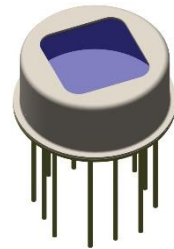


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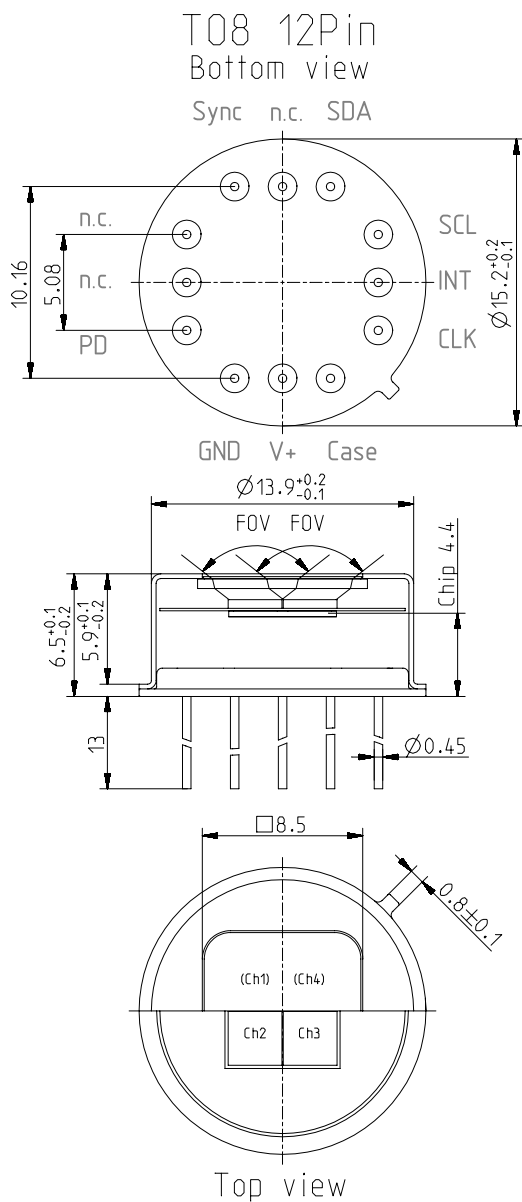
PyriQ® digital pyroelectric detector

Description:

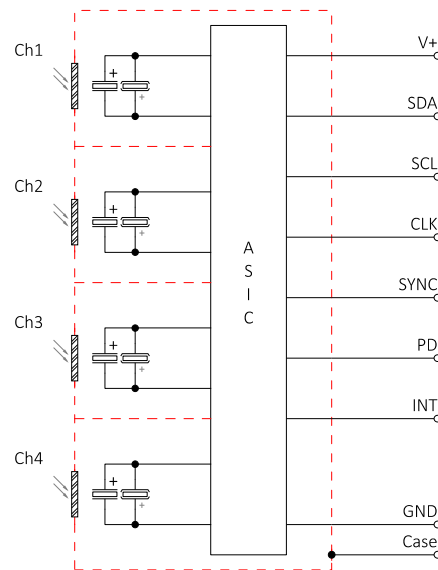
quad channel; TO8 housing; medium chip size; thermal compensation; I²C digital output; current mode; integrated temperature sensor;



Housing:

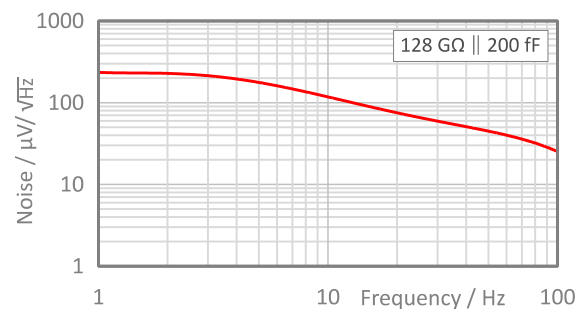
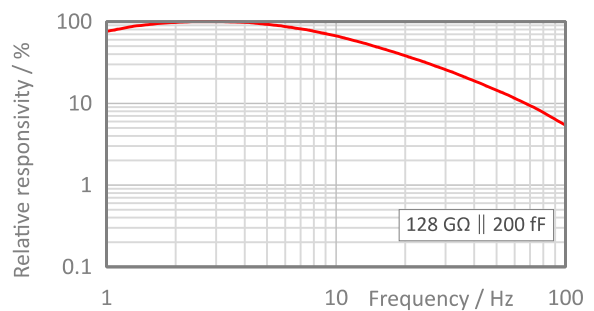


