OV12A

12 megapixel product brief

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

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 1.242-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.

OV12A

Ordering Information

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

Applications

- smartphones and feature phones
- tablets
- PC multimedia
- wearables

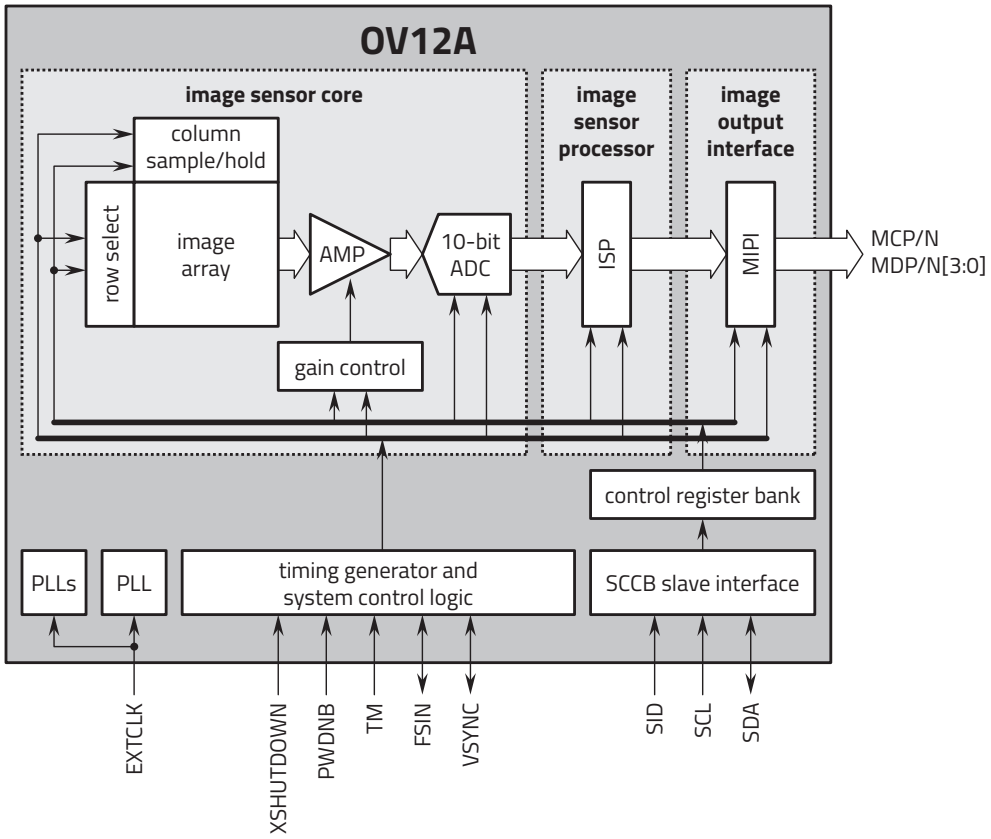
Technical Specifications

- **active array size:** 4096 x 3072
- **maximum image transfer rate:**
  - 12MP (4096 x 3072): 30 fps
  - 4K2K (3840 x 2160): 30 fps
  - 1080p (1920 x 1080): 90 fps
  - 720p (1280 x 720): 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)
- **output formats:** 10-bit RGB RAW
- **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
- **lens size:** 1/2.8"
- **lens chief ray angle:** 34.5° non-linear
- **scan mode:** progressive
- **pixel size:** 1.242 µm x 1.242 µm
- **image area:** 5107.104 µm x 3835.296 µm

Product Features

- 1.242 µm x 1.242 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 image sizes:
  - 12MP (4096 x 3072)
  - 4K2K (3840 x 2160)
  - 1080p (1920 x 1080), 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 <5 mm

Functional Block Diagram



Version 1.4, March 2023

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