

**MITSUBISHI  
ELECTRIC**

*Changes for the Better*

for a greener tomorrow



**INFRARED SENSORS**  
MeDIR

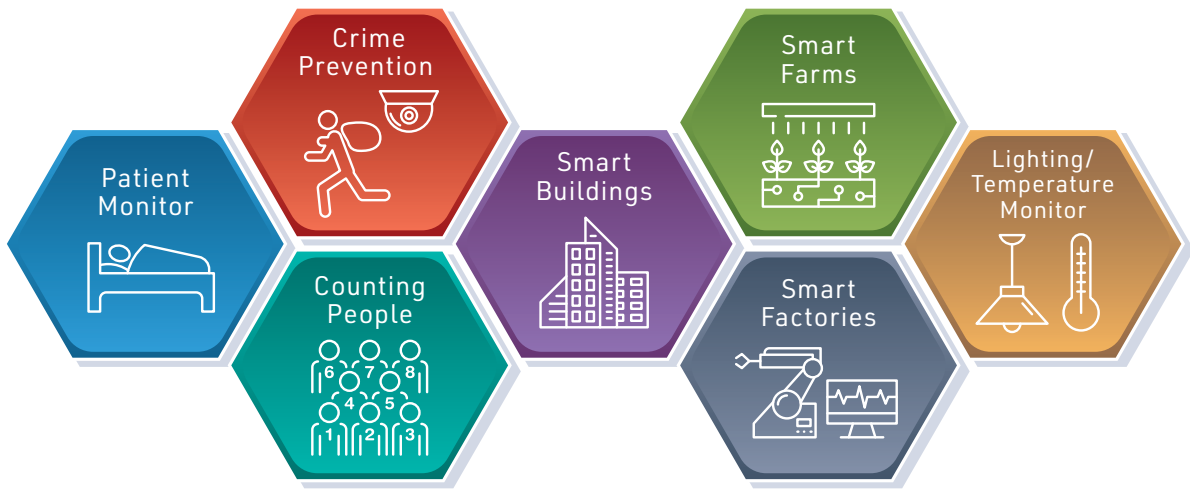
The background features a complex, abstract graphic composed of various shades of orange and red. It includes several large, solid hexagons and many smaller, outlined hexagons of varying sizes. These hexagons are interconnected by a network of thin, light-colored lines that resemble a circuit board or a data network. The overall effect is a sense of connectivity and technology.

**Infrared  
Sensors**

# Highly precise detection of people and objects using sensor technologies installed in satellites



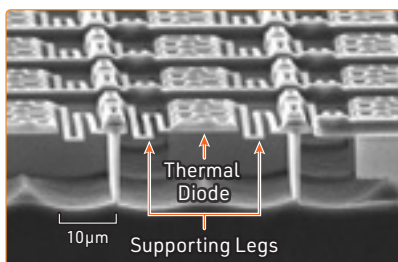
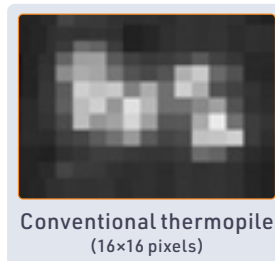
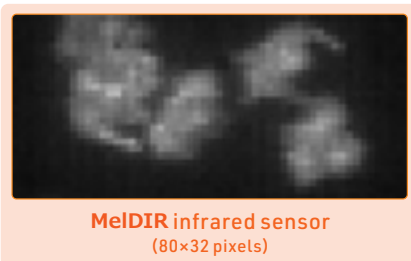
## Applications



## Features

1

**High pixel count and high temperature-resolution enable highly precise understanding of people/object movement**

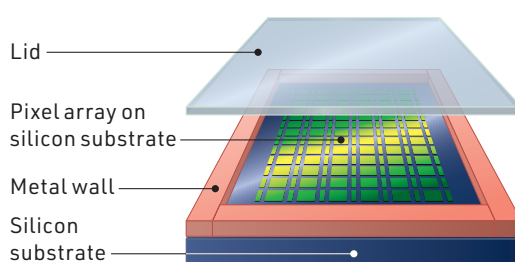


### Mitsubishi Electric Original Pixel Structure

- 1) The supporting legs are ultrathin thanks to the introduction of an innovative microfabrication technique. This makes it possible to transfer energy more efficiently without releasing heat, thereby enabling the pixel count to be increased and achieving higher image resolution.
- 2) The generation of electromagnetic noise is minimized by mounting the thermal diode and high-performance amplifier on the same chip, achieving high temperature-resolution.

2

**Vacuum-sealing, Chip-scale Packaging Contributes to Compact Space-saving Size**



### Vacuum-sealing, Chip-scale technology

- 1) Chip-scale packaging technology developed in-house eliminates the use of ceramic package and achieves vacuum state performance.
- 2) New packaging technology reduces product size to approximately 80% compared to conventional products\*, enabling greater compactness and space savings.

\*1: Compared to general 16x16 pixel thermopiles available in market.



## Specifications

### High pixel count

- Tenfold compared to conventional (80 × 32 pixels)

### High temp. resolution

- Fivefold compared to conventional (by units of 0.1 °C, 100mK)

### Compact & Space-saving

- Reduces product size to 80% compared to conventional (19.5 × 13.5 × 9.5 mm)

	MIR8032 series
Type No.	MIR8032A1★ / MIR8032B1★
Pixels	80 × 32
Temp. resolution (NETD)	100 mK (Typ.)
FOV	78° × 29° (Typ.)
Operating voltage	3.3 V
Current consumption	50 mA (Max.)
Product dimensions	19.5 × 13.5 × 9.5 mm
Detectable temp. range	-5 ~ +60 °C
Interface	Serial Peripheral Interface (SPI)

★: New product

## Example Images by Application

	MeiDIR infrared sensor (80×32 pixels)	Illustration Image
<p>Crime Prevention</p>		
<p>Patient Monitor</p>		
<p>Smart Buildings</p>		
<p>Counting People</p>		

### ■ Sensor Technology Installed in Satellites

Thermal diode sensor technology adopted to install a Compact InfraRed Camera (CIRC) in the ALOS-2†



DAICHI-2 (ALOS-2)

† ALOS-2: Advanced Land Observing Satellite -2, which Mitsubishi Electric delivered to the Japan Aerospace Exploration Agency in 2014 and is now in operation

### ■ Installed in Kirigamine FZ-Z Series Room Air Conditioners

The newly developed "Move Eye mirA.I+†" is equipped with AI technology and high-resolution sensors.

A world-first\*2, the airflow from the air conditioner is detected with high accuracy\*3 and adjust to various residential environmental, leading to comfortability



Move eye mirA.I+†



Image

\*2: Beginning Installation from FZ Series released in November 1, 2019, according to in-house research. \*3: Technology to infer airflow and strength based on temperature change at destinations of warm and cool air.

### Mitsubishi Electric Semiconductors & Devices Website

[www.MitsubishiElectric.com/semiconductors/](http://www.MitsubishiElectric.com/semiconductors/)



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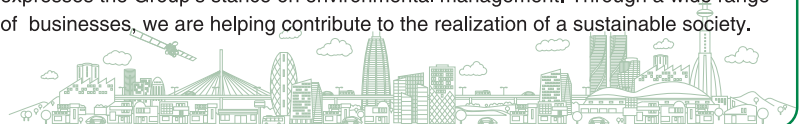
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for a greener tomorrow

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