



CMOS CAMERA MODULES

your BEST camera module partner

KLT-OIS-FF-OV4689 V7.0A

**OmniVision OV4689 MIPI Interface Fixed Focus 4MP Camera Module
Micro Gimbal Stabilizer, Optical Image Stabilization (OIS) Platform**



Camera Module No.	KLT-OIS-FF-OV4689 V7.0A
Image Sensor	OV4689
Stabilizer	Optical Image Stabilization (OIS)
EFL	3.56 mm
F.NO	2.8
Pixel	2688 x 1520
View Angle	122°
Lens Type	1/3 inch
Lens Dimensions	25.00 x 25.00 x 16.11 mm
Module Size	80.00 x 25.00 mm
Module Type	Fixed Focus
Interface	MIPI

Mating Connector Part No. AXE534124



Mating Connector On Main Board. Sold Separately.

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OIS Camera Modules

(OIS = Optical Image Stabilization Platform)

World's Smallest Gimbal Stabilizer



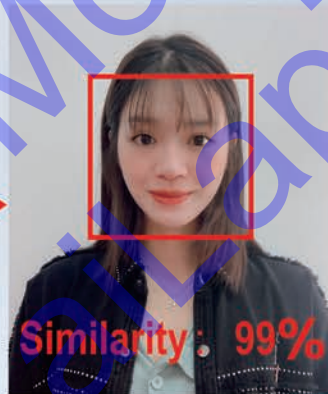
Core Technologies:

- MGS (micro gimbal stabilizer)
(The lens and image sensor tilt together)
- $\pm 5^\circ$ max. compensation angle
(More than enough for walking and jogging)
- Innovative anti-shaking solutions with 10+ patents
- Integrated design, including a gyroscope and an MGS driver IC

EIS:



MGS:



Face recognition success rate



MGS can significantly reduce blur especially in low-light conditions, and thus support dynamic face recognition and other emerging technologies

Main Advantages:

- Support horizontal FOV over 100deg
- Support all-glass lens
- 2m+ drop test
- Easy to use
- One-stop anti-shaking solution provider
- Light weight down to 5g
- Small size down to 19×19mm
- Competitive price

Ordering Models



KLT-OIS-USB1A-IMX258 V1.0



KLT-OIS-AF-IMX258-C V1.0

MGA190 series:

Size: 19×19×9.9mm

Auto Focus MGS

Largest FOV: 100deg

Max. compensation angle: ±5deg

Weight: 5g

Support a wide variety of lenses and image sensors

Supported sensors:

OmniVision OV5640, Sony IMX179 & IMX258

MGF250 series:

Size: 25x25x15mm

Fixed Focus MGS

Largest FOV: 140deg

Max. compensation angle: ±5deg

Weight: 28g

Support a wide variety of lenses and image sensors

Supported sensors:

Onsemi AR1335, OmniVision OV2718 & OV4689



KLT-OIS-FF-OV4689 V7.0A

Module	Resolution	Sensor	Focus	DFOV
KLT-OIS-AF-IMX258-C V1.0	13 MP OIS	IMX258-C	Auto	87.6
KLT-OIS-USB1A-IMX258 V1.0	13 MP OIS	IMX258	Auto	87.6
KLT-OIS-FF-OV4689 V7.0A	4 MP OIS	OV4689	Fixed	122

Product Applications:



AI face recognition



Body worn camera



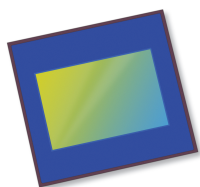
Robot



AR/VR smart glasses



Sport DV



OV4689 4MP product brief



High Frame Rate 4-Megapixel CameraChip™ Sensor with Excellent Low-Light Sensitivity and High Dynamic Range for Security Applications



available in
a lead-free
package

The OV4689 is a high performance 4-megapixel CameraChip sensor in a native 16:9 format designed for next-generation surveillance and security systems. The sensor utilizes an advanced 2-micron OmniBSI-2™ pixel to provide best-in-class low-light sensitivity and high dynamic range (HDR).

The 1/3-inch OV4689 can capture full-resolution 4-megapixel high definition (HD) video at 90 frames per second (fps), 1080p HD at 120 fps, and binned 720p HD at 180 fps. The sensor's high frame rates enable crisp, clean image and video capture of fast moving objects.

The OV4689 provides timing to capture full-resolution HDR using frame-based "sequential HDR" or line-based "staggered HDR", and quarter resolution HDR using

"alternate row HDR". The benefits of using "staggered HDR" compared to "sequential HDR" are significant reduction in motion artifacts and lower memory requirement for host processing. These modes produce high quality full-resolution 4-megapixel HDR video under extreme variations of bright and dark conditions, ensuring high contrast and excellent scene reproduction.

