

OV9286 1.5MP product brief



Higher-Resolution Global Shutter Image Sensor for Facial Authentication in Smartphones



available in
a lead-free
package

OmniVision's OV9286 is a global shutter image sensor designed to enable facial authentication in mobile devices. The high-resolution OV9286 sensor offers 20% more pixels than the previous-generation sensor, to enable the highest level of accuracy in facial authentication. This makes the OV9286 ideally suited for smartphone applications that require the highest levels of security, such as mobile payments, e-banking or personalized device unlocking.

The OV9286 can also be used for other biometric authentication applications. For example, it can be used to combine facial authentication with fingerprint ID for even higher security.

The OV9286 has a high chief ray angle (CRA) of 26.7 degrees, enabling low z-height and allowing slim-profile smartphone designs. Available in a 1/3.5-inch optical format, the OV9286 captures 1328 x 1120 resolution images and video at 90 frames per second (fps) using advanced 3 x 3 micrometer OmniPixel®3-GS technology. Additionally, the sensor's excellent near infrared (NIR) sensitivity at 850 nm and 940 nm helps reduce device power consumption to extend battery life.

Find out more at www.ovt.com.



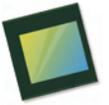
Applications

- Consumer HMD
- Machine Vision
- Mobile Devices

Product Features

- 3 μm x 3 μm pixel with OmniPixel³-GS technology
- automatic black level calibration (ABLC)
- programmable controls for:
 - frame rate
 - mirror and flip
 - cropping
 - windowing
- support output formats:
 - 8/10-bit RAW
- fast mode switching
- supports 2x2 monochrome binning
- two-lane MIPI serial output interface
- supports horizontal and vertical 2:1 and 4:1 monochrome subsampling
- support for image sizes:
 - 1328 x 1120
 - 1280 x 720
 - 640 x 480
- embedded 256 bits of one-time programmable (OTP) memory for part identification
- two on-chip phase lock loops (PLLs)
- LED PWM
- built-in strobe control

OV9286



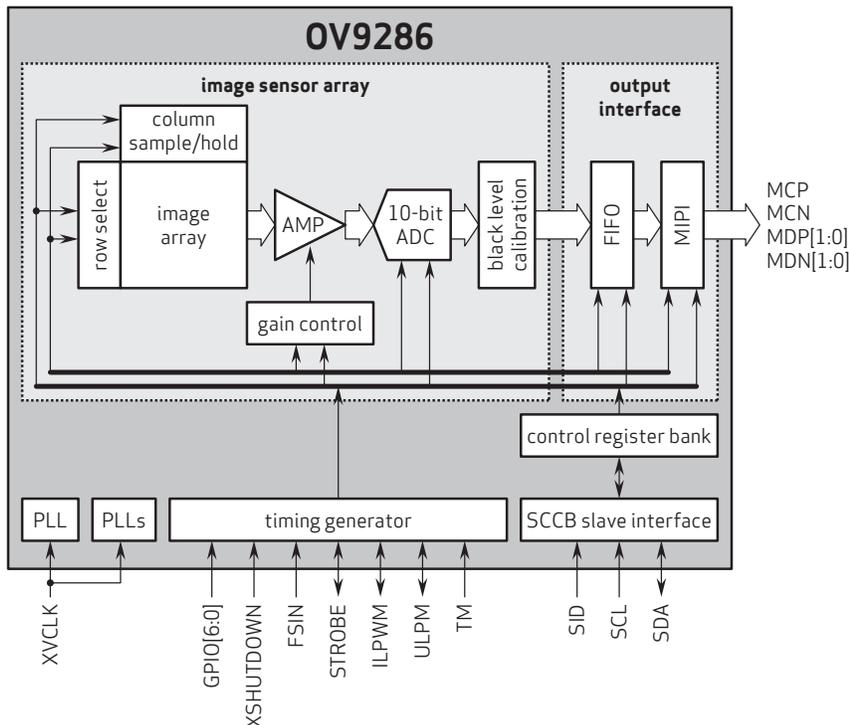
Ordering Information

- OV09286-GA4A-Z (b&w, chip probing, 200 μm backgrinding, reconstructed wafer with good die)

Product Specifications

- active array size: 1344 x 1136
- max S/N ratio: 38 dB
- power supply:
 - analog: 2.8V (nominal)
 - core: 1.2V (nominal)
 - I/O: 1.8V (nominal)
- power requirements:
 - active: 160 mW
- temperature range:
 - operating: -30°C to +85°C junction temperature
 - stable image: 0°C to +50°C junction temperature
- output interface: 2-lane MIPI serial output
- output formats: 8/10-bit RAW
- lens size: 1/3.4"
- input clock frequency: 6 - 64 MHz
- lens chief ray angle: 29.7° non-linear
- dynamic range: 68 dB
- maximum image transfer rate:
 - 1328 x 1120: 90 fps
- sensitivity:
 - 13,000 mV/($\mu\text{W}\cdot\text{cm}^2\cdot\text{sec}$) @ 850 nm
 - 6,500 mV/($\mu\text{W}\cdot\text{cm}^2\cdot\text{sec}$) @ 940 nm
- scan mode: progressive
- minimum exposure time: 1 row period
- maximum exposure time: frame length - 25 row periods, where frame length is set by registers [0x380E, 0x380F]
- pixel size: 3 μm x 3 μm
- image area: 4040.1 μm x 3414.8 μm
- dimensions:
 - COB: 5346 μm x 5578.2 μm
 - RW: 5396 μm x 5628.2 μm

Functional Block Diagram



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