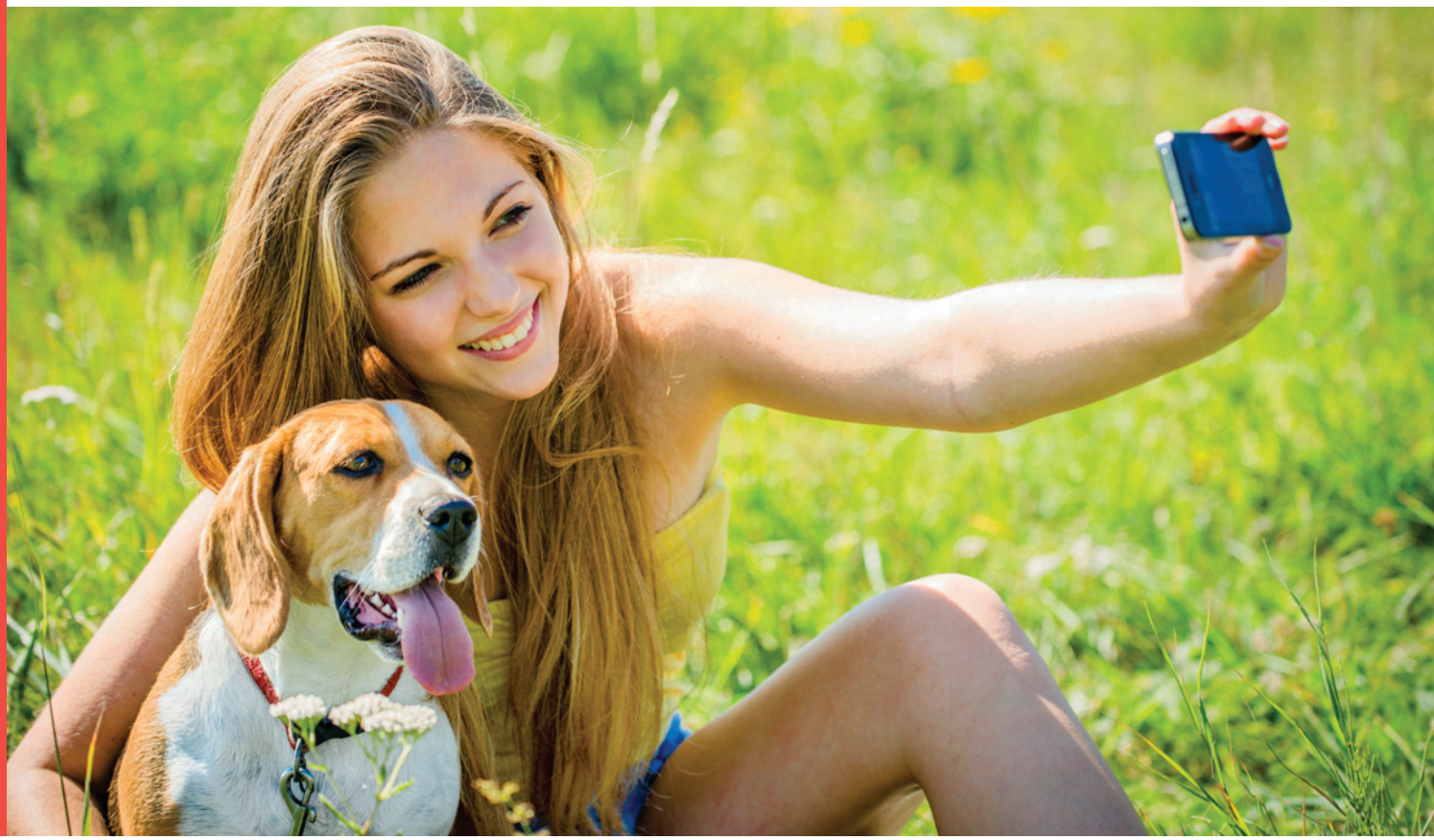


OV2680/OV2685 2MP product brief



Cost-Effective, Low-Power 2-Megapixel Sensors for Feature Phones, Smartphones and Tablets

lead free

available in a lead-free package

The OV2680 (RAW) and OV2685 (SoC) are cost-effective, low-power 2-megapixel CameraChip™ sensors for feature phones and front-facing camera applications in smartphones and tablets. The 1/5-inch sensors leverage a 1.75-micron OmniPixel3-HS™ pixel to deliver high quality 2-megapixel images and video at 30 frames per second (fps). The sensors' high sensitivity and low dark current deliver exceptional image and video quality, even in low-light conditions.

The OV2680 and OV2685 are cost-effective upgrade solutions to the OV2659 & OV2675 CameraChip sensors with a smaller footprint and smaller die size.

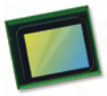
Compared to previous generations, the OV2680 and OV2685 offer improved image quality with the latest OmniPixel3-HS pixel architecture. Using OmniVision's proprietary sensor technology, both sensors reduce or eliminate common lighting and electrical sources of image contamination, such as fixed pattern noise, smearing, etc., to produce a clean, stable, color image.

