



OV16E10 16MP product brief



16MP Image Sensor Brings Top Performance and High Resolution to the Mainstream Smartphone Market



available in
a lead-free
package

The OV16E10 is the latest generation of OmniVision's high-performance 16-megapixel (MP) image sensor family. Built on its latest 1.12-micron PureCel[®]Plus stacked die technology with world-class sensitivity and QE performance, the 1/2.8-inch OV16E10 sensor comes with advanced imaging features to deliver industry-leading performance for both single- and multi-camera applications. Following the success of the previous generation OV16B10 in the high-end mobile segment, this new image sensor brings high resolution with the same excellent image quality and features to the mainstream smartphone market.

Integrated into the OV16E10 is a 2x1 Microlens phase-detection autofocus (PDAF) function, a feature previously associated only with premium smartphones. This advanced PDAF technology imparts smartphones with fast and

accurate autofocus capabilities, even in low-light conditions. Additionally, the OV16E10 is ideal for dual- and tri-camera designs, with its built-in frame rate synchronization for image fusion that simplifies multi-camera architectures. It also features a gyro interface that reads and synchronizes the motion data from an external gyroscope to enable precise image stabilization for video and still capture.

The OV16E10 supports multiple resolution configurations, including 16MP images output at 30 frames per second (fps), 4K2K video at 60 fps, 1080p video at 120 fps and 720p video at 180 fps.

Find out more at www.ovt.com.



Applications

- Mobile Smart Phones
- Security Cameras
- Smart Home / IoT Devices

Product Features

- automatic black level calibration (ABLC)
- programmable controls for:
 - frame rate
 - mirror and flip
 - binning
 - cropping
 - windowing
- support for dynamic DPC cancellation
- supports output formats:
 - 10-bit RGB RAW
- supports horizontal and vertical subsampling
- supports typical images sizes:
 - 4656 x 3496
 - 3840 x 2160
 - 1920 x 1080
 - 1280 x 720
- up to 4-lane MIPI TX interface with speed up to 1.8 Gbps/lane
- standard serial SCCB interface
- support for 2/3 trio CPHY interface (up to 1.6 Gbps/trio)
- programmable I/O drive capability
- gyro interface with 3-/4-wire SPI support
- supports 2x1 micro lens phase detection auto focus (MLPD)
- sequential multi-frame HDR
- three on-chip phase lock loops (PLLs)
- built-in temperature sensor
- typical module size: 8.5 x 8.5 x -5.5 mm

OV16E10



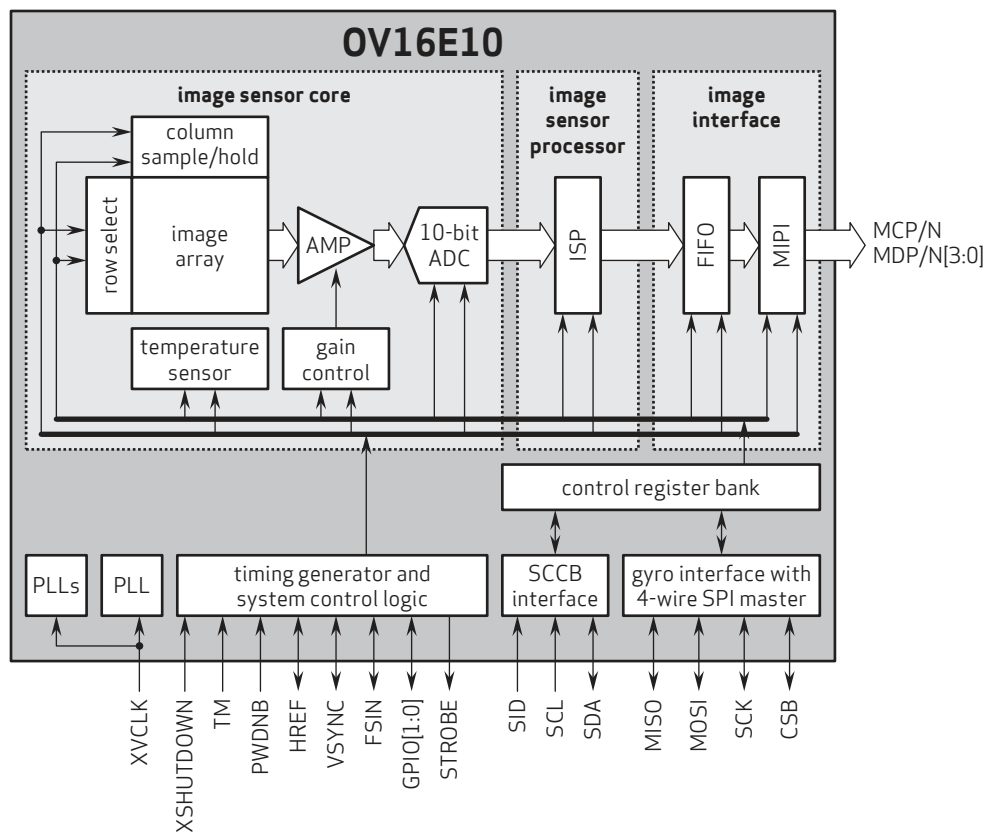
Ordering Information

- **OV16E10-GA5A**
(color, chip probing, 150 µm backgrinding, reconstructed wafer with good die)

Technical Specifications

- **active array size:** 4656 x 3496
- **maximum image transfer rate:**
 - 4656 x 3496: 30 fps
 - 3840 x 2160: 60 fps
 - 1920 x 1080: 120 fps
- **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
- **output formats:** 10-bit RGB RAW, DPCM 10-8 compression
- **lens size:** 1/2.77"
- **lens chief ray angle:** 34.5° non-linear
- **scan mode:** progressive
- **pixel size:** 1.12 µm x 1.12 µm
- **image area:** 5231.81 µm x 3937.25 µm

Functional Block Diagram



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