

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 fullresolution 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

Ordering Information

 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
- active: 228 mW
 standby: 1.2 mW
- XSHUTDOWN: <20 μA

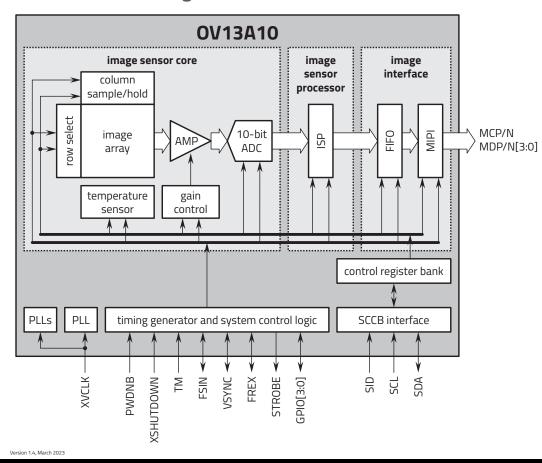
- temperature range:

 operating: -30°C to +85°C
 junction temperature
 - stable: 0°C to +60°C junction temperature
-
- lens size: 1/3.4"
- Iens 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



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