

## LIE-312-#

## high performance pyroelectric detector

### Description:

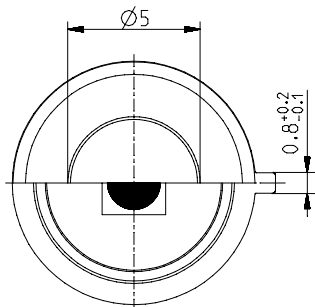
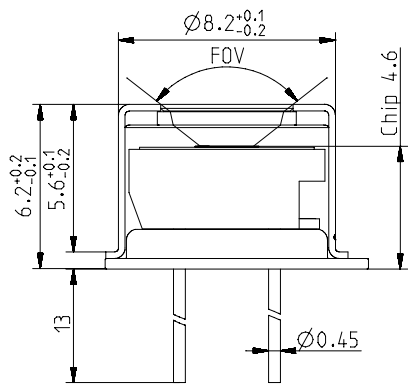
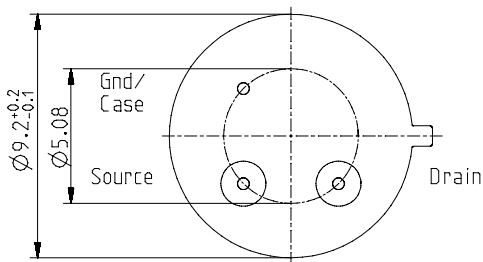
single channel; TO39 housing; medium chip size; JFET; voltage mode; long time constant, metal black coating



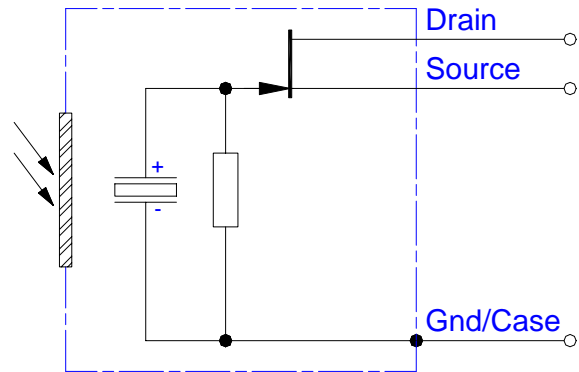
### HOUSING:

### PIN ASSIGNMENT:

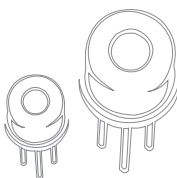
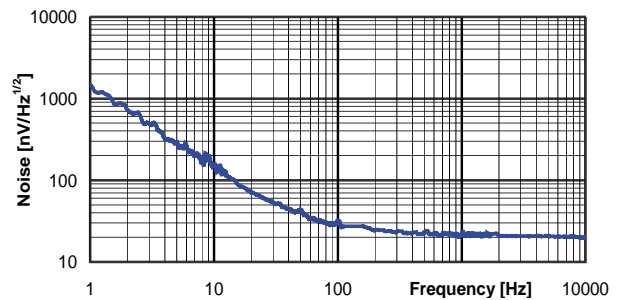
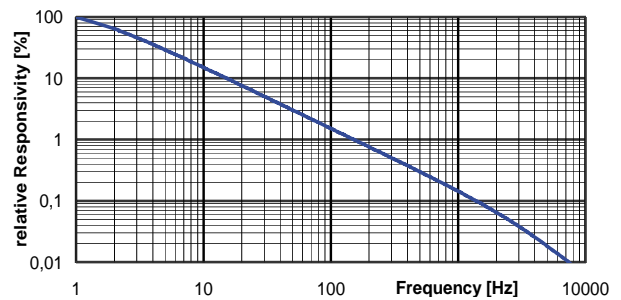
TO39 3Pin  
Bottom view



Top view



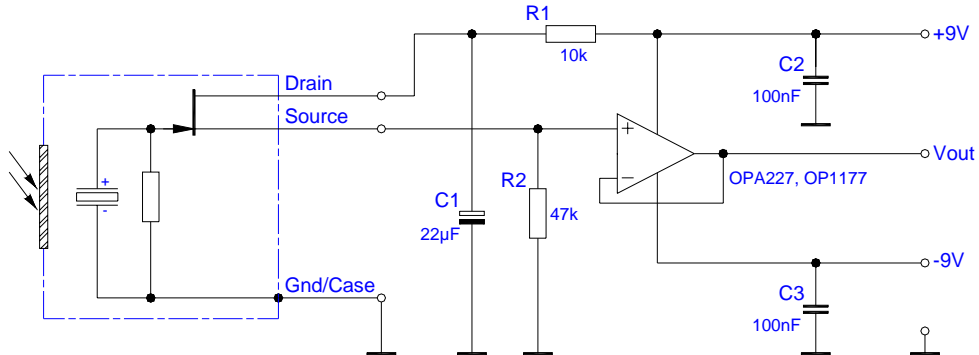
### FREQUENCY RESPONSE:



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### TEST CIRCUIT:



### PARAMETERS:

Aperture size	nom	ø5.0 mm
Element size / type	nom	ø2.0 mm lithium-tantalate with metal black layer
Thermal time constant	typ	200 ms
Electrical time constant	typ	5 s
Polarity	nom	positive signal by positive IR flux change
Voltage responsivity (rms) {500K, 10 Hz, 25 °C, without window}	min	500 V/W
Voltage responsivity (rms) {500K, 100 Hz, 25 °C, without window}	min	50 V/W
Noise density (rms) {10 Hz, BW 1 Hz, 25 °C}	max	180 nV/(sqrt[Hz])
Noise density (rms) {100 Hz, BW 1 Hz, 25 °C}	max	35 nV/(sqrt[Hz])
Detectivity {500K, 10 Hz, 1 Hz, 25 °C, without window}	min	4.9E+08 cm(sqrt[Hz])/W
Detectivity {500K, 100 Hz, 1 Hz, 25 °C, without window}	min	2.5E+08 cm(sqrt[Hz])/W
Detectivity {500K, 1 kHz, 1 Hz, 25 °C, without window}	min	1.0E+08 cm(sqrt[Hz])/W
Offset voltage {opt. Drain current = 10 ... 100µA}	nom	0.4 ... 1.5 V
Drain source voltage	max	18 V
Operating / Storage temperature	nom	-25 ... +60°C
IR window		All InfraTec standard crystal windows (BaF2, CaF2, CsI, KBr, Sapphire) are available. 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 max thickness: 0.85 mm
Field of View	min	CaF2 or BaF2; 0.4 mm thick: 90°