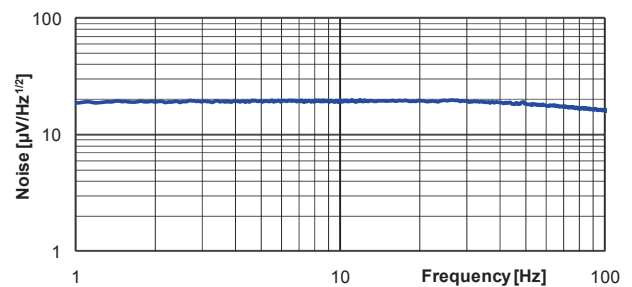
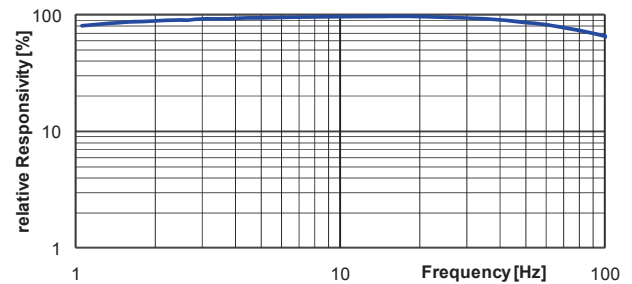


### HOUSING:

### PIN ASSIGNMENT:



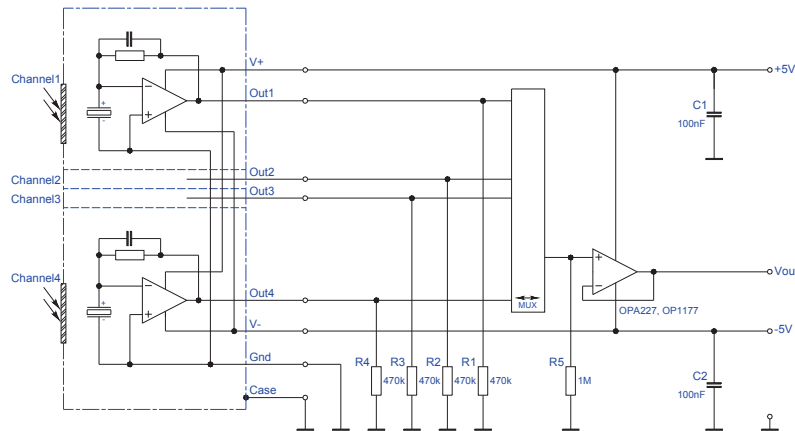
### FREQUENCY RESPONSE:



## LIM-054-#

## pyroelectric multispectral detector

### TEST CIRCUIT:



### PARAMETERS:

Aperture size	nom	2.8 mm sq.
Element size / type	nom	2.2x1.3 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 GOhm ±10 %
Feedback capacitor	nom	0.2 pF ±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 μV/(sqrt[Hz])
Detectivity {500 K, 10 Hz, 1 Hz, 25 °C, without filter/window}	typ	4.2E+07 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 1 MOhm}	max	150 μA
Offset voltage {25 °C; output load 1 MOhm}		-5 mV ... +5 mV
Optimal output load	nom	330 kOhm
Absolute output current	max	±0.4 mA
Potential of detector case	nom	selectable potential between -8 ... +8V to Ground {EMC requires low-impedance coupling}
Operating / Storage temperature	nom	-25 ... +85 °C
IR window		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 x 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+0/-0.05 x 5.25+0/-0.05)mm circular filters: ø6.5 mm ±0.1 mm standard thickness: 0.50 mm +0.2/-0.1 mm
Field of View	min	Maximum angle of incidence shall be ±7° otherwise internal reflexions may modify the channel ratio!

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