Pin Assignment:



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

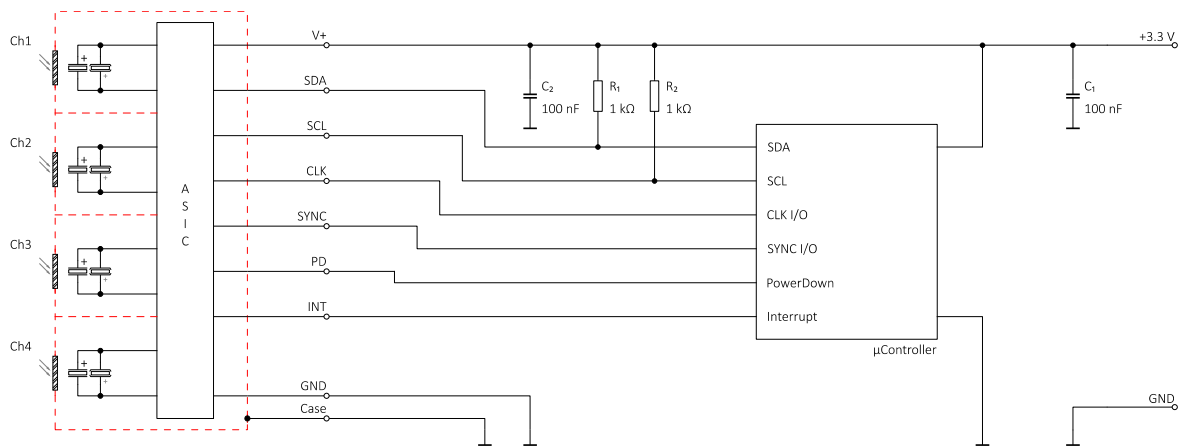
Frequency Response:



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PyriQ® digital pyroelectric detector

Test Circuit:



Parameters:

Aperture size	nom	□ 8.5 mm
Element size / type	nom	2.0 × 2.0 mm ² lithium-tantalate with black layer
Thermal time constant	typ	150 ms
Feedback resistor	nom	2...1,024 GΩ (10 Steps)
Feedback capacitor	nom	50...6,400 fF (8 Steps)
Polarity	nom	Negative signal by positive IR flux change
Voltage responsivity (rms) {128 GΩ 200 fF; 500 K, 10 Hz, 25 °C, without filter/window}	typ	155,000 V/W
Noise density (rms) {128 GΩ 200 fF, 10 Hz, BW 1 Hz, 25 °C}	typ	130 μV/√Hz
Detectivity {128 GΩ 200 fF; 500 K, 10 Hz, BW 1 Hz, 25 °C, without filter/window}	typ	2.4E+08 cmVHz/W
ADC resolution	nom	16 bit
ADC step size	nom	29.42 μV/count
Analog channel gain		0...22.5 dB
Analog HP filter programmable cuton frequency		0.5...4 Hz
Digital LP filter programmable cutoff frequency		12.5...100 Hz
Operating supply voltage V+	nom	+1.8 ... 3.6 V
Supply current {25 °C, 1kHz & 4 channels active}	max	250 μA
Temperature sensor resolution	nom	0.0121 K/count
I ² C Communication Rate	max	FM+ (1 MHz)
Potential of detector case	nom	Selectable potential between -8 ... +8 V to Ground {EMC requires low-impedance coupling}
Operating / Storage temperature	nom	-25 ... +85 °C
IR filter		Combinations of all InfraTec standard narrow band pass filters are available. Customized filters upon request.
Filter sizes	nom	Rectangular filters: (2.85 × 2.85) mm ±0.1 mm Standard thickness: 0.50 mm +0.2/-0.1 mm Thickness range 0.70 ... 1.10 mm on request
Aperture window		Selected by InfraTec for best channel filter matching
Aperture window sizes	nom	Rectangular filters: (9.00 × 9.00) mm ±0.05 mm Standard thickness: 0.50 mm ±0.1 mm
Field of View	min	105° (with filter: silicon substrate; 0.5 mm thick and aperture: Si ARC; 0.5 mm thick)

This preliminary datasheet contains information regarding a product InfraTec is considering for production release. Due to this state all data are for information only.

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