# Acceleration sensors

Light sensors

# Infrared Array Sensor Grid-EYE



High Precision Infrared Array Sensor based on Advanced MEMS Technology

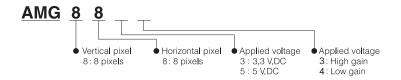
### Features

- ullet Temperature detection of two-dimensional area: 8 imes 8 (64 pixels)
- Digital output (capability of temperature value output)
- Compact SMD package (adaptively to reflow mounting)
- RoHS compliant

# Typical Applications

- High function home appliances (microwaves and air-conditioners)
- Energy saving at office (air-conditioning/lighting control)
- Digital signage
- Automatic doors/elevators

# **Ordering Information**



### **Types**

Product name	Number of pixel	Operating voltage	Amplification factor	Part number
Infrared array sensor Grid-EYE	64 (Vertical 8 × Horizontal 8 Matrix)	3.3 V.DC	High gain	AMG8833
			Low gain	AMG8834
		5.0 V.DC	High gain	AMG8853
			Low gain	AMG8854

Tape and reel package: 1,000 pcs.

## Rating

ltem	Performance		
item	High gain	Low gain	
Applied voltage	3.3 V.DC±0.3 V.DC or 5.0 V.DC±0.5 V.DC		
Temperature range of measuring object	0 °C to 80 °C +32 °F to +176 °F	−20 °C to 100 °C −4 °F to +212 °F	
Operating temperature range	0 °C to 80 °C +32 °F to +176 °F	−20 °C to 80 °C −4 °F to +176 °F	
Storage temperature range	–20 °C to 80 °C –4 °F to +176 °F	−20 °C to 80 °C −4 °F to +176 °F	

# **Panasonic**

# Infrared Array Sensor Grid-EYE (AMG88)

# **Absolute Maximum Ratings**

Item	Absolute maximum ratings	Terminal
Applied voltage	-0.3 V.DC to 6.5 V.DC	VDD
Input voltage	-0.3 V.DC to VDD +0.3 V.DC	SCL, SDA, AD_SELECT
Output sink current	-10 mA to 10 mA	INT, SDA
Static electricity (Human body model)	1 kV	All terminals
Static electricity (Machine model)	200 V	All terminals

# Characteristics

Item	Performance		
Item	High gain	Low gain	
Temperature accuracy	Typical ±2.5 °C ±4.5 °F	Typical ±3.0 °C ±5.4 °F	
Human detection distance *1	Max. <b>7</b> m 22.966 ft		
Viewing angle	Typical 60 °		
Optical axis gap	Within Typical ±5.6 °		
Current consumption	Typical 4.5 mA (normal mode) Typical 0.2 mA (sleep mode) Typical 0.8 mA (stand-by mode)		
Setup time	Typical 50 ms (Time to enable communication after setup) Typical 15 s (Time to stabilize output after setup)		

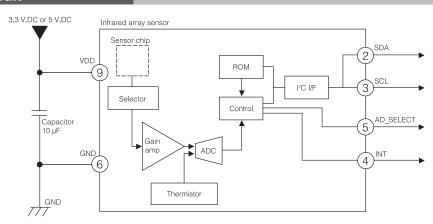
Note: \$1 To have more than 4 °C 7.2 °F of temperature difference from background Detection object size: 700  $\times$  250 mm 27.559  $\times$  9.843 inch (Assumable human body size)

# Performance

ltem	Performance	
Number of pixel	64 (Vertical 8 × Horizontal 8 Matrix)	
External interface	I <sup>2</sup> C (fast mode)	
Frame rate	Typical 10 frames/sec or 1 frame/sec	
Operating mode *1	Normal Sleep Stand-by (10 sec or 60 sec intermittence)	
Output mode	Temperature output	
Calculate mode	No moving average or Twice moving average	
Temperature output resolution	0.25 °C	
Number of sensor address	2 (I <sup>2</sup> C slave address)	
Thermistor output temperature range	−20 °C to 80 °C −4 °F to +176 °F	
Thermistor output resolution	0.0625 °C	

Note: \*1 Normal Mode : normal operation mode; Sleep Mode: detection is off (output and data reading not possible); Standby Mode: 1 frame measuring intermittently every 10 or 60 sec.

# **Internal Circuit**



 $\bigstar$  INT terminal 4 normally has same voltage as VDD. When interrupting, same as GND (0V)