The OV4689 features a high-speed 4-lane MIPI serial output interface to facilitate the required high data transfer rate. The OV4689 is available in a chip scale package (CSP).

Find out more at www.ovt.com.



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Applications

- Security and Surveillance

Product Features

- automatic black level calibration (ABLC)
- programmable controls for frame rate, mirror and flip, cropping, and windowing
- static defective pixel canceling
- supports output formats: 10-bit RAW RGB (MIPI)
- supports horizontal and vertical subsampling
- supports images sizes: 4MP, 3MP, EIS1080p, 1080p, EIS720p
- fast mode switching
- support 2x2 binning, 4x4 binning, re-sampling filter
- standard serial SCCB interface
- up to 4-lane MIPI serial output interface
- embedded 4K bits one-time programmable (OTP) memory for part identification, etc
- two on-chip phase lock loops (PLLs)
- programmable I/O drive capability
- built-in temperature sensor
- supports staggered, sequential and alternative row HDR timing

OV4689



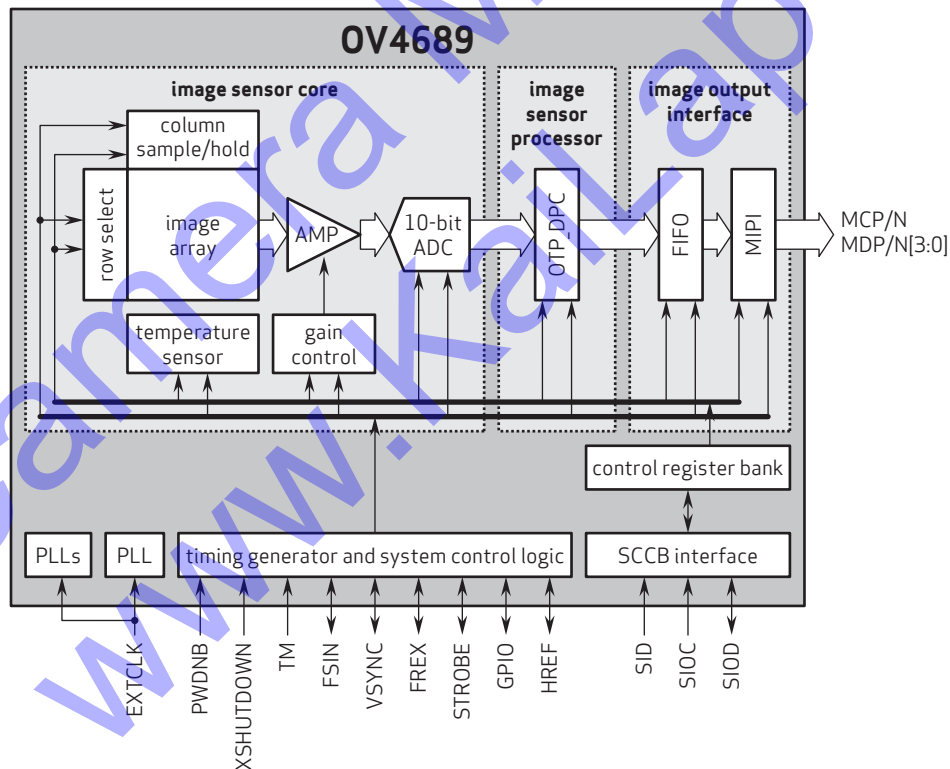
Ordering Information

- OV04689-H67A
(color, lead-free, 67-pin CSP5)

Product Specifications

- active array size: 2688 x 1520
- power supply:
 - core: 1.1 - 1.3V
 - analog: 2.6 - 3.0V
 - I/O: 1.7 - 3.0V
- power requirements:
 - active: 163 mA (261 mW)
 - standby: 1 mA
 - XSHUTDOWN: <10 μ A
- temperature range:
 - operating: -30°C to +85°C junction temperature
 - stable image: 0°C to +60°C junction temperature
- output formats: 10-bit RAW RGB data
- lens size: 1/3"
- input clock frequency: 6 - 64 MHz
- lens chief ray angle: 0°
- max S/N ratio: 38.3 dB
- dynamic range: 64.6 dB @ 1x gain
- maximum image transfer rate:
 - 2688x1520: 90 fps
 - 1920x1080: 120 fps
 - 1280x720: 180 fps
- sensitivity: 1900 mV/lux-sec
- scan mode: progressive
- maximum exposure interval: 1548 x T_{ROW}
- pixel size: 2 μ m x 2 μ m
- dark current: 4 mV/sec @ 60°C junction temperature
- image area: 5440 μ m x 3072 μ m
- package dimensions: 6630 μ m x 5830 μ m

Functional Block Diagram



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