

OV13A10 13MP product brief



available in
a lead-free
package

High-Performance 13-Megapixel PureCel®Plus-S Image Sensor Optimized for Dual-Camera Smartphone Applications

OmniVision's OV13A10 is an ultra-compact 13-megapixel image sensor built on OmniVision's second-generation, 1.0-micron PureCel®Plus-S stacked die pixel technology. Designed specifically for dual-camera applications, the OV13A10 achieves a z-height of less than 6 mm, meeting the compact space requirements of next-generation smartphones.

A customized chief ray angle (CRA) enables the OV13A10 to be used as a tele-sensor in a 2x optical zoom configuration, which offers DSLR-like image quality and user experience. The OV13A10 is also optimized for dual-camera zoom solutions, with features such as context switching and frame synchronizing to simplify camera system architecture.

The OV13A10 brings a host of advanced imaging capabilities to smartphones, including zigzag high dynamic range (zHDR) and phase-detection autofocus (PDAF), which extends the sensor's dynamic range capabilities and enables snap-quick autofocus, respectively. The sensor supports multiple resolution and frame-rate configurations, including full-resolution 13-megapixel images and video at 30 frames per second (fps) with zHDR, 4K2K video at 30 fps, and 1080p video at 60 fps.

Find out more at www.ovt.com.



Applications

- Smartphones
- Video Conferencing
- PC Multimedia

Product Features

- 13MP @ 30 fps, 4K2K @ 30 fps
- supports phase detection auto focus (PDAF) pixels with bypass PD pixels
- supports dynamic defect pixel correction (DPC)
- automatic black level calibration (ABLC)
- total embedded one-time programmable (OTP) memory: 1536 bytes
- supports typical images sizes:
 - 4224x3136
 - 4224x2376
 - 2112x1568
 - 2112x1188
 - 1408x792
- supports horizontal and vertical subsampling
- programmable I/O drive capability
- supports ZigZag HDR timing
- programmable controls for:
 - frame rate
 - mirror and flip
 - cropping
 - windowing
- up to 4-lane MIPI TX interface with speed up to 1.2 Gbps/lane
- standard serial SCCB interface with speed up to 1 MHz (when clock input is >10 MHz)
- supports output formats:
 - 10-bit RAW RGB
 - DPCM 10-8 compression
- long exposure time of up to 30 seconds
- two on-chip phase lock loops (PLLs)
- built-in temperature sensor
- typical module size: 8.5 x 8.5 x <6 mm

OV13A10



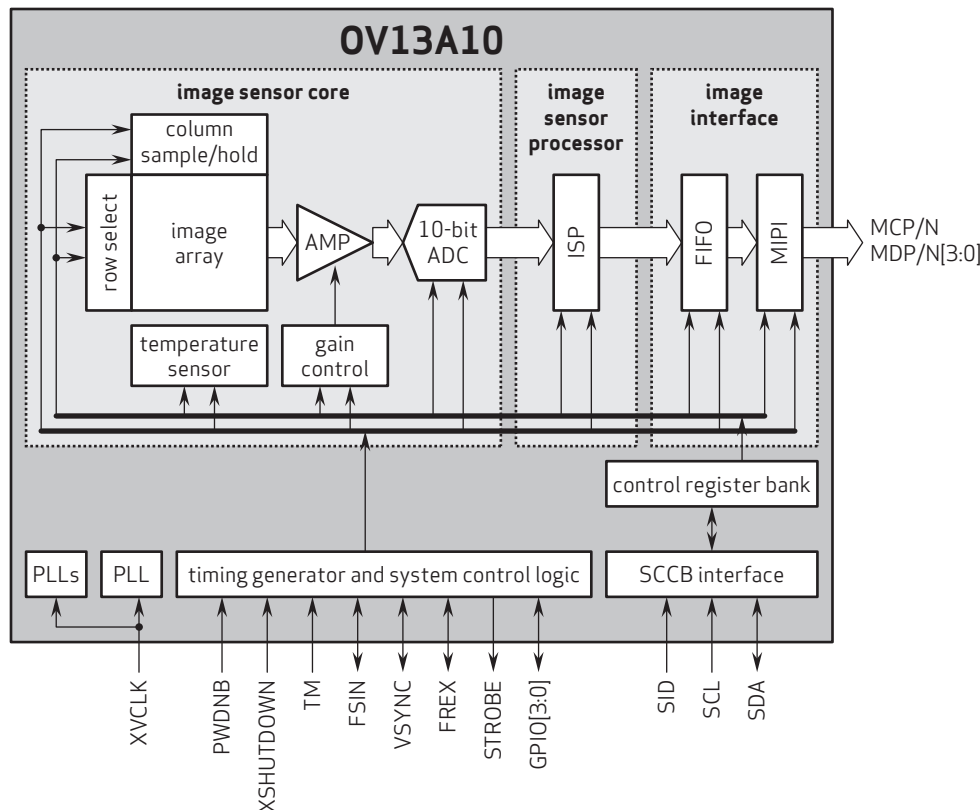
Ordering Information

- **OV13A10-GA5A-Z**
(color, chip probing, 150 μ m backgrinding, reconstructed wafer with good die)

Technical Specifications

- **active array size:** 4224 x 3136
- **maximum image transfer rate:**
 - 4224 x 3136: 30 fps
 - 4224 x 2376: 30 fps
 - 2112 x 1568: 60 fps
 - 2112 x 1188: 60 fps
 - 1408 x 792: 60 fps
- **temperature range:**
 - **operating:** -30°C to +85°C junction temperature
 - **stable image:** 0°C to +60°C junction temperature
- **pixel size:** 1.008 μ m x 1.008 μ m
- **lens size:** 1/3.4"
- **lens chief ray angle:** 29.48° non-linear
- **scan mode:** progressive
- **image area:** 4290.05 μ m x 3193.34 μ m
- **power supply:**
 - **core:** 1.2V
 - **analog:** 2.8V
 - **I/O:** 1.8V
- **power requirements:**
 - **active:** 228 mW
 - **standby:** 1.2 mW
 - **XSHUTDOWN:** <20 μ A

Functional Block Diagram



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