

# OV5675 5-megapixel product brief



## The Industry's Smallest 5-Megapixel PureCel® Sensor for Smartphones and Tablets



available in  
a lead-free  
package

OmniVision's high performance OV5675 is a 5-megapixel PureCel sensor designed to bring high quality imaging capabilities to front- and rear-facing cameras in smartphones and tablets. The industry's smallest 5-megapixel currently available, the cost-effective OV5675 offers dramatically improved image and video quality in a compact and power-efficient package.

The 1/5-inch sensor can capture full resolution 5-megapixel images in a native 4:3 aspect ratio at 30 frames per second (fps), or 720p high definition (HD) and 1080p video at 60 fps. Additionally, the OV5675 supports ultra-low power mode, which enables QVGA video recording at 30 fps while requiring less than 25 mW.

The OV5675 fits into a compact 5.5 x 5.5 x 3.5 mm module.

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



## Applications

- Smartphones and Feature Phones
- Tablets
- PC Multimedia
- Wearables

## Product Features

- 1.12  $\mu\text{m}$  x 1.12  $\mu\text{m}$  pixel
- 5MP at 30 fps
- programmable controls for:
  - frame rate
  - mirror and flip
  - cropping
  - windowing
- supports images sizes:
  - 5MP (2592x1944)
  - quad HD (2560x1440)
  - 1080p (1920x1080)
  - 720p (1280x720)
  - VGA (640x480), and more
- 260 bytes of embedded one-time programmable (OTP) memory for customer use
- support for output formats:
  - 10-bit RGB RAW
- interleave row HDR output
- two-wire serial bus control (SCCB)
- MIPI serial output interface (1- or 2-lane)
- 2x binning support
- image quality control:
  - defect pixel correction
  - automatic black level calibration

# OV5675



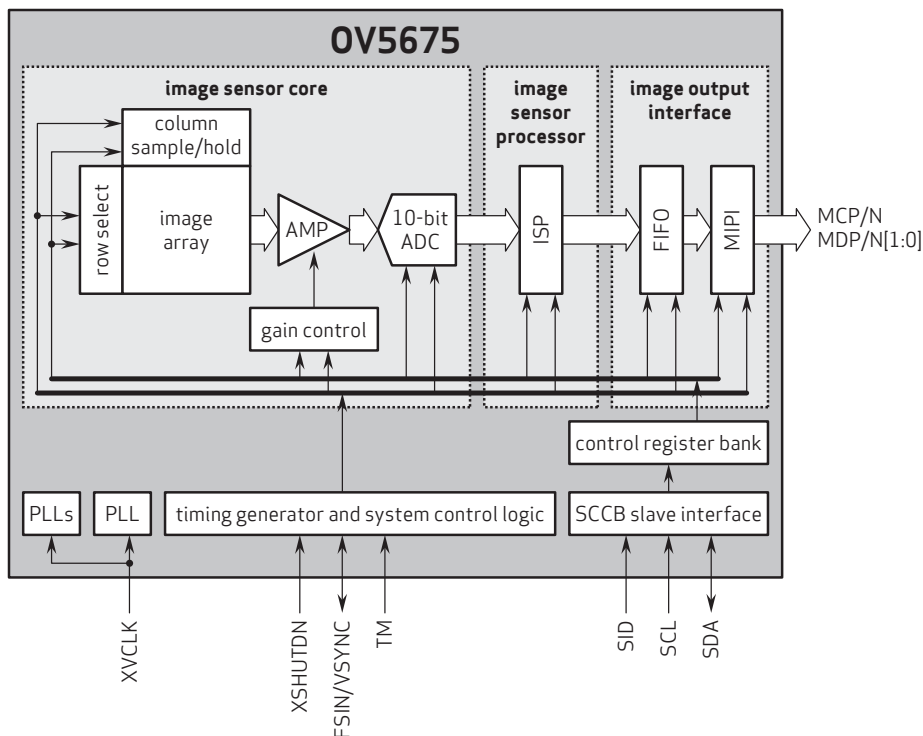
## Ordering Information

- OV05675-GA4A**  
(color, chip probing, 200  $\mu\text{m}$  backgrinding, reconstructed wafer)

## Product Specifications

- active array size:** 2592 x 1944
- power supply:**
  - core: 1.14 - 1.26V (1.2V nominal)
  - analog: 2.6 - 3.0V (2.8V nominal)
  - I/O: 1.7 - 1.9V (1.8V nominal)
- power requirements:**
  - active: 96 mW
  - standby: 165  $\mu\text{W}$
  - XSHUTDOWN: 1  $\mu\text{W}$
- temperature range:**
  - operating: -30°C to +85°C junction temperature
  - stable image: -20°C to +60°C junction temperature
- output interface:** 2-lane MIPI serial output
- output formats:** 10-bit RGB RAW
- lens size:** 1/5"
- lens chief ray angle:** 31.24° non-linear
- input clock frequency:** 6 - 27 MHz
- maximum image transfer rate:**
  - 5MP (2592x1944): 30 fps
  - quad HD (2560x1440): 30 fps
  - 1080p (1920x1080): 60 fps
  - 720p (1280x720): 60 fps
  - VGA (640x480): 120 fps
- sensitivity:** 530 mV/lux-sec
- max S/N ratio:** 35.7 dB
- dynamic range:** 69.7 dB @ 16x gain
- pixel size:** 1.12  $\mu\text{m}$  x 1.12  $\mu\text{m}$
- dark current:** 6 e<sup>-</sup>/sec @ 60°C junction temperature
- image area:** 2928.384  $\mu\text{m}$  x 2205.216  $\mu\text{m}$
- dimensions:**
  - COB: 3771  $\mu\text{m}$  x 3226.5  $\mu\text{m}$
  - RW: 3821  $\mu\text{m}$  x 3276.5  $\mu\text{m}$

## Functional Block Diagram



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