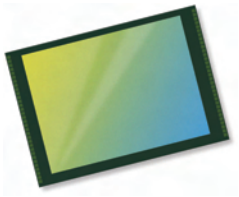


OV16885-4C 16MP product brief

16-Megapixel Second-Generation PureCel®Plus-S Sensor for Front-Facing Mobile Applications

lead free

available in a lead-free package

OmniVision's OV16885-4C is an ultra-compact image sensor built on OmniVision's second-generation, 1.0-micron PureCel®Plus-S pixel technology that is designed to bring 16-megapixel resolution to high-end front-facing mobile applications. The OV16885-4C's on-chip pixel binning feature boosts signal levels up to four times, enabling clear images even in challenging lighting environments. The OV16885-4C pairs with OmniVision's smart resolution recovery software solutions to achieve the ideal balance between resolution and sensitivity, making it a compelling solution for "super selfie" cameras in high-end mobile applications.

The OV16885-4C offers a full 16-megapixel 4-cell RAW output mode and a 4-megapixel Bayer output mode that uses in-pixel binning to achieve a 2.0-micron pixel's performance and sensitivity. The OV16885-4C captures full-resolution 16-megapixel images and video at 30 frames per second (fps) and offers both MIPI D-PHY and C-PHY interfaces.

The OV16885-4C sensor fits into the industry-standard module form factors for slim mobile devices.

Find out more at www.ovt.com.

OmniVision

OV16885-4C

Applications

- Smartphones
- Video Conferencing
- PC Multimedia

Product Features

- 16MP @ 30 fps, 4K2K @ 60 fps (1.0 µm non-Bayer output)
- 4MP @ 60 fps, 1080p @ 120 fps (2.0 µm Bayer output)
- supports dynamic defect pixel correction (DPC) in Bayer output mode
- 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 4.9 mm

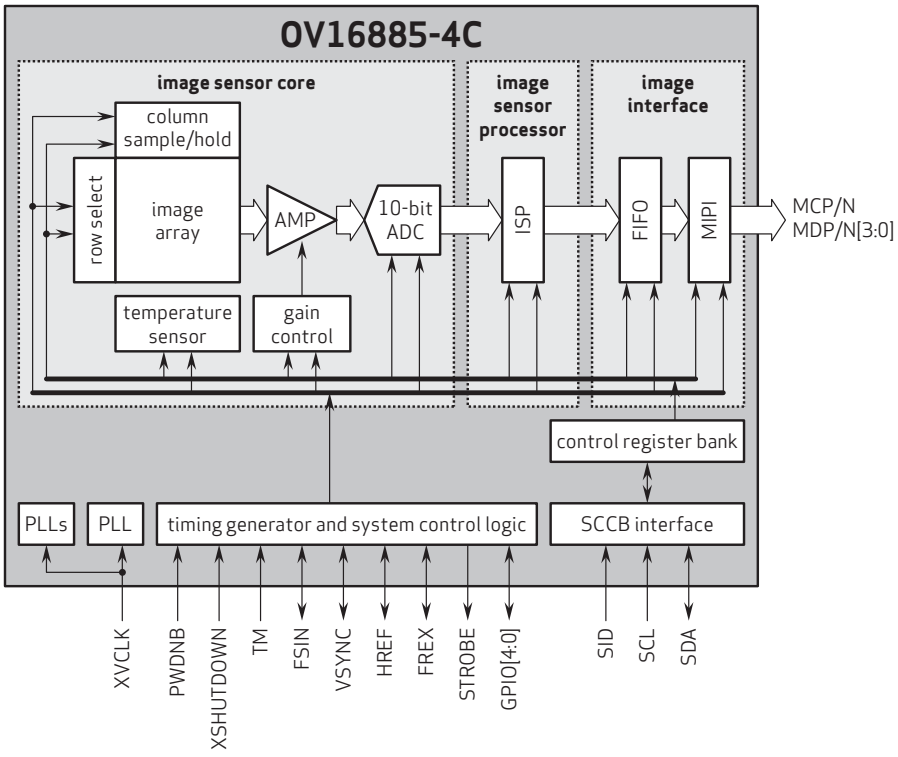
Ordering Information

- **OV16885-GA5A-4C**
  (4-cell 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:** 13.8 Ke-/Lux-sec @ 4C binning mode
- **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:** 37.5 dB @ 4C binning mode
- **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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