CMOS CAMERA MODULES

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KLT-KS6-OV2281 V2.0

OmniVision OV2281 MIPI Interface Fixed Focus 2MP Camera Module

Camera Module No.	KLT-KS6-OV2281 V2.0
Image Sensor	OV2281
EFL	3.2 mm
F.NO	2.6
Pixel	1944 x 1944
View Angle	50°
Lens Type	1/7.5 inch
Lens Dimensions	6.00 x 6.00 x 4.60 mm
Module Size	25.00 x 12.50 mm
Module Type	Fixed Focus
Interface	MIPI

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

Mating Connector On Main Board. Sold Separately.

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OV2281 1080p product brief

Biometric Security for Next-Generation Smartphones, Tablets, and Notebooks

lead free

available in a lead-free package

OmniVision's OV2281 is a new PureCel® sensor that brings enhanced biometric security functionality to mobile devices. The low-power, ultra-compact OV2281 leverages a 1.12-micron pixel with PureCel technology to enable accurate, reliable iris recognition for smartphones, tablets, and notebooks.

The 1/7.5-inch OV2281 PureCel sensor can record 1080p high-definition (HD) video at 60 frames per second (fps) in both landscape and portrait modes to support apps with horizontal or vertical orientation.

When recording full-resolution 1944 x 1944 video at 30 fps, the sensor requires just 126 mW, and supports ultra-low power mode to reduce power consumption to approximately 25 mW. Additionally, the OV2281 features optimized IR sensitivity to produce a clear, fully stable image in difficult, low-light conditions.

The OV2281 sensor fits into a 5.5 x 5.5 mm module with a z-height of less than 4.5 mm.

Find out more at www.ovt.com.

OV2281

Applications

- Smartphones and feature phones
- Tablets
- PC multimedia
- Wearables

Product Features

- 1.12 µm x 1.12 µm pixel
- 1920x1080 at 60 fps,
  1080x1920 at 30 fps
- programmable controls for:
  - frame rate
  - mirror and flip
  - cropping
  - windowing
- supports images sizes:
  - 1944x1944
  - 1080p (1920x1080)
  - 1080x1920, and more
- 260 bytes of embedded one-time programmable (OTP) memory for customer use
- ultra low power mode (ULPM)
- support for output formats:
  10-bit B&W RAW
- interleave row HDR output
- two-wire serial bus control (SCCB)
- MIPI serial output interface
  (1- or 2-lane)
- 2x binning support
- image quality control:
  - defect pixel correction
  - automatic black level calibration

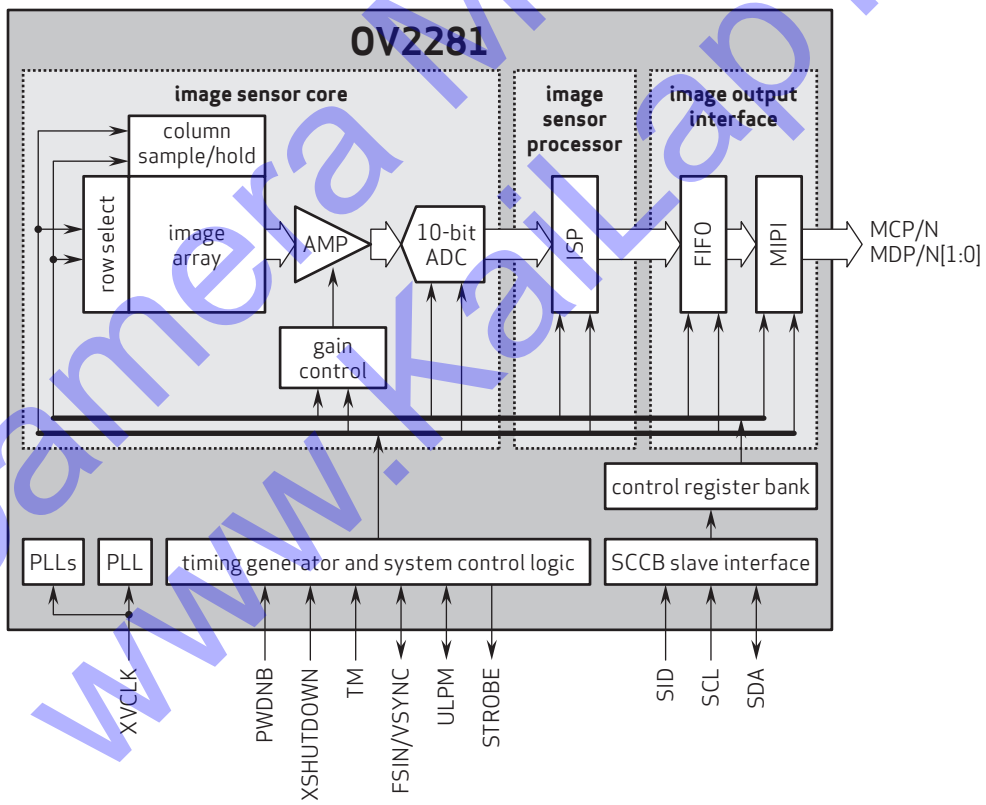
Ordering Information

- **OV02281-GA4A**
  (B&W, chip probing, 200 µm backgrinding, reconstructed wafer)

Product Specifications

- **active array size:** 1944 x 1944
- **power supply:**
  - **core:** 1.14 to 1.26V (1.2V nominal)
  - **analog:** 2.6 to 3.0V (2.8V nominal)
  - **I/O:** 1.7 to 1.9V (1.8V nominal)
- **power requirements:**
  - **active:** 126 mW
  - **standby:** 166 µW
  - **XSHUTDOWN:** 1 µW
- **temperature range:**
  - **operating:** -30°C to +85°C junction temperature
  - **stable image:** -20°C to +60°C junction temperature
- **output formats:** 10-bit B&W RAW
- **lens size:** 1/7.5"
- **lens chief ray angle:** 30.9° non-linear
- **input clock frequency:** 6 - 27 MHz
- **maximum image transfer rate:**
  - **1944x1944:** 30 fps
  - **1080p (1920x1080):** 60 fps
  - **1080x1920:** 30 fps
- **sensitivity:** 555 mV/lux-sec
- **max S/N ratio:** 35.6 dB
- **dynamic range:** 68.4 dB @ 16x gain
- **pixel size:** 1.12 µm x 1.12 µm
- **dark current:** 14 e^-/sec
  @ 60°C junction temperature
- **image area:** 2214 µm x 2214 µm
- **die dimensions:**
  - **COB:** 4050 µm x 3400.2 µm
  - **RW:** 4100 µm x 3450.2 µm

Functional Block Diagram



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