

OV2281 1080p product brief



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



available in
a lead-free
package

OmniVision's OV2281 is a 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.



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

OV2281



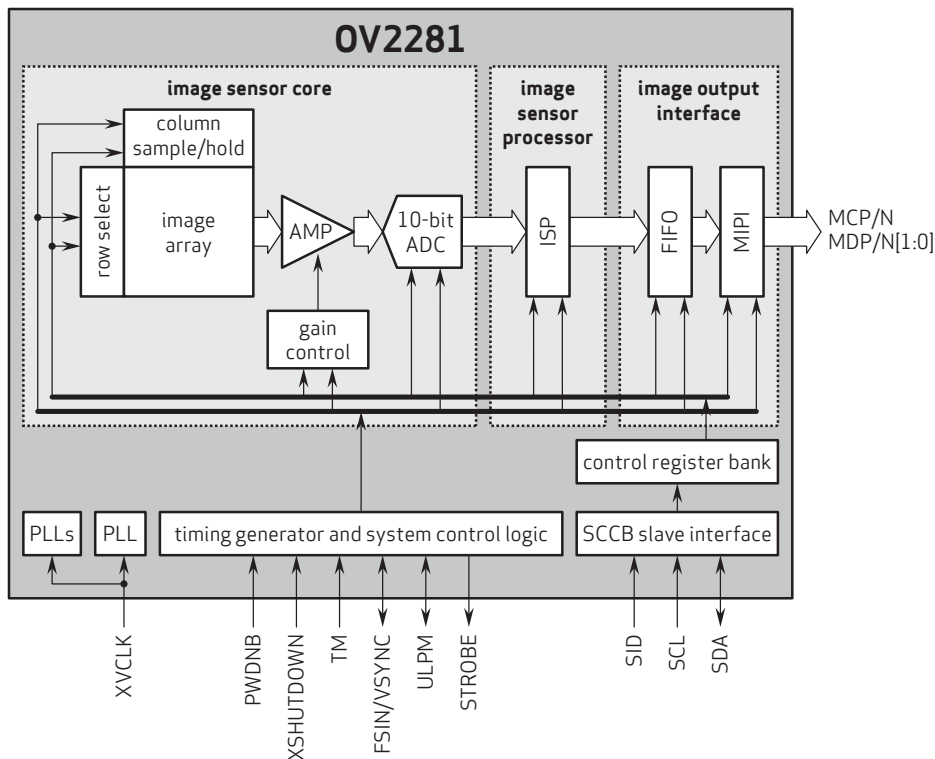
Ordering Information

- 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 interface:** 2-lane MIPI serial output
- output formats:** 10-bit B&W RAW
- lens size:** 1/7.5"
- input clock frequency:** 6 - 27 MHz
- lens chief ray angle:** 30.9° non-linear
- 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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