The OV2680 and OV2685 both feature a single-lane MIPI interface, which allows for a simple design with modern basebands.

Find out more at www.ovt.com.

OmniVision

OV2680/OV2685



Applications

- Ultrabooks
- PC Multimedia
- Games
- Home Entertainment
- Cellular and Picture Phones
- Tablets
- Toys

Ordering Information

- **OV02680-H47A**
  (color, lead-free, 47-pin CSP5)
- **OV02685-H53A**
  (color, lead-free, 53-pin CSP5)

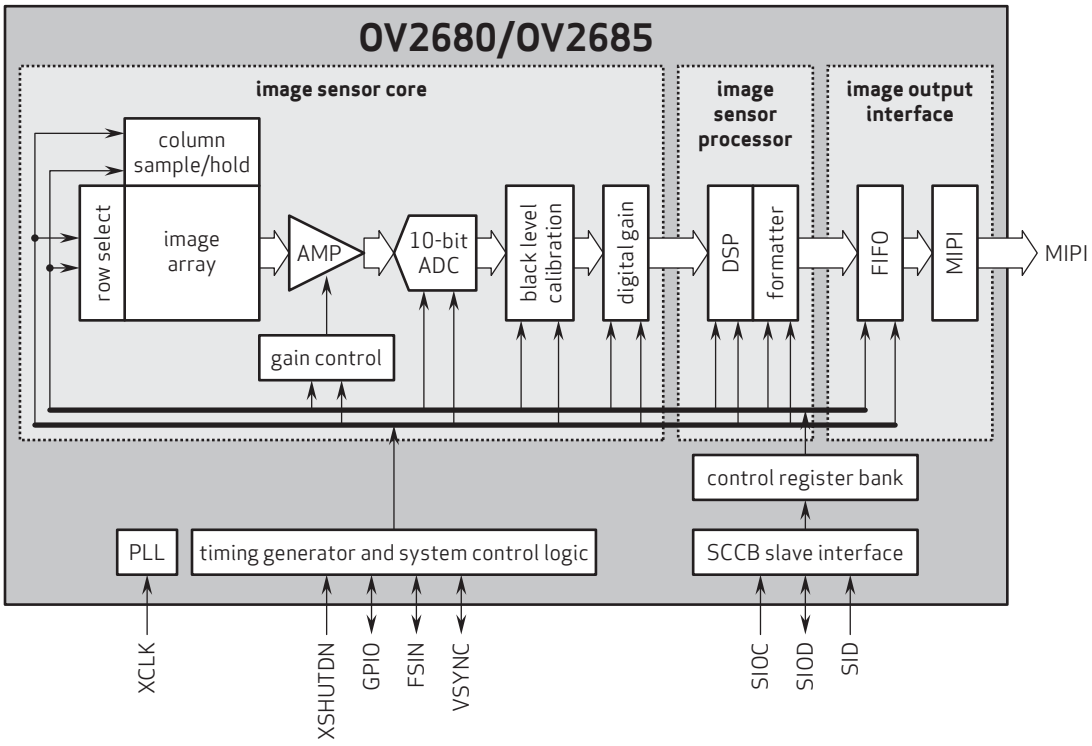
Product Features

- MIPI and D-PHY specification (contains one clock lane) with a maximum of 750 Mbps data transfer rate
- support for output formats:
  - OV2680: 10-bit RAW RGB
  - OV2685: 10-bit RAW RGB, 8-bit YUV
- programmable controls for frame rate, mirror and flip, cropping, and windowing
- low operating voltage and low power consumption for embedded portable applications
- supports global analog gain
- high sensitivity and low dark current for low-light conditions
- supports free-running clock and gated clock
- supports down-sampling and binning mode
- auto black level calibration
- defect correction capability
- supports horizontal and vertical subsampling

Product Specifications

- **active array size:** 1616 x 1216
- **power supply:**
  - **OV2680 core:** 1.58V ±3%
  - **OV2685 core:** 1.7 - 1.9V
  - **analog:** 2.6 - 3.0V
  - **I/O:** 1.7 - 3.0V
- **power requirements:**
  - **OV2680 active:** 123 mW
  - **OV2685 active:** 259 mW
  - **XSHUTDN:** <1 µA
- **temperature range:**
  - **operating:** -30°C to +85°C junction temperature
  - **stable image:** 0°C to +50°C junction temperature
- **output formats:** 10-bit RGB RAW, 8-bit YUV (OV2685)
- **lens size:** 1/5"
- **lens chief ray angle:** 28.5° non-linear
- **input clock frequency:** 6 - 27 MHz
- **maximum image transfer rate:** 30 fps
- **scan mode:** progressive
- **maximum exposure interval:** 1 frame - 4 t_{ROW}
- **pixel size:** 1.75 µm x 1.75 µm
- **image area:** 2840 µm x 2150 µm
- **package/die dimensions:**
  - **OV2680 CSP5:** 4180 µm x 3480 µm
  - **OV2685 CSP5:** 4454 µm x 4014 µm

Functional Block Diagram



4275 Burton Drive
Santa Clara, CA 95054
USA

Tel: + 1 408 567 3000
Fax: + 1 408 567 3001
www.ovt.com

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