



# THE DATASHEET OF AMG8833



## Infrared Array Sensor Grid-EYE



High Precision Infrared Array Sensor based on Advanced MEMS Technology

Acceleration sensors

Light sensors

Motion sensors

Infrared array sensors

Pressure sensors

Information

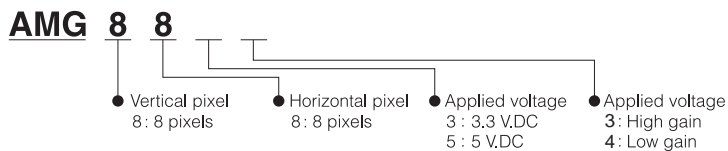
### Features

- Temperature detection of two-dimensional area: 8 × 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

Item	Performance	
	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

## 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	
	High gain	Low gain
Temperature accuracy	Typical $\pm 2.5\text{ }^{\circ}\text{C} \pm 4.5\text{ }^{\circ}\text{F}$	Typical $\pm 3.0\text{ }^{\circ}\text{C} \pm 5.4\text{ }^{\circ}\text{F}$
Human detection distance *1	Max. 7 m 22.966 ft	
Viewing angle	Typical 60 °	
Optical axis gap	Within Typical $\pm 5.6\text{ }^{\circ}$	
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)	

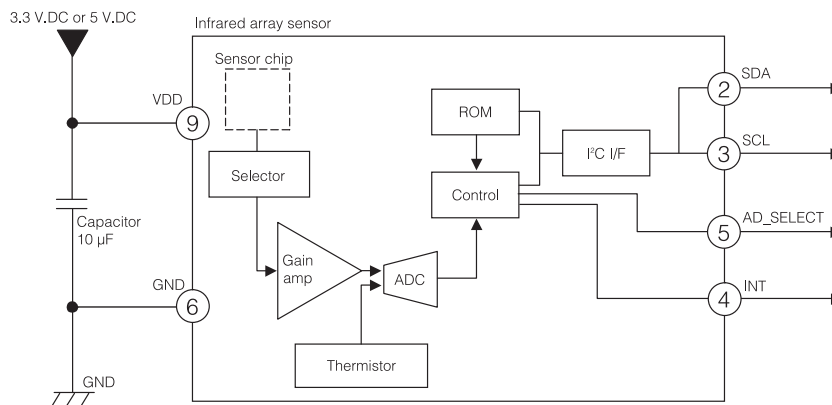
Note: \*1 To have more than 4 °C 7.2 °F of temperature difference from background  
Detection object size: 700 × 250 mm 27.559 × 9.843 inch (Assumable human body size)

## Performance

Item	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





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

Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use.  
Should a safety concern arise regarding this product, please be sure to contact us immediately.

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