

<MeiDIR>

MIR8060C1

THERMAL DIODE INFRARED SENSOR, 80x60 pixels, FOV 100°x73°

<Scene> A fall in the office

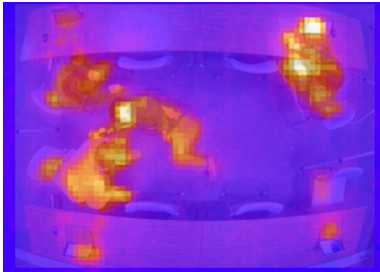


Image fused from MeiDIR and a visible camera.

DESCRIPTION

MeiDIR is an infrared sensor array applying unique thermal diode technology. It has an SPI interface and comes together with an IR lens and an ASIC with an OTP* memory that stores the sensitivity calibration data.

FEATURES

- Pixel resolution: 80x60 pixels
- FOV : 100° x 73°
- Frame rate : 4fps, 8fps
- NETD : 180mK @4fps
- Spectral range : 8 to 14 μ m
- Detectable temperature range : -5 to 60°C

APPLICATIONS

- Smart Building, Elder care, etc...

*OTP: one time programmable

Absolute maximum ratings

Symbol	Parameter	Min	Max	Unit
VDD	Power Supply Voltage	-0.3	3.8	V
MISO MOSI SCK NRST	Digital In-Out	-0.3	3.8	V
Tstg	Storage Temperature	-40	85	° C
Top	Operation Temperature	-20	85	° C

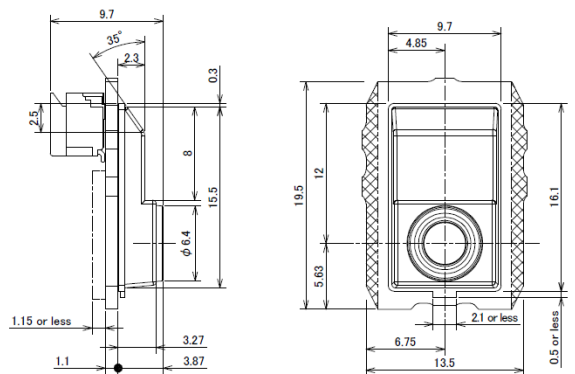
Electrical Characteristics

Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
Id	Current Consumption	Vdd: 3.3V Ta: 24° C			50	mA
NETD	Noise Equivalent Temp. Difference			180 @4fps		mK
FOVy	Field of View				100	°
FOVx	Field of View				73	°

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OUTLINE DRAWING Unit: millimeters



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Cautions for product handling

Static Electric

This product is more prone to static electricity (ESD = electro-static discharge). Generation of ESD, meanwhile, can cause the element to break. When handling this product, please observe the following cautions.

<Static Electricity and Surge Countermeasures>

To prevent element breakage from static electricity or surge, please adopt the following countermeasures at the assembly line.

- (1) Machine ground all devices, machinery jigs and other items during the process. Take particular care with hot plates, solder irons and other items for which the commercial power supplies are prone to leakage.
- (2) Workers should always use earth bands. It is highly recommended, furthermore, that clothing difficult to be electrically charged, electric conduction shoes and other safety equipment be worn on the job.
- (3) Use conductive items for this product's container, etc.
- (4) It is recommended that grounding mats be placed on assembly line workbench surfaces, the floor in the immediate area, etc.
- (5) When mounting this product in parts or materials with the possibility of collecting electrical charges (printed wiring boards, plastic products, etc.), pay close attention to the static electricity in those parts. Collected charges can cause breakage in the product.
- (6) Work environment humidity should be controlled to maintain a minimum level of 40 percent RH.

These countermeasures are general in nature, and there is a need to amply confirm the line before commencing set mass production using this product (at the test production stage, etc.). For surge countermeasures, it is extremely important to prevent surge, and to quickly disperse any surge that does occur to prevent it from spreading.

Safety

Description of products using silicon is used in this product. To prevent danger, never grind, plane, burn or chemically treat this product. Also, never put place product in your mouth or swallow it.

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Important Notice

The information contained in this datasheet shall in no event be regarded as a guarantee of conditions or characteristics. This product has to be used within its specified maximum ratings and is subject to customer's compliance with any applicable legal requirement, norms and standards.

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There is always the possibility that trouble may occur with them by the reliability lifetime when used under special circumstances. When the product is used in the following circumstances, Mitsubishi Electric do not take responsibility for the damage that occurred by using this product, and do not guarantee quality of this product.

- (1) Do not touch the lens as it may cause fluctuations or deterioration of optical performance.
- (2) The lens cap made of resin and creep may deform the lens cap and degrade the optical performance. Therefore, design the lens cap so that it does not continuously apply a load to the lens cap during mounting.
- (3) Avoid use in locations where water or organic solvents can become directly attached, or where there is any possibility of the generation of oil, corrosive gas, explosive gas, dust, salinity and other chemicals (e.g. SO₂, H₂S, Cl, HCl, HF, NH₃, O₃, NO_x, Carbonyl sulfide and Hydrocarbon compounds etc.). Such environments will not only conspicuously lower reliability, but also harbor the potential of leading to serious accidents. And do not use in condensation, freezing, precipitation, or water wetting environments.
- (4) Maximum ratings may destroy the device. Therefore, even if the specified values are instantaneous, please design not to exceed. In addition, please do not operate around maximum rating continuously.
- (5) Please do not use in the environment directly exposed to the direct sunlight or the sea breeze.
- (6) When the vibration, shock and stress apply to the product, those may cause failure and malfunction. Please avoid it.
- (7) Adhesion of foreign contamination to this product may cause failure or malfunction. Also, avoid any foreign substances adhering to the lens surface or scratches on the lens surface, because these can interfere with the transmission of infrared rays.
- (8) Inserting or unplugging the connector while turning this product on may cause a malfunction of product. Also, even if this product turning off, repeatedly inserting and unplugging the connector may cause failure or malfunction of the connector, so avoid it.
- (9) This datasheet is for the product itself. Please perform performance and quality verification under actual use conditions to ensure that there are no problems.
- (10) Failure or malfunction may occur due to electromagnetic waves or power supply noise. Perform performance and quality verification under actual use conditions to ensure that there are no problems.

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Keep safety first in your circuit designs!

Mitsubishi Electric Corporation puts the maximum effort into making semiconductor products better and more reliable, but there is always the possibility that trouble may occur with them. Trouble with semiconductors may lead to personal injury, fire or property damage. Remember to give due consideration to safety when making your circuit designs, with appropriate measures such as (i) placement of substitutive, auxiliary circuits, (ii) use of non-flammable material or (iii) prevention against any malfunction or mishap.

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Main Revision for this Edition

No.	Date	Revision	
		Pages	Points
*	27/Sep./2024	5	New Release