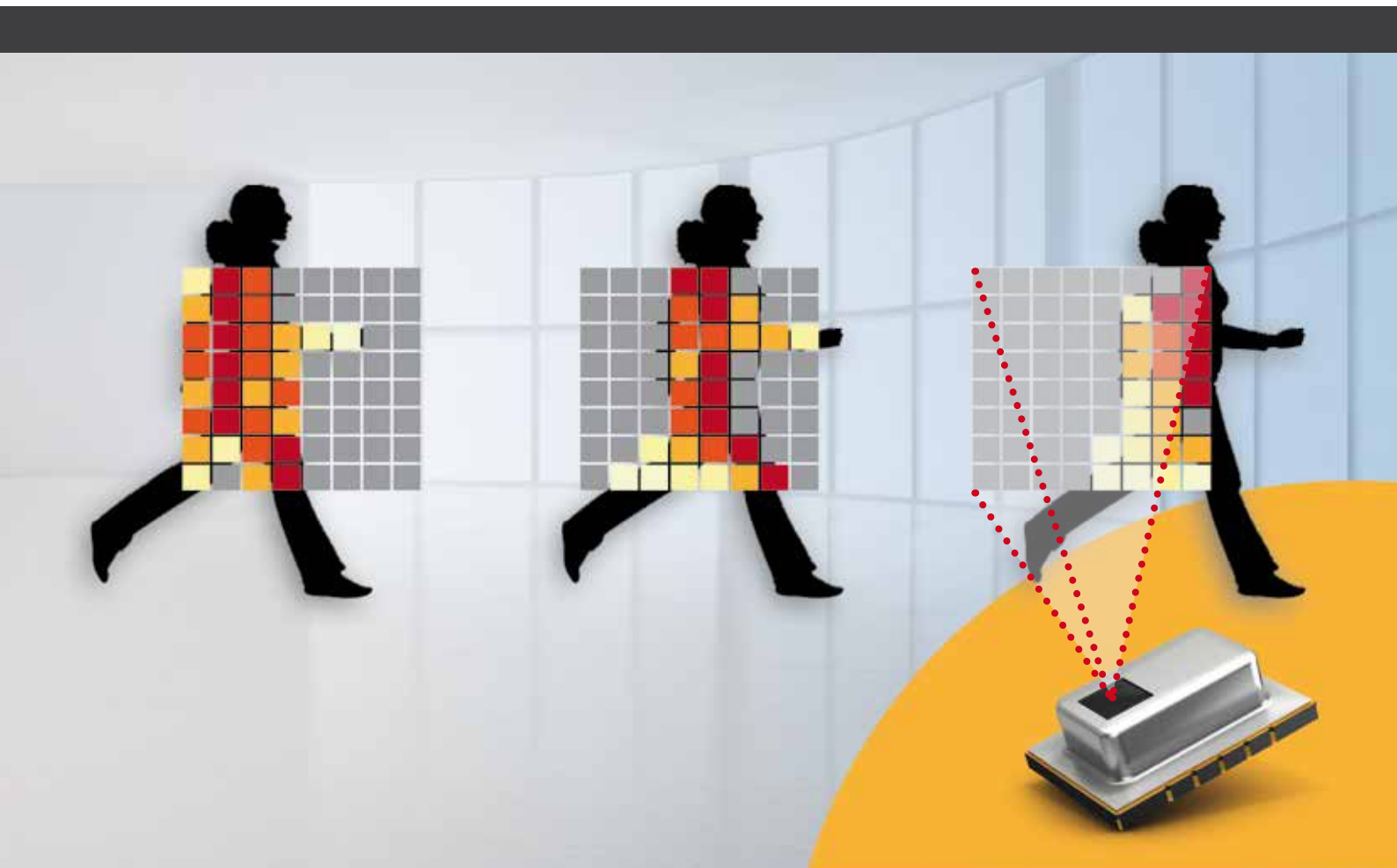


**Panasonic**

# INFRARED ARRAY SENSOR GRID-EYE



# Grid-EYE

## Infrared Array Sensor



**Panasonic presents the first-ever surface mount thermopile array sensor.**

Grid-EYE features 64 thermopile elements in an 8x8 grid format that detect absolute temperatures by infrared radiation. Grid-EYE is able to measure actual temperature and temperature gradients, providing thermal images. It is easily possible to detect multiple persons, identify positions and direction of movement, almost independent of ambient light conditions without disturbing privacy as with conventional cameras.

Cost-effective and compact solutions for contactless temperature measurement across the entire specified area can be and with very accurate results. The built-in silicon lens provides a viewing angle of 60°.


