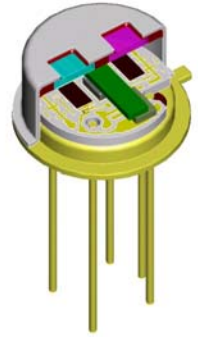


## LIM-162-#

## pyroelectric multispectral detector

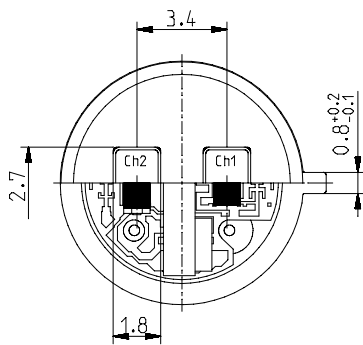
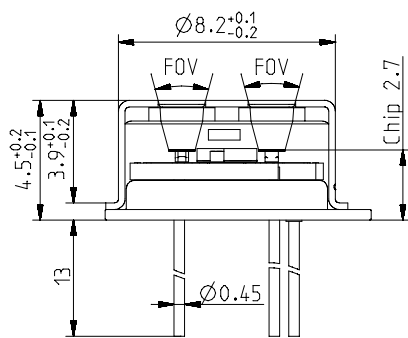
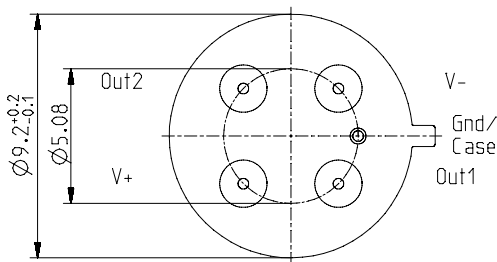
### Description:

dual channel; TO39 housing; small chip size; OpAmp; current mode; feedback 24GOhm;



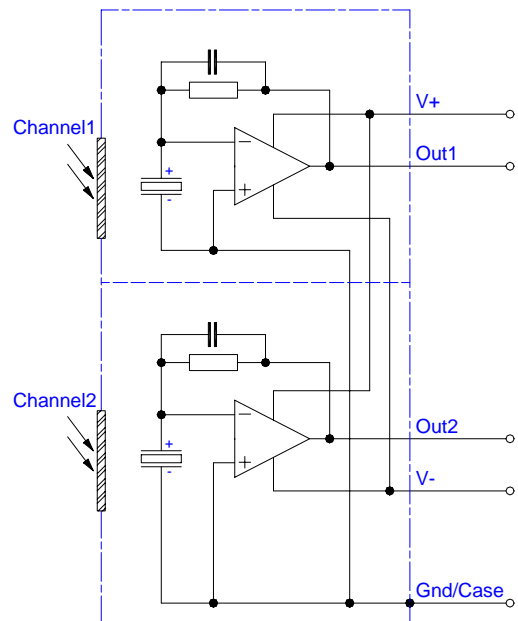
### HOUSING:

TO39 4+1Pin  
Bottom view

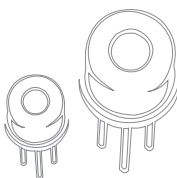
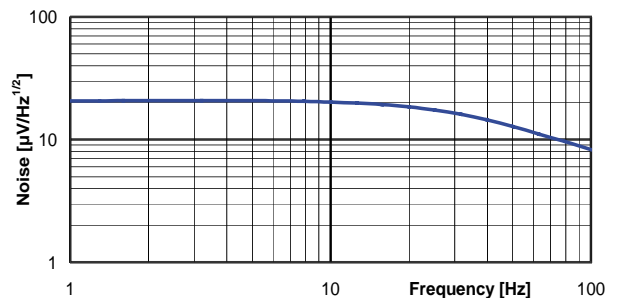
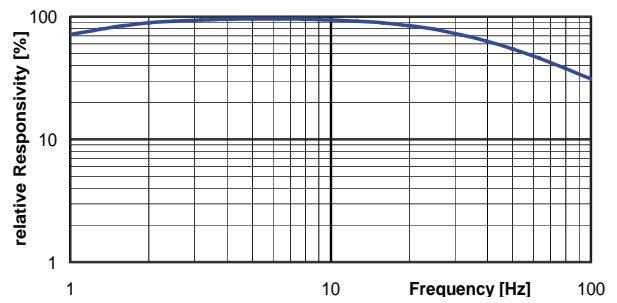


Top view

### PIN ASSIGNMENT:



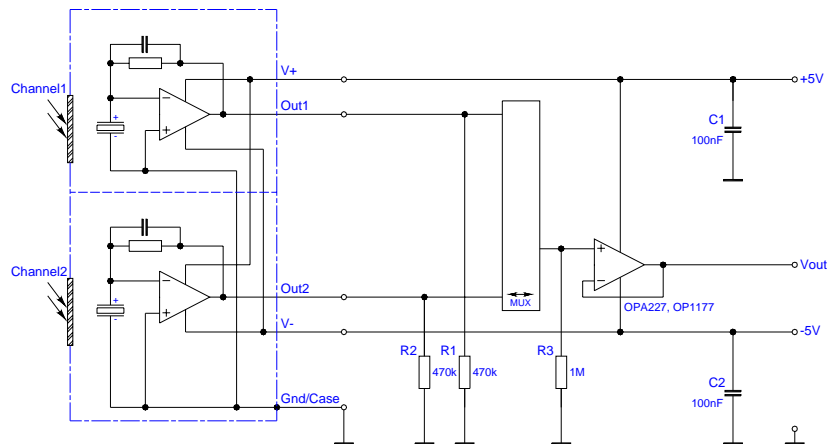
### FREQUENCY RESPONSE:



## LIM-162-#

## pyroelectric multispectral detector

### TEST CIRCUIT:



### PARAMETERS:

|  |     |   |
|--|-----|---|
| Aperture size  | nom | ø6.0 mm, single channel 2.7x1.8 mm <sup>2</sup>   |
| Element size / type  | nom | 1.0x1.8 mm <sup>2</sup> lithium-tantalate with black layer  |
| Thermal time constant  | typ | 150 ms  |
| Feedback resistor  | nom | 24 GOhm ±10%  |
| Feedback capacitor   | nom | 0.2 pF ±0.1 pF  |
| Polarity   | nom | negative signal by positive IR flux change  |
| Voltage responsivity (rms)<br>{500K, 10 Hz, 25 °C, without window} | min | 32000 V/W   |
| Noise density (rms)<br>{10 Hz, BW 1 Hz, 25 °C}                     | max | 24 μV/(sqrt[Hz])  |
| Detectivity<br>{500K, 10 Hz, 1 Hz, 25 °C, without window}          | min | 1.8E+08 cm(sqrt[Hz])/W  |
| CMOS operational amplifier   | nom | OpAmp2 (for characteristics see application note)   |
| 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 | 150 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  |     | Combinations of all InfraTec standard narrow band pass filters are available.<br>Customized filters upon request.   |
| Filter sizes   | nom | rectangular filters: (3.50 ±0.1 x 2.50 ±0.1)mm<br>circular filters: not applicable<br>standard thickness: 0.50 mm +0.2/-0.1 mm<br>thickness range 0.70 ... 1.10 mm on request |
| Field of View  | min | CaF <sub>2</sub> or BaF <sub>2</sub> ; 0.4 mm thick: not applicable<br>Silicon substrate; 0.5 mm thick: 30°   |