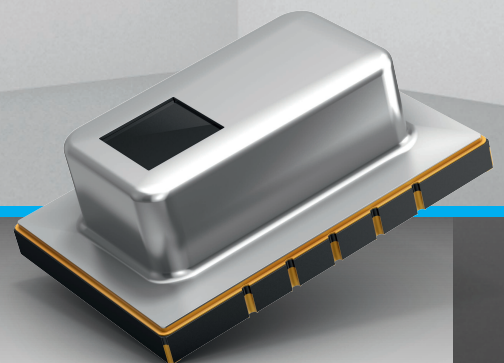


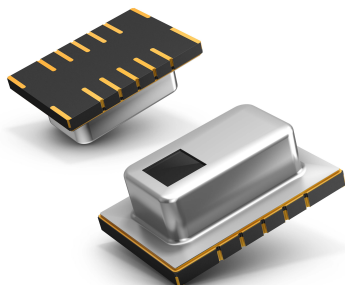
1ST SMD THERMOPILE ARRAY SENSOR

GRID-EYE 2ND GENERATION



GRID-EYE 2ND GENERATION

INFRARED ARRAY SENSOR



Panasonic presents the 2nd generation of the first-ever surface-mount innovative thermopile array sensor

Grid-EYE is an infrared array sensor and the first ever 64 pixel IR camera in an all-in-one compact SMD package. Based on Panasonic MEMS technology, Grid-EYE combines the MEMS sensor chip, a digital ASIC (I²C interface) and a silicon lens. The 64 thermopile elements are in an 8x8 grid format that detect actual temperature and temperature gradients without any contact. These temperature outputs can then provide thermal images as a result. Grid-EYE sensor uses a patented 60° silicon lens, with less than 0.3mm height, the smallest available on the market. The combination of these technologies from Panasonic enables to reduce the sensor package size to only 11.6mm x 8mm x 4.3mm, which is around 70% smaller in size than competitor products.

The new high gain types (AMG8833 and AMG8853) and low gain types (AMG8834 and AMG8854) of Grid-EYE 2nd Generation now benefit from an

improved NETD (Noise Equivalent Temperature Difference) of 0.16°C at 10Hz and of 0.05°C at 1 Hz. For all Grid-EYE 2nd Generation models the detection distance has improved from 5m up to 7m. It is important to note that the second generation of Grid-EYE sensors is fully compatible with the existing first generation designs. This means that the engineers can now get improved and accurate results when they use the sensor in their applications.

Grid-EYE sensor measurements can be output at two configurable rates; at 1 frame/second or at 10 frames/second via a digital I²C interface. Another interesting feature of the sensor is the interrupt-signal-output which delivers a quick response to time-critical events, in turn offering a high degree of flexibility for customer applications.

Compared to single element thermopile sensors and pyro-electric detectors, Grid-EYE offers extended possibilities for detecting persons and objects even when stationary, thus enabling various advanced solutions.

GRID-EYE 2ND GENERATION – INFRARED ARRAY SENSOR

Series / Type	Number of pixels	Operating voltage	P/N	Part. No.
Infrared Array Sensor Grid-EYE	64 (vertical 8 x horizontal 8)	3.3VDC	High gain	AMG8833
			Low gain	AMG8834
		5.0VDC	High gain	AMG8853
			Low gain	AMG8854

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

PRODUCT SPECIFICATIONS

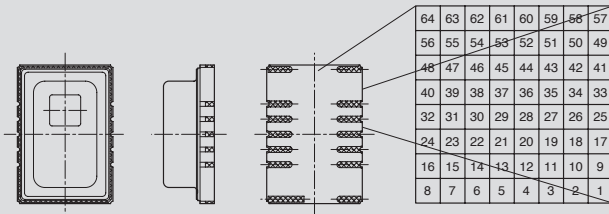
Specifications	Parameters
Dimensions (L x H x W):	11.6 x 4.3 x 8.0mm
Operating voltage:	3.3V or 5.0V (depends on P/N)
Current consumption:	Typ. 4.5mA (normal mode); 0.8mA (stand-by mode), 0.2mA (sleep mode)
Temperature range of measuring objects: with amplification factor high gain: with amplification factor low gain:	0°C to 80°C, -20°C to 100°C

Specifications	Parameters
Field of view:	60° (vertical and horizontal)
Number of pixels:	64 (vertical 8 x horizontal 8)
External interface:	I ² C (fast mode)
Frame rate:	1 or 10 frames/s
Typical absolute temperature accuracy:	Typ. ±2.5°C (depends on P/N)

PIXEL AND FOV ORIENTATION

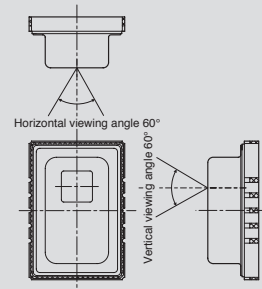
1. Pixel array

Pixel array from 1 to 64 is shown below.



