

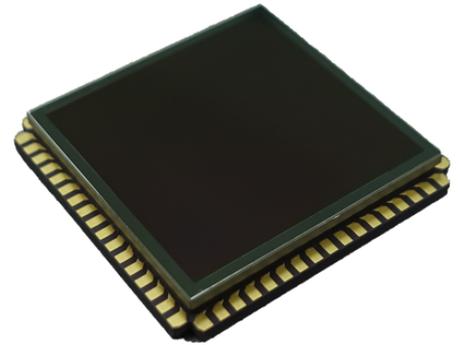
# Uncooled Thermal Image Detector



Tian Yuan Global Corp.

## Overview

Our uncooled infrared focal plane detector is an uncooled long-wave infrared photodetector, which uses a microbolometer of vanadium oxide material to convert infrared radiation to electrical signals, which can be integrated into an infrared thermal imaging machine. The focal plane array is composed of a silicon-based readout IC and a MEMS pixel array with a pixel size of 17  $\mu\text{m}$  and is vacuum-packaged in a ceramic tube shell without a thermoelectric cooler, which meets ROHS requirements.



## Spotlight

- Considering sensitivity, uniformity, and performance, it is suitable for a variety of applications
- Highly adaptable, greatly reducing BOM cost, highly adaptable
- Excellent temporal and spatial noise, noise reduction technology to minimize the impact of noise
- Lower chip power consumption and can work in low power consumption mode(120mW)
- Comprehensive on-chip offset calibration to ensure high dynamic range thermal imaging capabilities
- No TEC and low temperature drift output, simplifying external calibration and correction operations
- Built-in temperature sensor, can digitally output the chip temperature

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## Product Features

- 384x288/640x512 array pattern
- 17  $\mu\text{m}$  pixel size
- Maximum frame rate 100Hz
- NETD<40mK (F/1, 300K, 50Hz)
- Thermal time constant <12ms
- 3.3V/1.8V power supply
- Internal low noise reference and LDO
- Typical 80mW
- Fully digital interface, no external DAC/ADC required
- Operational rate>99.5%
- Internal 14-bit column ADC
- Supports no TEC and no shutter applications
- Operating temperature range  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
- PGA ceramic package
- 24.13x24.13x3.9mm



## Applications

- Advanced Driver Assistance Systems (ADAS)
- Vehicle security night vision
- Security protection monitoring
- Firefighting and rescuing
- Mountain, inshore waters rescuing
- Long-term care medical monitoring