

# OV16885 16MP product brief



available in  
a lead-free  
package

## 16-Megapixel PureCel®Plus-S Sensor with Second-Generation 1.0-Micron Pixel for Mainstream Smartphones

OmniVision's OV16885 is a high-resolution image sensor built on OmniVision's second-generation, 1.0-micron PureCel®Plus-S pixel architecture that is well-suited for world-facing mobile cameras. The OV16885 enhances mainstream 16-megapixel resolution images and video with advanced features such as zig-zag high dynamic range (zHDR) and support for phase detection autofocus (PDAF), enabling crisp image and video details with excellent scene reproduction.

zHDR uses a long and a short exposure in a single frame to extend dynamic range capabilities of the sensors. Long and short exposure lines are diagonally interlaced across the entire pixel array in a zig-zag pattern. This

enables live preview and video recording in HDR mode and single-shot full-resolution HDR images in capture mode without any shutter lag.

Leveraging OmniVision's PureCel Plus-S stacked die technology, the OV16885 captures full-resolution 16-megapixel images and video with zHDR functionality at 30 frames per second (fps), 4K2K video at 60 fps, and 1080p at 120 fps. The OV16885 sensor fits into industry-standard module form factors for slim mobile devices.

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



## Applications

- Smartphones
- Video Conferencing
- PC Multimedia

## Product Features

- 16MP @ 30 fps, 4K2K @ 60 fps
- supports ZigZag HDR timing
- supports phase detection auto focus (PDAF)
- supports dynamic defect pixel correction (DPC)
- automatic black level calibration (ABLC)
- total embedded one-time programmable (OTP) memory: 2048 bytes, 896 bytes for customer use, remaining bytes for internal use
- supports typical images sizes:
  - 4672 x 3504
  - 3840 x 2160
  - 2336 x 1752
  - 1920 x 1080
  - 1280 x 720
  - 800 x 480
- supports horizontal and vertical subsampling
- programmable controls for:
  - frame rate
  - mirror and flip
  - cropping
  - windowing
- up to 4-lane MIPI TX interface with speed up to 1.6 Gbps/lane
- programmable I/O drive capability
- standard serial SCCB interface
- supports output formats:
  - 10-bit RAW RGB
  - DPCM 10-8 compression
- two on-chip phase lock loops (PLLs)
- built-in temperature sensor
- typical module size: 8.5 x 8.5 x 4.5 mm

# OV16885



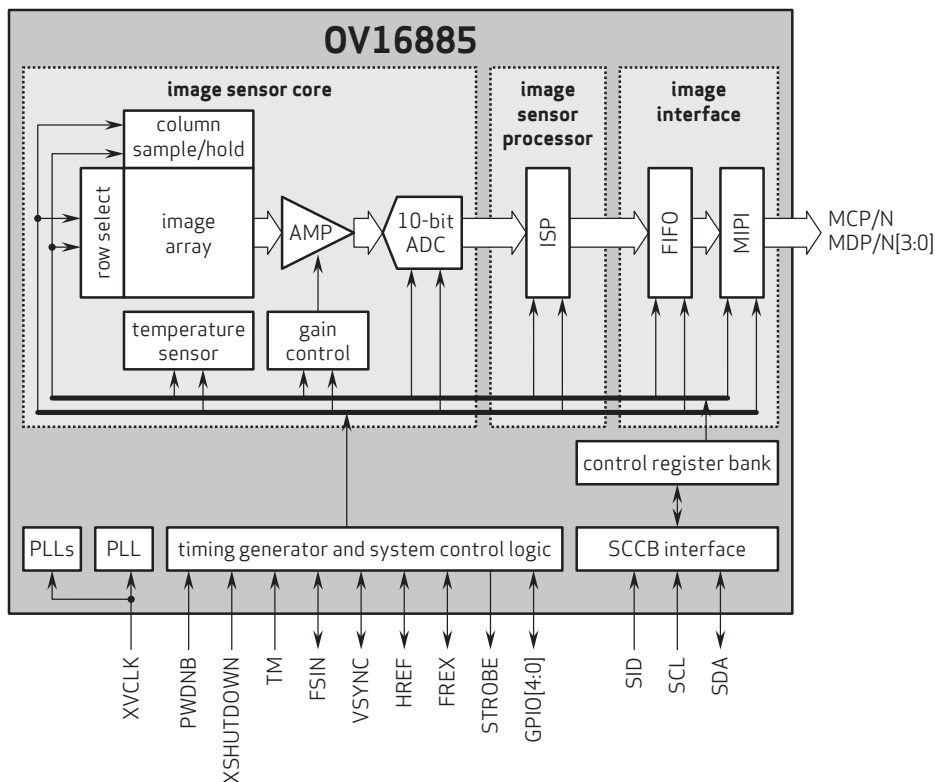
## Ordering Information

- OV16885-GA5A**  
(color, chip probing, 150 μm backgrinding, reconstructed wafer with good die)

## Product Specifications

- active array size:** 4672 x 3504
- power supply:**
  - core: 1.2V
  - analog: 2.8V
  - I/O: 1.8V
- power requirements:**
  - active: 300 mW
  - XSHUTDOWN: 1 μW
- temperature range:**
  - operating: -30°C to +85°C junction temperature
  - stable image: 0°C to +60°C junction temperature
- input clock frequency:** 6 - 27 MHz
- lens size:** 1/3.06"
- lens chief ray angle:** 34.2° non-linear
- sensitivity:** 3.2 Ke-/Lux-sec
- maximum image transfer rate:**
  - 4672 x 3504: 30 fps
  - 3840 x 2160: 60 fps
  - 2336 x 1752: 60 fps
  - 1080p: 120 fps
  - 720p: 180 fps
  - 800 x 480: 240 fps
- max S/N ratio:** 36.8 dB
- dynamic range:** 72 dB @ 16x gain
- dark current:** 4 e-/sec @ 60°C junction temperature
- scan mode:** progressive
- pixel size:** 1.0 μm x 1.0 μm
- image area:** 4741.63 μm x 3564.29 μm
- die dimensions:**
  - COB: 5690 μm x 4050 μm
  - RW: 5740 μm x 4120 μm

## Functional Block Diagram



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