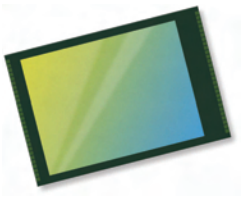


OV13A10 13MP product brief

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

lead free

available in a lead-free package

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.

OmniVision

OV13A10

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

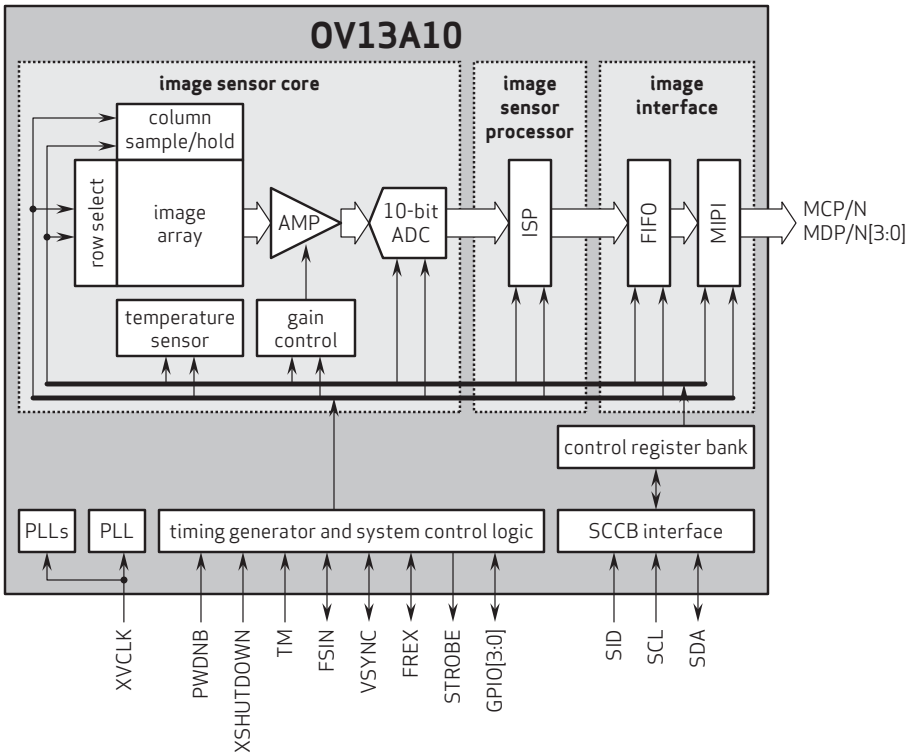
Ordering Information

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

Product Specifications

- **active array size:** 4224 x 3136
- **power supply:**
  - **core:** 1.2V
  - **analog:** 2.8V
  - **I/O:** 1.8V
- **power requirements:**
  - **active:** 228 mW
  - **standby:** 1.2 mW
  - **XSHUTDOWN:** <20 µA
- **temperature range:**
  - **operating:** -30°C to +85°C junction temperature
  - **stable image:** 0°C to +60°C junction temperature
- **pixel size:** 1.008 µm x 1.008 µm
- **lens size:** 1/3.4"
- **lens chief ray angle:** 29.48° non-linear
- **input clock frequency:** 6 - 64 MHz
- **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
- **minimum exposure:** 4 lines
- **maximum exposure:** (VTS/2-12) lines
- **sensitivity:** 3400 e-/Lux-sec
- **max S/N ratio:** 36 dB
- **dynamic range:** 62.5 dB @ 1x gain
- **scan mode:** progressive
- **image area:** 4290.05 µm x 3193.34 µm
- **die dimensions:**
  - **COB:** 5364 µm x 3627 µm
  - **RW:** 5414 µm x 3677 µm

Functional Block Diagram



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