

LIE-235-#

Single channel pyroelectric detector

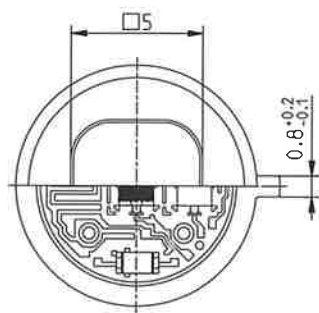
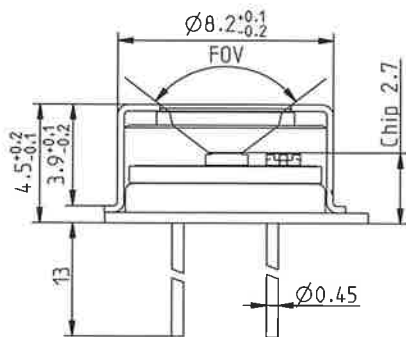
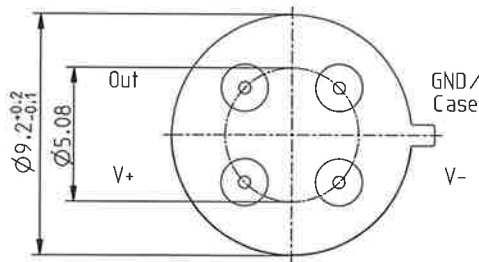
Description:

single channel; TO39 housing; small chip size; thermal compensation;
OpAmp; current mode; feedback 100 GΩ;



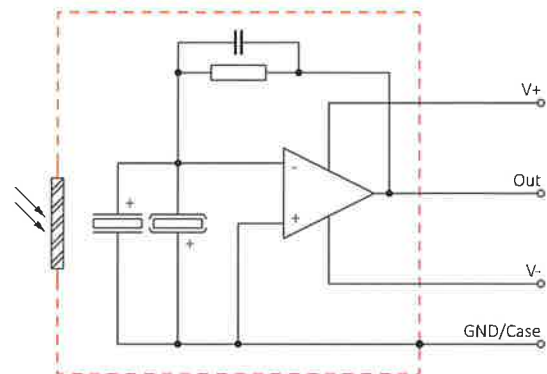
Housing:

TO39 4Pin
Bottom view



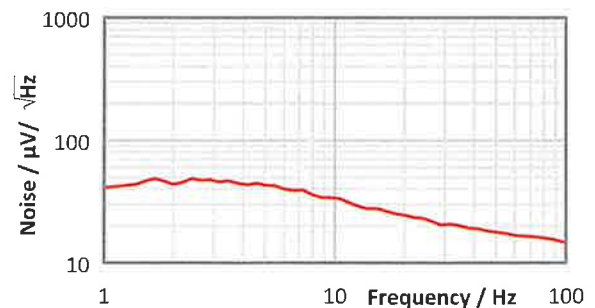
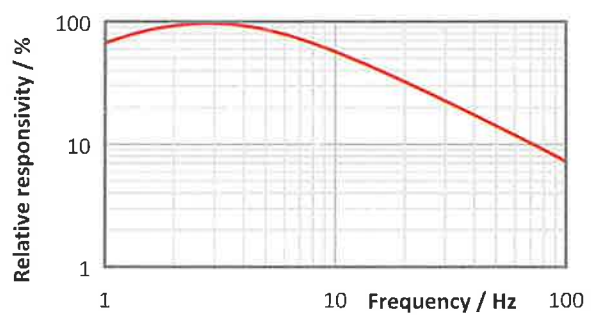
Top view

Pin Assignment:



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

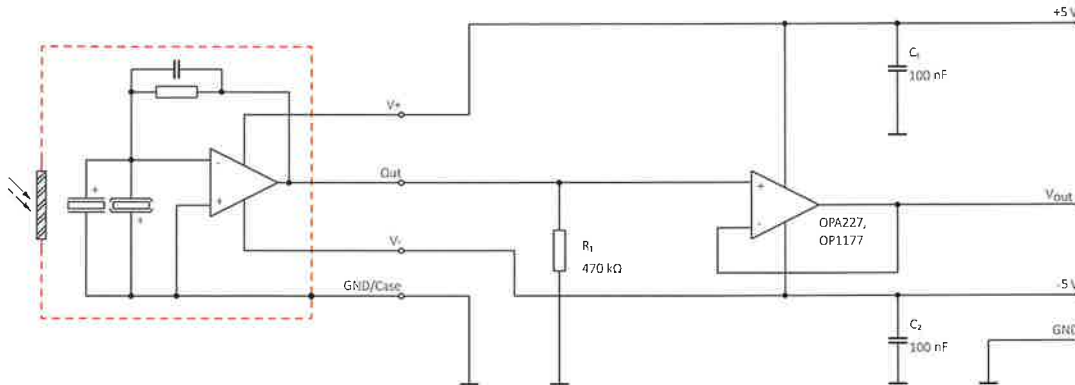
Frequency Response:



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Test Circuit:



Parameters:

| | | |
|--|-----|---|
| Aperture size | nom | □ 5.0 mm |
| Element size / type | nom | 1.3 × 1.3 mm ² lithium-tantalate with black layer |
| Thermal time constant | typ | 150 ms |
| Feedback resistor | nom | 100 GΩ ±20 % |
| 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 | 65,000 V/W |
| Noise density (rms) {10 Hz, BW 1 Hz, 25 °C} | max | 45 μV/√Hz |
| Detectivity {500 K, 10 Hz, 1 Hz, 25 °C, without filter/window} | typ | 2.7E+08 cmVHz/W |
| CMOS operational amplifier | nom | OpAmp3 |
| Supply voltage V+ - V- | max | 10 V |
| Operating supply voltage V+ / V- | | ±1.35 ... ±5 V |
| Recommended supply voltage V+ / V- | nom | V+ = +5 V; V- = -5 V |
| Supply current {output load 1 MΩ} | max | 30 μA |
| Offset voltage {25 °C; output load 1 MΩ} | | -5 mV ... +5 mV |
| Optimal output load | nom | 100 kΩ |
| Absolute output current | max | ±0.2 mA |
| Operating / Storage temperature | nom | -40 ... +85 °C |
| IR filter | | 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: 95° Silicon substrate; 0.5 mm thick: 105° |

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