



KLT-IRSW-OV4682 V2.0

OmniVision OV4682 with IR Switch MIPI Interface Fixed Focus 4MP M12 Camera Module

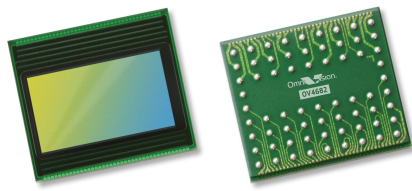


Camera Module No.	KLT-IRSW-OV4682 V2.0	
Image Sensor	OV4682	IR SWITCH
EFL	3.1 mm	Input Voltage: 4V ~ 12V
F.NO	1.8	Operating Current: 88 ~ 300 mA
Pixel	2688 x 1520	Red Line: Positive
View Angle	140°	Black Line: Negative
Lens Type	1/3 inch	
Lens Dimensions	14.00 x 14.00 x 23.10 mm	Operation:
Module Size	57.07 x 30.00 mm	ON: IR Active (Day Time)
Module Type	Fixed Focus	OFF: IR Disable (Night Time)
Interface	MIPI	

Mating Connector Part No. FH12-24S-0.5SH



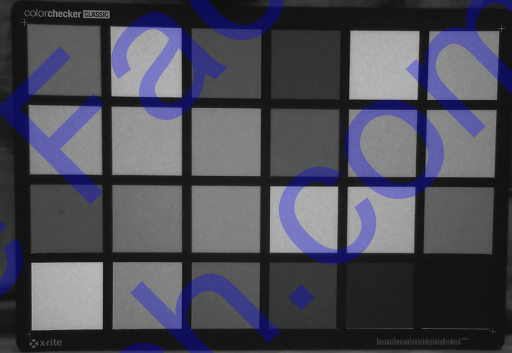
Mating Connector On Main Board. Sold Separately.



OV4682 4MP product brief



Day Light



0 Lux - IR Strobe

Dual-Purpose RGB IR CameraChip™ Sensor Brings High Sensitivity and High Frame Rates to Mobile and Machine Vision Applications



available in a lead-free package

OmniVision's OV4682 is a 4-megapixel RGB infrared (IR) single sensor that captures high-resolution images and video as well as IR information. Its dual RGB and IR capabilities allow it to bring a host of additional features to mobile and machine vision applications, including gesture sensing, depth analysis, iris detection and eye tracking. By combining two capabilities into a single sensor, the OV4682 reduces the total cost for the system while also reducing the space required for multiple sensors.

The sensor's 2-micron OmniBSI-2™ pixel delivers excellent signal-to-noise ratio and IR sensitivity, and offers best-in-class low-light sensitivity with a 40 percent increase in sensitivity compared to the 1.75-micron OmniBSI-2 pixel. The OV4682's unique architecture and pixel optimization bring not only the best IR performance

but also best-in-class image quality. Additionally, the sensor reduces system-level power consumption by optimizing RGB and IR timing.

The OV4682 records full-resolution 4-megapixel video in a native 16:9 format at 90 frames per second (fps), with a quarter of the pixels dedicated to capturing IR. The 1/3-inch sensor can also record 1080p high definition (HD) video at 120 fps with electronic image stabilization (EIS), or 720p HD at 180 fps.

The OV4682 features a high-speed 4-lane MIPI serial output interface to facilitate the required high data transfer rate. It fits into an 8.5 x 8.5 mm module with a z-height of less than 6 mm.

Find out more at www.ovt.com.



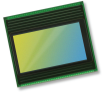
Applications

- Cellular Phones
- Tablets
- Digital Still Cameras (DSC)
- Digital Video Camcorders (DVC)
- PC Multimedia
- Security
- Gaming
- Gesture Detection

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-IR (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

OV4682



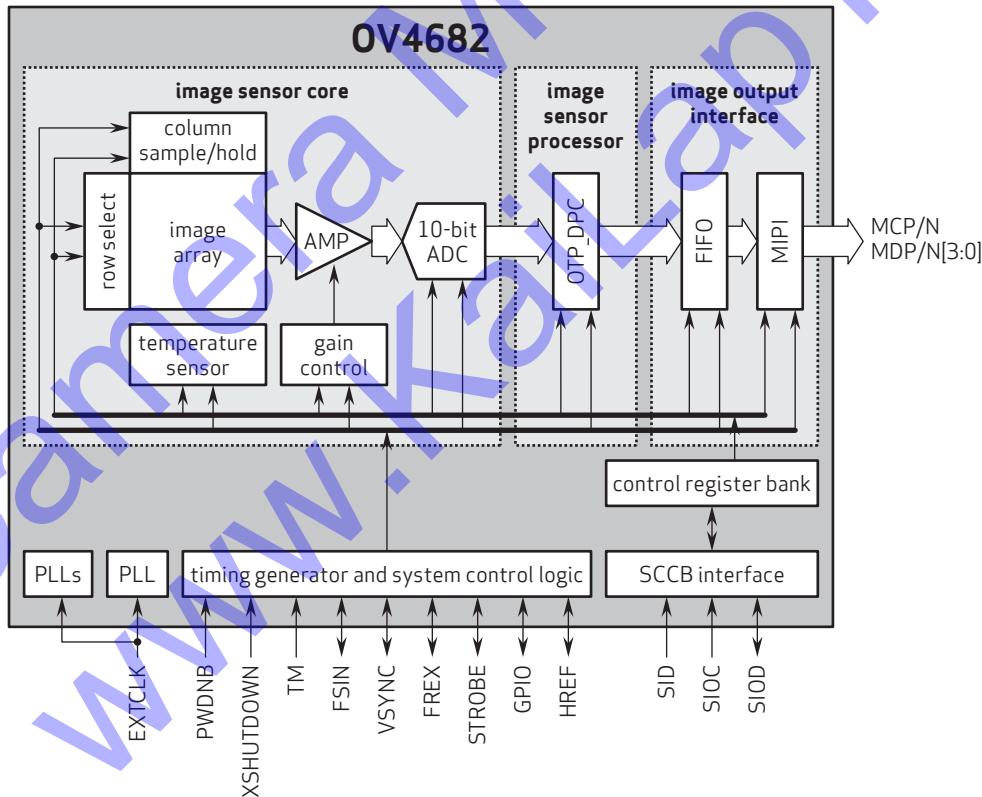
Ordering Information

- OV04682-G04A-1D**
(RGB-IR, chip probing, 200 μm backgrinding, reconstructed wafer with good die)

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: $-10 \mu\text{A}$
- 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:** 21° non-linear
- maximum image transfer rate:**
 - 2688x1520: 90 fps
 - 1920x1080: 120 fps
 - 1280x720: 180 fps
 - 672x380: 330 fps
- scan mode:** progressive
- maximum exposure interval:** 1548 x T_{ROW}
- pixel size:** 2 μm x 2 μm
- dark current:** 4 mV/sec @ 60°C junction temperature
- image area:** 5440 μm x 3072 μm
- die dimensions:**
 - COB: 6600 μm x 5800 μm
 - RW: 6650 μm x 5850 μm

Functional Block Diagram



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