

OV9285 1.5MP product brief



Cost-Effective, High-Resolution Global Shutter Image Sensor for Machine Vision Applications



available in
a lead-free
package

OmniVision's OV9285 is a global shutter image sensor designed to cost-effectively enable a wide range of consumer and industrial machine vision applications such as AR/VR headsets and accessories, industrial automation, robotics, agricultural drones and 3D modeling. This high-resolution sensor can quickly capture precise images of fast-moving or faraway objects while consuming very little power, and has a low chief ray angle (CRA) of 9 degrees to support wide field-of-view lens designs.

Available in a 1/3.4 inch optical format, the OV9285 captures 1.48 megapixel or 1328 x 1120 resolution images and video at 90 frames per second (fps) using advanced 3 x 3 micron OmniPixel®3-GS pixel technology. This global shutter technology eliminates motion artifacts and blurring, and dramatically improves low-light sensitivity. 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

OV9285



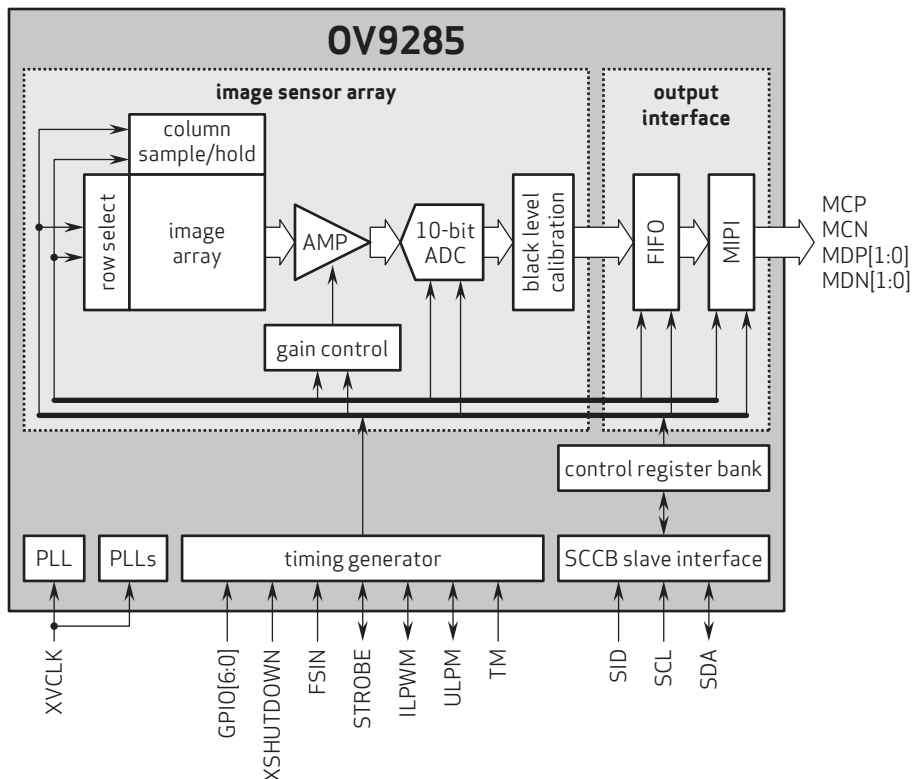
Ordering Information

- OV09285-GA4A-Z (b&w, chip probing, 200 μm backgrinding, reconstructed wafer with good die)

Product Specifications

- active array size: 1344 x 1136
- lens chief ray angle: 9°
- power supply:
 - analog: 2.8V (nominal)
 - core: 1.2V (nominal)
 - I/O: 1.8V (nominal)
- max S/N ratio: 38 dB
- dynamic range: 68 dB
- maximum image transfer rate:
 - 1328 x 1120: 90 fps
- 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}
- output interface: 2-lane MIPI serial output
- output formats: 8/10-bit RAW
- lens size: 1/3.4"
- input clock frequency: 6 - 64 MHz
- pixel size: 3 μm x 3 μm

Functional Block Diagram



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