



OV13A10

13 megapixel product brief



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.



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

Applications

- smartphones
- video conferencing
- PC multimedia

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
- 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: 0°C to +60°C junction temperature
- lens size:** 1/3.4"
- lens chief ray angle:** 29.48° non-linear
- scan mode:** progressive
- pixel size:** 1.008 µm x 1.008 µm
- image area:** 4290.05 µm x 3193.34 µm

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:
 - 4224 x 3136
 - 4224 x 2376
 - 2112 x 1568
 - 2112 x 1188
 - 1408 x 792
- 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

Functional Block Diagram

