

# OV13A1Q 13MP product brief



## Ultra-Compact 13-Megapixel PureCel®Plus-S Image Sensor Brings "Super Selfies" to Next-Generation Smartphones



available in  
a lead-free  
package

The OV13A1Q is an ultra-compact 13-megapixel image sensor built on OmniVision's second-generation, 1.0-micron PureCel®Plus-S stacked die pixel technology that is designed to meet the compact form factor requirements of next-generation smartphones with edgeless displays.

The OV13A1Q supports 4-cell mode with in-pixel binning, which significantly boosts signal to deliver clear, high-quality images even in challenging lighting environments. The OV13A1Q also pairs with an advanced recovery software library for industry-leading

mobile platforms that enables full-resolution mode for high-quality 13-megapixel image capture, making it an ideal solution for "super selfie" cameras in mainstream smartphone applications.

The OV13A1Q can capture full-resolution (non-Bayer pattern) 13-megapixel, 1-micron images and video at 30 frames per second (fps) or 3-megapixel (standard Bayer pattern), 2-micron images and video at 60 fps while maintaining full field-of-view.

Find out more at [www.ovt.com](http://www.ovt.com).



## Applications

- Smartphones
- Video Conferencing
- PC Multimedia

## Product Features

- 13MP @ 30 fps, 4K2K @ 30 fps
- supports dynamic defect pixel correction (DPC) in Bayer output mode
- 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
- two on-chip phase lock loops (PLLs)
- 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
- built-in temperature sensor
- typical module size: 7.5 x 7.5 x 4.5 mm

# OV13A1Q



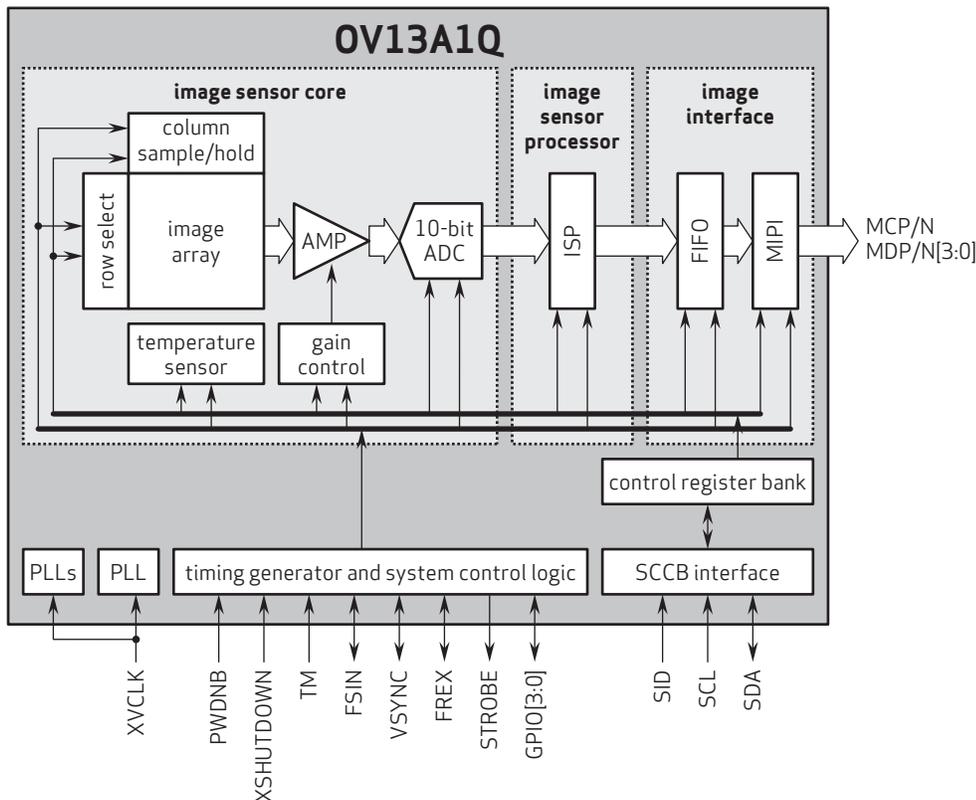
## Ordering Information

- OV13A1Q-GA5A-Z**  
(color, chip probing, 150 μm backgrinding, reconstructed wafer with good die)

## Product Specifications

- active array size:** 4224 x 3136
- lens chief ray angle:** 36.7° non-linear
- power supply:**
  - core: 1.2V
  - analog: 2.8V
  - I/O: 1.8V
- 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"
- maximum image transfer rate:**
  - 4224x3136: 30 fps
  - 4224x2376: 30 fps
  - 2112x1568: 60 fps
  - 2112x1188: 60 fps
  - 1408x792: 60 fps
- input clock frequency:** 6 - 64 MHz
- 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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