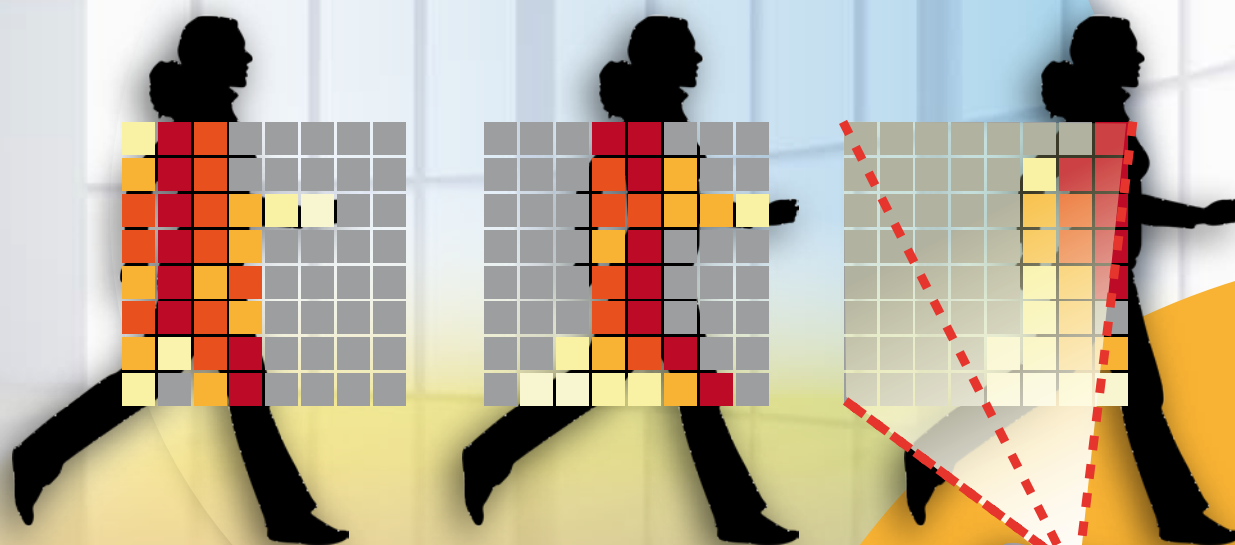


Panasonic
ideas for life

INFRARED ARRAY SENSORS
GRID-EYE



www.built-in-sensors.com

Grid-EYE

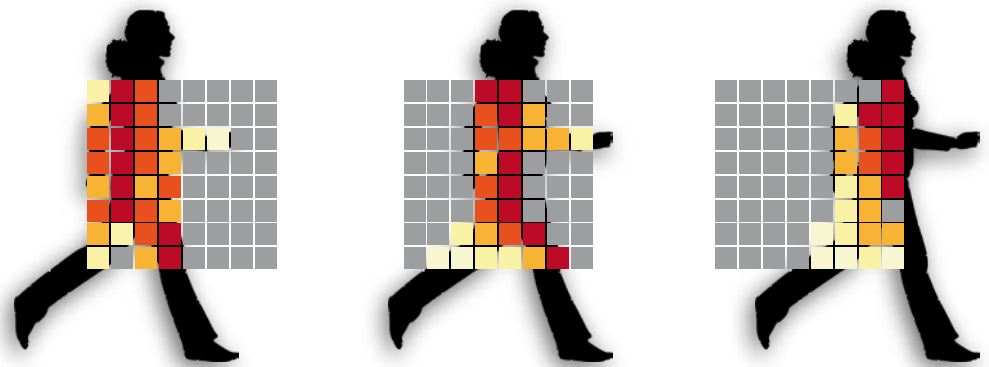
Infrared Array Sensor



Grid-EYE is a thermopile array sensor that features 64 thermopile elements in an 8x8 grid format. Contrary to conventional thermal sensors that only measure temperature of a certain point-of-contact, Grid-EYE, based on Panasonic's MEMS technology, can measure temperature of the entire specified area without any contact; in other words, it is a "contactless thermopile array sensor". 64 pixels yield accurate temperature measurement over a viewing angle of 60° provided by a silicon lens. Grid-EYE uses an I²C communication interface, enabling temperature measurements at speeds of 1 or 10 frames/sec. An interrupt function is also available.

- Digital output (I²C)
- SMD package (reflow compatible)
- 8x8 (64) pixel range
- Frame rate: 10 frames/s or 1 frame/s

With an array of detection elements Grid-EYE can use passive infrared detection to determine temperature differentiation allowing it to detect multiple objects simultaneously. Grid-EYE is able to measure actual temperature and temperature gradients, providing thermal images and identifying direction of movement. Compared to single thermopile sensors or pyroelectric sensors, Grid-EYE offers immense benefits.

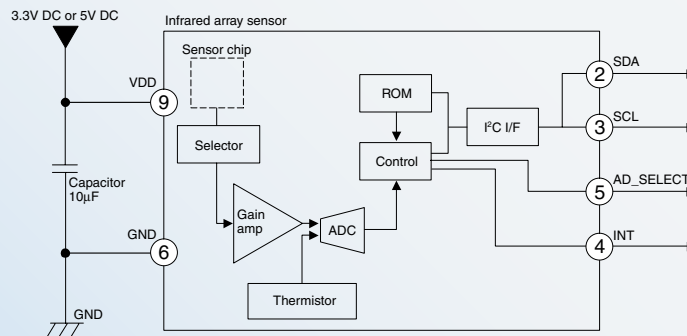


Type \ Detection	Moving object	Motionless object	Moving direction	Temperature measuring	Thermal image
Pyroelectric	✓	✗	✗	✗	✗
Thermopile (Single element)	✓	✗	✗	✓	✗
	↓	↓	↓	↓	↓
Grid-EYE	✓	✓	✓	✓	✓

PRODUCT 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)
Power voltage	4.5mA
Temperature range of measuring object	-20°C to 100°C (depends on P/N)
Field of view (FoV)	60°
Number of pixels	64 (vertical 8 x horizontal 8)
External interface	I ² C (fast mode)
Frame rate	1 or 10 frames/s
Absolute temperature accuracy	±2.5°C

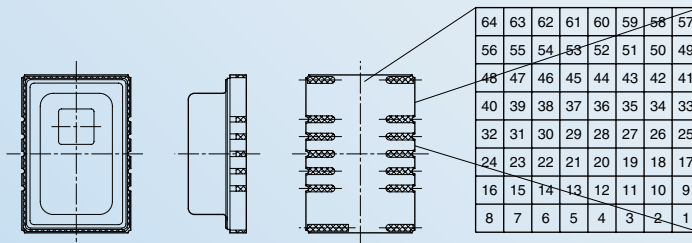
INTERNAL CIRCUIT



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

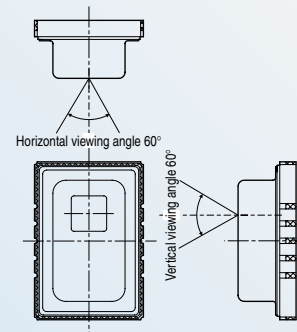
1. Pixel array

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 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, kiosks, etc.) to the medical industry (patient detection and positioning), and many more.

APPLICATIONS



Security

- Occupancy detection
- People counting, multiple person detection



Household

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



Medical

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



Lighting control

- Energy savings
- Detection without movement



Industrial temperature measurement

- Industrial process management and control
- Preserving maintenance
- Contact-less temperature measurement

For more information, please visit www.built-in-sensors.com

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