

## LIE-382-#

## Special single channel pyroelectric detector

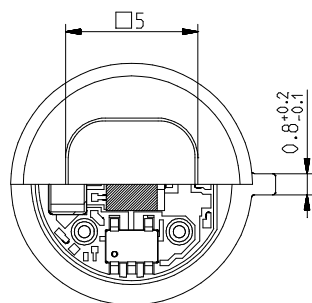
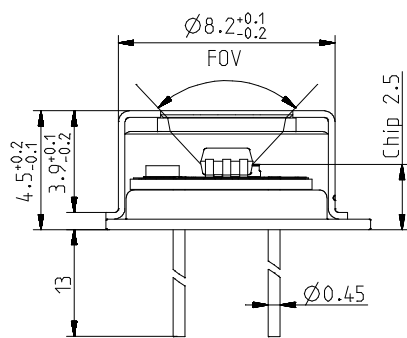
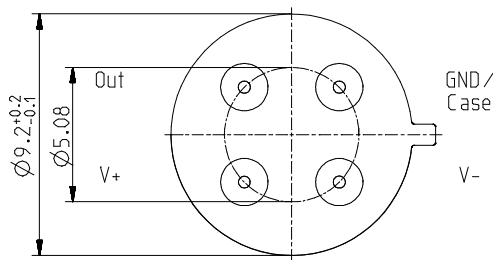
### Description:

single channel; TO39 housing; medium chip size;  
OpAmp; current mode; feedback 11 MOhm;  
advanced transimpedance amplifier (TIA) for 1 Hz to 5 kHz modulation frequency range;  
frequency response flat from 1 Hz up to 3 kHz



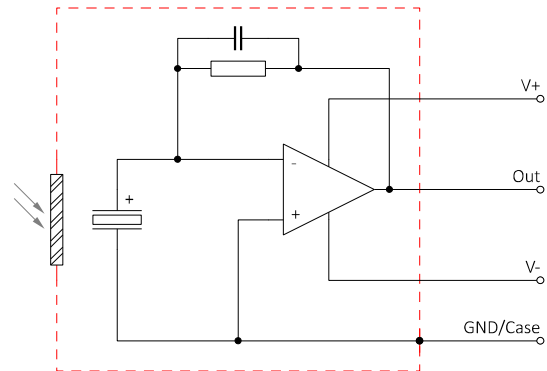
### Housing:

TO39 4Pin  
Bottom view



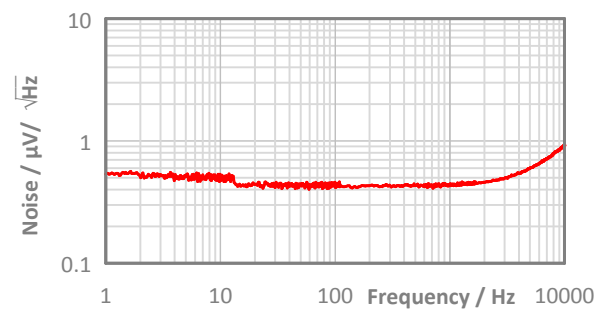
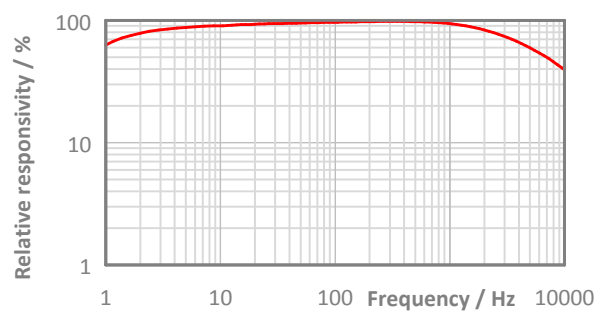
Top view

### Pin Assignment:



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

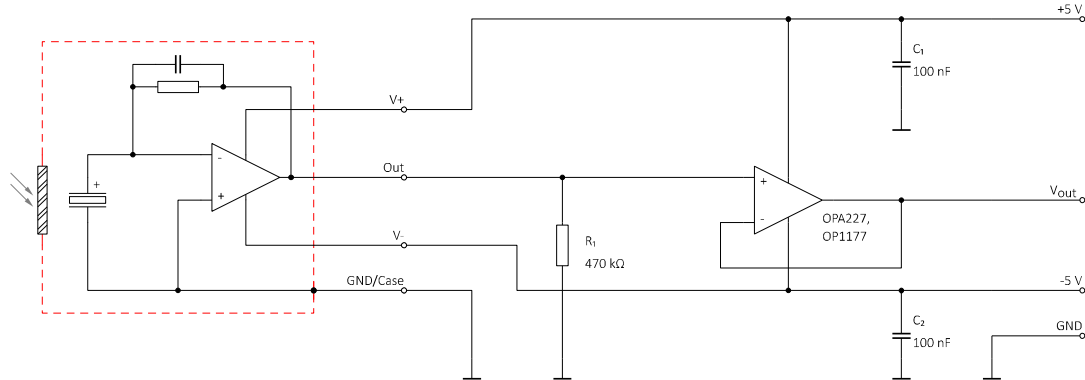
### Frequency Response:



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### Test Circuit:



### Parameters:

Aperture size	nom	□ 5.0 mm
Element size / type	nom	2.0 × 2.0 mm <sup>2</sup> lithium-tantalate with black layer
Thermal time constant	typ	150 ms
Feedback resistor	nom	11 MΩ ±5 %
Polarity	nom	Negative signal by positive IR flux change
Voltage responsivity (rms) {500 K, 10 Hz, 25 °C, without filter/window}	min	15 V/W
Noise density (rms) {10 Hz, BW 1 Hz, 25 °C}	max	550 nV/√Hz
Detectivity {500 K, 10 Hz, 1 Hz, 25 °C, without filter/window}	typ	8.0E+06 cmVHz/W
operational amplifier	nom	AD8627
Supply voltage V+ - V-	max	26 V
Operating supply voltage V+ / V-		+2.5 ... +13 V / -2.5 ... -13 V
Recommended supply voltage V+ / V-	nom	V+ = +6 V; V- = -6 V
Supply current {output load 1 MΩ}	max	900 μA
Offset voltage {25 °C; output load 1 MΩ}		-3 mV ... +3 mV
Optimal output load	nom	470 kΩ
Absolute output current	max	±10 mA
Operating / Storage temperature	nom	-25 ... +85 °C
IR window		All InfraTec windows and filters are available (except KBr and CsI). Customized filters upon request.
Filter sizes	nom	Rectangular filters: (5.25 × 5.25) mm +0/-0.05 mm Circular filters: ø6.5 mm ±0.1 mm Standard thickness: 0.50 mm +0.2/-0.1 mm Thickness range 0.70 ... 1.10 mm on request
Field of View	min	CaF2 or BaF2; 0.4 mm thick: 75° Silicon substrate; 0.5 mm thick: 85°

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