

# LIE-382-#

## fast pyroelectric detector

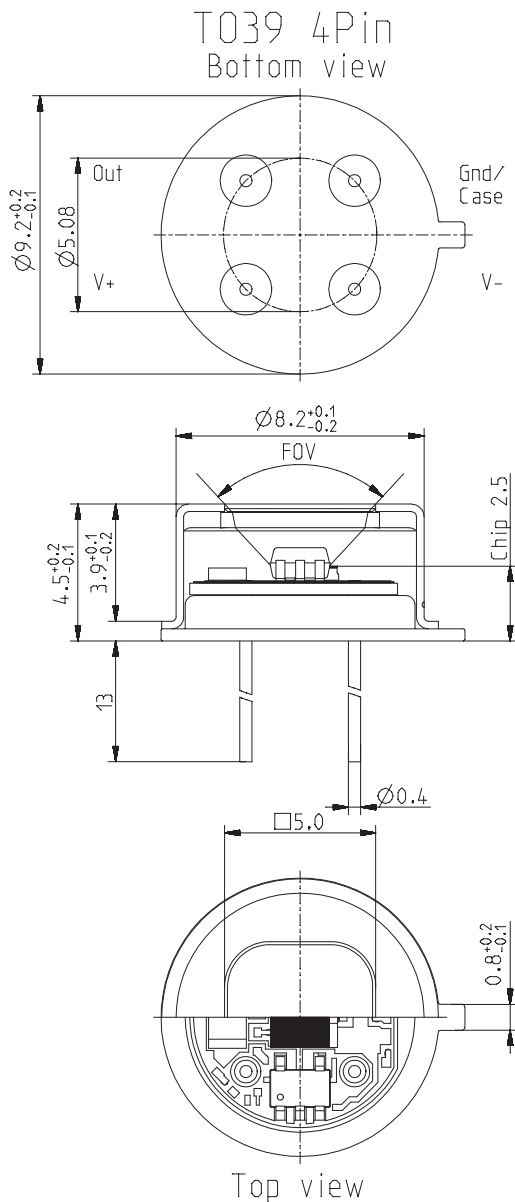
### Description:

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  
time response flat from 1 Hz up to 3 kHz

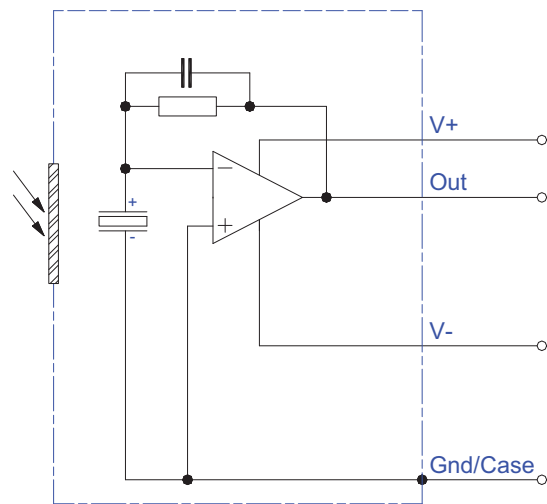


### HOUSING:

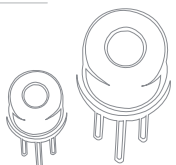
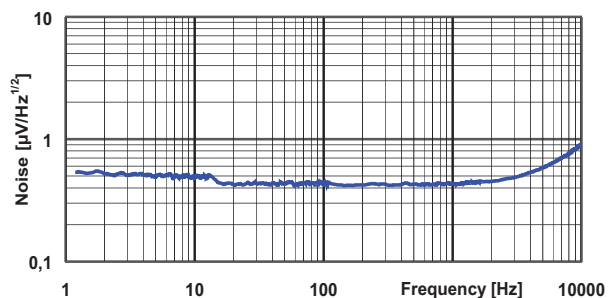
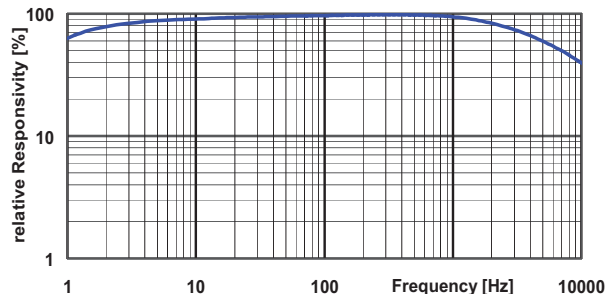
### PIN ASSIGNMENT:



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



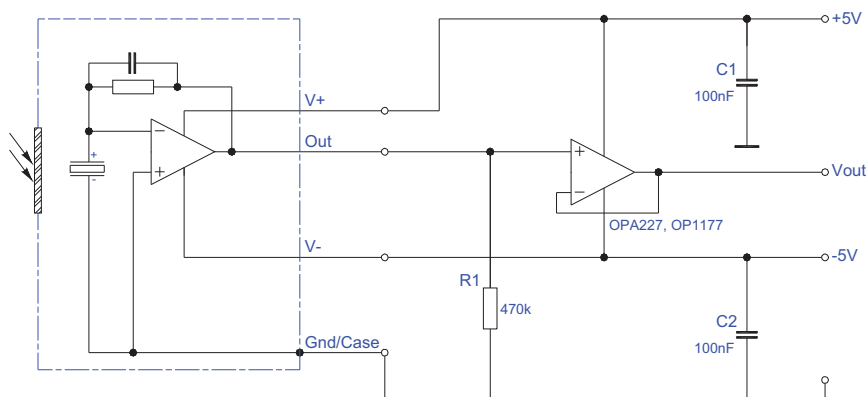
### FREQUENCY RESPONSE:



## LIE-382-#

## fast pyroelectric detector

## TEST CIRCUIT:



## PARAMETERS:

Aperture size	nom	5.0 mm sq.
Element size / type	nom	2.0x2.0 mm <sup>2</sup> lithium-tantalate with black layer
Thermal time constant	typ	150 ms
Feedback resistor	nom	11 MOhm ±5%
Polarity	nom	negative signal by positive IR flux change
Voltage responsivity (rms) {500K, 10 Hz, 25 °C, without window}	min	17 V/W
Noise density (rms) {10 Hz, BW 1 Hz, 25 °C}	max	500 nV/(sqrt[Hz])
Detectivity {500K, 10 Hz, 1 Hz, 25 °C, without window}	min	6.8E+06 cm(sqrt[Hz])/W
JFET 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 1MOhm}	max	900 µA
Offset voltage {25 °C; output load 1MOhm}		-3 mV ... +3 mV
Optimal output load	nom	33 kOhm
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 x 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: 76° Silicon substrate; 0.5 mm thick: 83°