

OV12A10-OV12A1B 12MP product brief



12-Megapixel PureCel®Plus Sensors for Dual and Single Cameras in Mobile Applications



available in
a lead-free
package

OmniVision's color OV12A10 and monochrome OV12A1B are 12-megapixel image sensors designed to deliver premium image quality for both single-camera solutions and, in particular, dual-camera solutions in high-end and mainstream mobile markets. These 1.25-micron image sensors enable mobile dual-camera solutions to produce advanced DSLR features such as optical zoom, high dynamic range (HDR), and hand jitter reduction with excellent low-light performance and low power consumption.

The OV12A10 and OV12A1B sensors are built on OmniVision's PureCel®Plus technology, which implements buried color filter array (BCFA) and deep

trench isolation (DTI) for dramatically reduced color crosstalk, as well as improved signal-to-noise ratio (SNR) and sensor angular response.

The 1/2.8-inch OV12A10 and OV12A1B include phase detection autofocus (PDAF) support and capture full-resolution 12-megapixel resolution at 30 frames per second (fps), 4K2K video at 30 fps, and 1080p resolution at 90 fps.

Find out more at www.ovt.com.



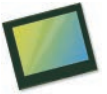
Applications

- Smartphones and Feature Phones
- Tablets
- PC Multimedia
- Wearables

Product Features

- 1.25 μm x 1.25 μm pixel
- optical size of 1/2.8"
- 34.5° CRA
- 12MP at 30 fps
- programmable controls for:
 - frame rate
 - mirror and flip
 - cropping
 - windowing
- supports images sizes:
 - 12MP (4096x3072)
 - 4K2K (3840x2160)
 - 1080p (1920x1080), and more
- 416 bytes of embedded one-time programmable (OTP) memory for customer use
- support for output formats:
 - 10-bit RGB RAW
- two-wire serial bus control (SCCB)
- MIPI serial output interface (1-lane, 2-lane, or 4-lane)
- two on-chip phase lock loops (PLLs)
- 2x binning support
- image quality controls:
 - defect pixel correction
 - automatic black level calibration
 - lens shading correction
- built-in temperature sensor
- suitable for module size of 8.5 x 8.5 x 4.5 mm

OV12A10-OV12A1B



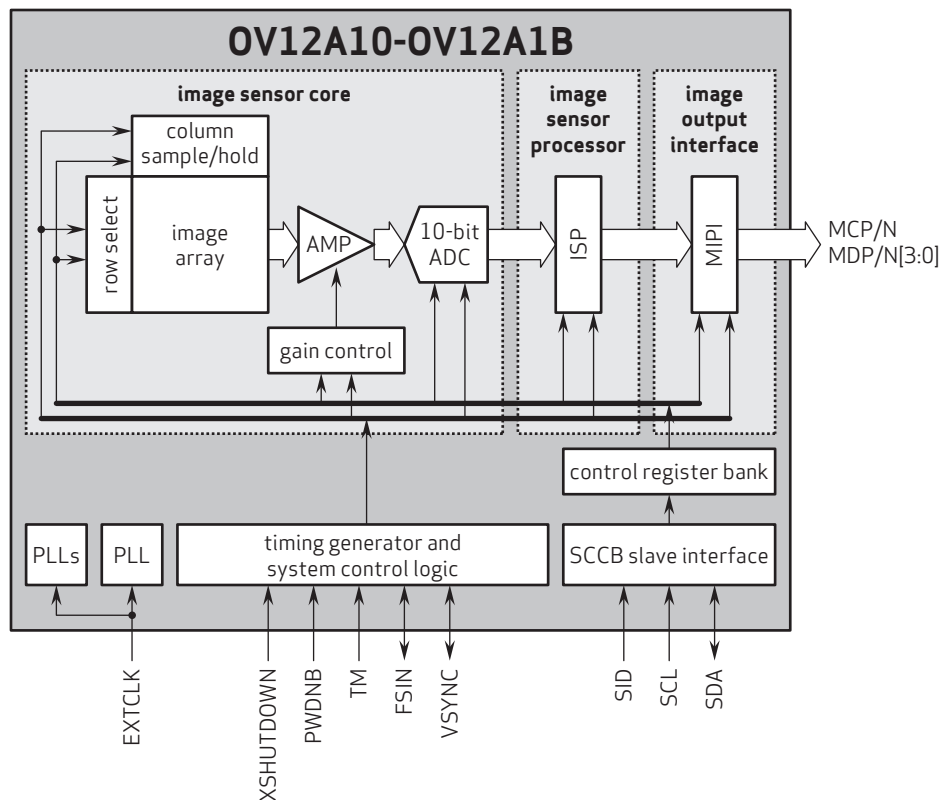
Ordering Information

- OV12A10-GA5A**
(color, chip probing, 150 μm backgrinding, reconstructed wafer)
- OV12A1B-GA5A-Z**
(b&w, chip probing, 150 μm backgrinding, reconstructed wafer)

Technical Specifications

- active array size:** 4096 x 3072
- maximum image transfer rate:**
 - 12MP (4096x3072): 30 fps
 - 4K2K: 30 fps
 - 1080p: 90 fps
 - 720p: 120 fps
- power supply:**
 - analog: 2.7 to 3.0V (2.8V nominal)
 - core: 1.14 to 1.26V (1.2V nominal)
 - I/O: 1.7 to 1.9V (1.8V nominal)
- power requirements:**
 - active: 217 mW (typical for 12MP @ 30 fps)
 - standby: 890 μW (typical)
 - XSHUTDOWN: 1.5 μW (typical)
- temperature range:**
 - operating: -30°C to +85°C junction temperature
 - stable image: 0°C to +60°C junction temperature
- output interface:** 4-lane MIPI serial output
- output formats:** 10-bit RGB RAW
- lens size:** 1/2.8"
- lens chief ray angle:** 34.5° non-linear
- pixel size:** 1.25 μm x 1.25 μm
- image area:** 5107.10 μm x 3835.30 μm

Functional Block Diagram



4275 Burton Drive
Santa Clara, CA 95054
USA

Tel: +1 408 567 3000
Fax: +1 408 567 3001
www.ovt.com

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