



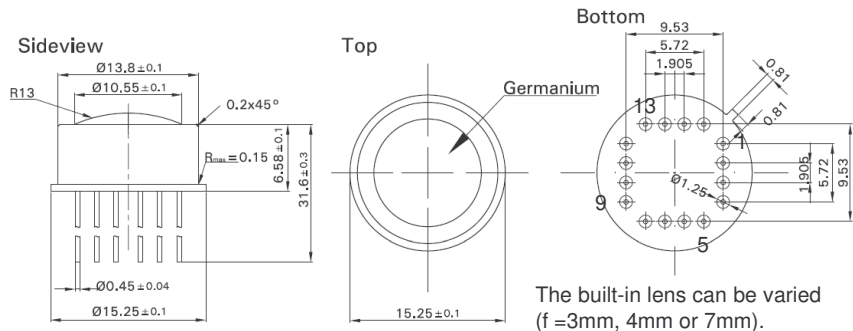
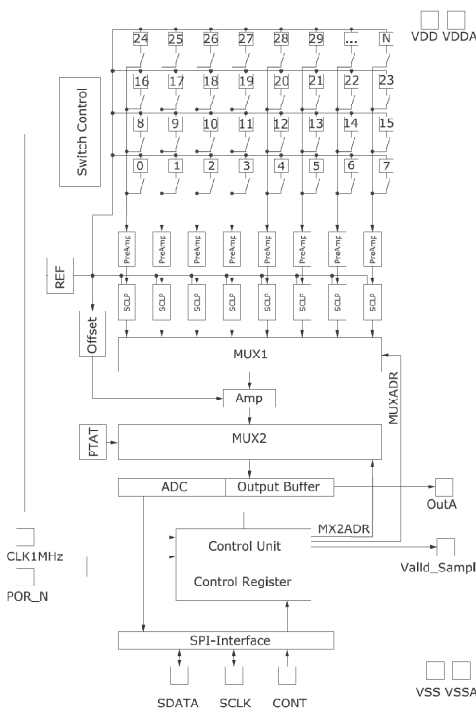
# HTPA

## Thermopile Array with Ge-Lense f = 4mm

Heimann offers a world new fully monolithic thermopile sensor array. This allows the measurement of temperature distribution of the environment, where very high resolutions are not necessary, such as person detection, surveillance of temperature critical surfaces, hotspot or fire detection, energy management and security applications. Other applications can be found in industrial process control and air condition control.

The benefits of this technology are low costs, the very small power consumption, small size, as well as the high sensitivity of the system. They fit in a TO8 housing, which provides small dimensions and a reliable mechanical assembly.

### Principal Schematic:



Pin	Name	Description	Type
1	VSS	Negative power supply voltage	Power
2	CONT	Control Pin for SPI	Digital Input
3	OUT A	Analog Output	Analog Output
4	VCM C	Common mode voltage	Reference Voltage
5	VCM OUT	Common mode voltage	Reference Voltage
6	VREF N	Negative reference voltage for ADC	Reference Voltage
7	VREF P	Positive reference voltage for ADC	Reference Voltage
8	VREF 1225V	1.225V reference voltage	Reference Voltage
9	AGND	Analog ground for ADC	Reference Voltage
10	VDDA	Positive power supply voltage	Power
11	VDD	Positive power supply voltage	Power
12	POR N	Power on reset, negated	Digital Input
13	CLK 1MHZ	Master clock	Digital Input
14	VSAM	Valid sample	Digital Output
15	SCLK IO	Clock input/output for SPI	Digital Input/Output
16	DATA IO	Data input/output for SPI	Digital Input/Output

Parameter	Comment	HTPA 8x8	HTPA 16x16	Unit
Technology		n-poly/p-poly Si		
Element resistance		approx. 80		kOhm
Sensitivity	without optics and filter	n/a	approx. 45	V/W
NETD	@ 1Hz	n/a	0.2	K
Total noise		n/a	50	nV/Hz <sup>1/2</sup>
Thermal pixel time constant		<4		ms
Internal ADC		12		bit
Digital interface		SPI		
Analog output		Yes		
2 point selectable gains		2640x / 7920 x		
Pitch		300	220	µm
Absorber size		210x210	160x160	µm <sup>2</sup>
Max. framerate	without averaging	66.8	18.6	Hz
Supply voltage		5		V
		4 internal amps + MUX	8 internal amps + MUX	
		64 sensitive elements	256 sensitive elements	

Modifications reserved Rev.01 / 25.04.2008