2. Viewing field

Sensor viewing field (typical) is shown below.

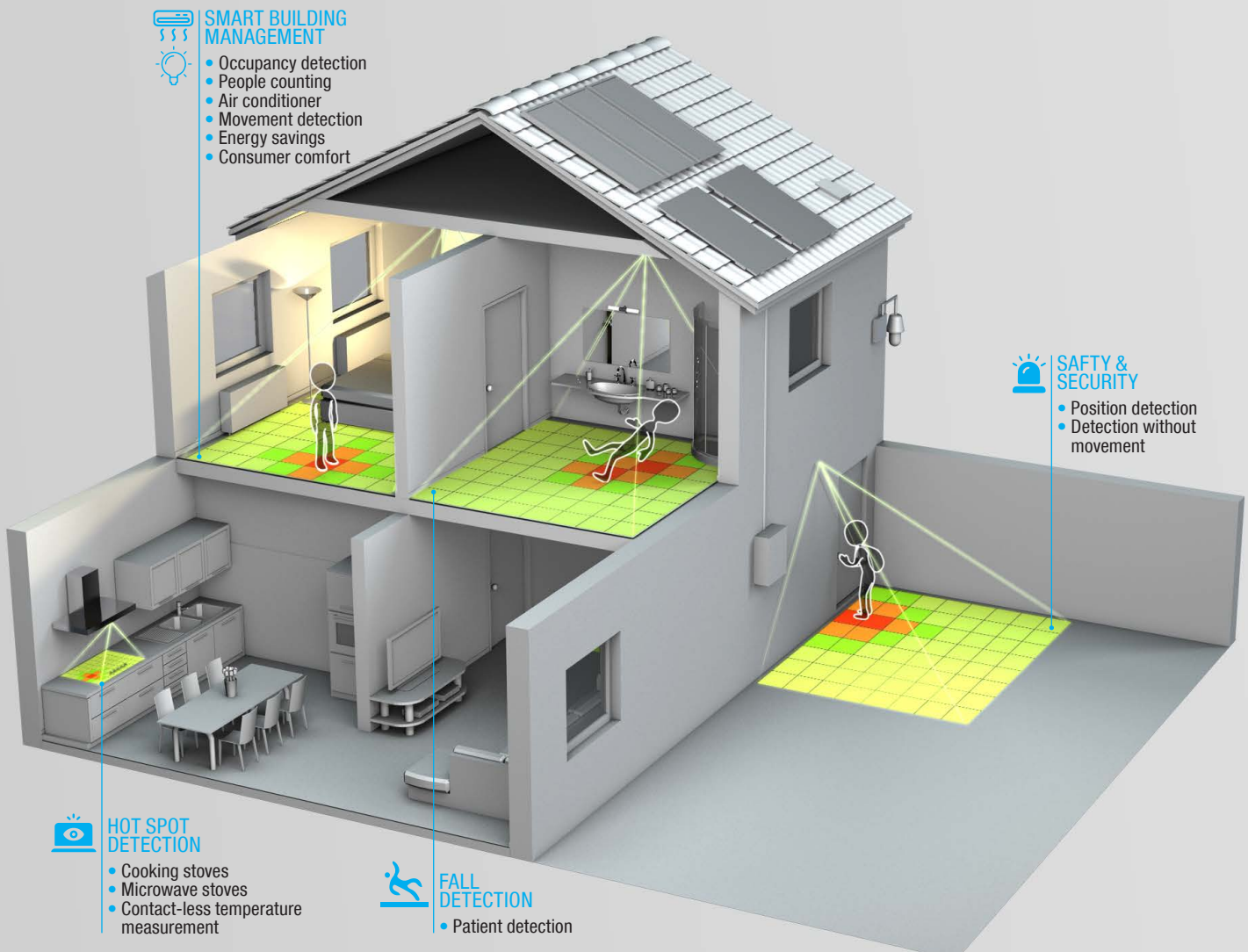


Grid-EYE opens the door to a whole world of new applications, ranging from energy savings in the lighting industry (commercial and public places as well as residential spaces) to household applications

(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.

FIELD OF APPLICATIONS

FOR YOUR INFRARED BASED SMART APPLICATIONS



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