The measurement values can be read out via I<sup>2</sup>C interface in 1 or 10 frames per second. The interrupt signal output delivers a quick response to time-critical events, offering a high degree of flexibility.

Compared to single element thermopile sensors and pyro-electric detectors, Grid-EYE sensors offers extended possibilities for detecting persons and objects, enabling advanced Applications.

- > Digital output (I<sup>2</sup>C)
- > Interrupt signal output
- > SMD component (reflow compatibility)
- > 8x8 (64) pixel area
- > Frame rate: 10 frames/s or 1 frame/s



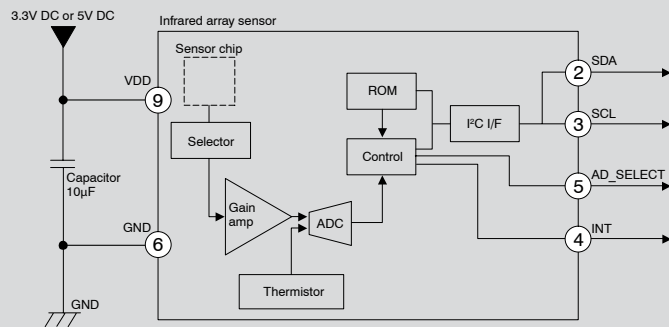
Type \ Detection	Moving Object	Motionless Object	Moving Direction	Temperature Measuring	Thermal image
<b>Pyroelectric</b>	✓	✗	✗	✗	✗
<b>Thermopile</b> (single element)	✓	✓	✗	✓	✗
	↓	↓	↓	↓	↓
<b>Grid-EYE</b>	✓	✓	✓	✓	✓

Product name	Number of Pixels	Operating Voltage	Amplification Factor	Model No.
<b>Infrared array sensor Grid-EYE</b> 	64 (vertical and horizontal 8 x 8 matrix)	3.3V DC	High gain	AMG8831
			Low gain	AMG8832
		5.0V DC	High gain	AMG8851
			Low gain	AMG8852

## Features

- > Dimensions: 11.6 x 4.3 x 8.0mm (L x H x W)
- > Operating voltage: 3.3V or 5.0V (depends on P/N)
- > Current consumption: Typ. 4.5mA (normal mode); 0.8mA (stand-by mode), 0.2mA (sleep mode)
- > Temperature range of measuring object: With amplification factor high gain: 0°C to 80°C, with low gain: -20°C to 100°C
- > Field of view: 60° (vertical and horizontal)
- > Number of pixels: 64 (vertical 8 x horizontal 8)
- > External interface: I<sup>2</sup>C (fast mode)
- > Frame rate: 1 or 10 frames/s
- > Typical absolute temperature accuracy: Typ. ±2.5°C (depends on P/N)

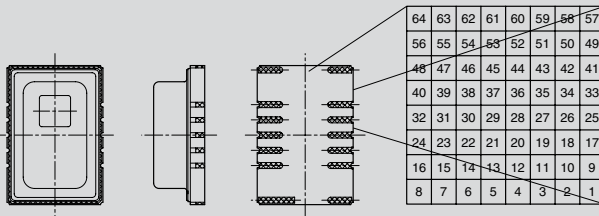
# Block Diagram



INT terminal ④ normally has the same voltage as VDD. When interrupting, the voltage is the same as GND (0V).

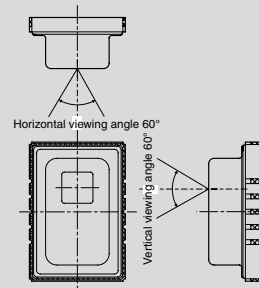
## 1. Pixel array

Pixel array from 1 to 64 is shown below.



## 2. Viewing field

Sensor viewing field (typical) is shown below.



Grid-EYE opens the door to a whole world of new applications, ranging from energy savings in the lighting industry (commercial and public places as well as residential spaces) to household

applications (air conditioners, microwave ovens, etc.), from security systems (automatic doors, elevators, ATMs and kiosks, etc.) to the medical industry (patient detection and positioning) and many more.

# Applications



### Safety

- > Occupancy detection
- > People counting, multiple person detection



### Household

- > Cooking stoves
- > Microwave stoves
- > Air conditioners
- > Heating systems



### Medical systems

- > Patient detection
- > Movement detection
- > Thermal imaging
- > Position detection



### Lighting control

- > Energy savings
- > Detection without movement



### Industrial temperature measurement

- > Industrial process management and control
- > Contact-less temperature measurement

Interested in an evaluation board?  
Please refer to your local contact person



Have a look at the Grid-EYE film!



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