

# OV2659 2 MP product brief



available in  
a lead-free  
package

## 2-Megapixel SOC Camera for the High-Volume Handset Market

The OV2659 addresses the increasing demand for 2-megapixel resolution cameras in the high-volume feature phones market. A high-performance system on a chip (SOC) sensor, the OV2659 delivers high-definition (HD) video and excellent low-light sensitivity for cost-sensitive applications. Based on OmniVision's 1.75-micron OmniPixel3-HS™ architecture, it achieves low-light sensitivity of 960 mV/lux-sec in a 1/5-inch optical format and ultra low profile (4 mm) that fits in an industry-standard 6.5 x 6.5 mm camera module.

The OV2659 offers advanced image signal processing delivering the quality and functionality of most high-performance DSC cameras. It includes support for 720p native HD video recording at 30 frames per second, excellent sensitivity and high quality image capture while meeting the cost, size and performance requirements of the high-volume camera phone market.

The OV2659 offers automatic image control functions, which include automatic exposure control, automatic white balance and automatic black level calibration. It also features all standard image quality controls such as color saturation, hue, gamma, sharpness (edge enhancement), lens correction, defective pixel canceling and noise canceling.

The OV2659 comes with a standard serial SCCB interface and digital video port (DVP) parallel output interface, offering support for UXGA, SVGA and 720p with programmable controls for frame rate as well as video operations.

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

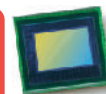
## Applications

- Mobile Phones
- Notebooks and Webcams
- Entertainment

## Product Features

- ultra low power and low cost
- automatic image control functions:
  - automatic exposure control (AEC)
  - automatic white balance (AWB)
  - automatic black level calibration (ABLC)
- programmable controls for frame rate, AEC/AGC 16-zone size/position/weight control, mirror and flip, and windowing
- image quality controls: color saturation, hue, gamma, sharpness (edge enhancement), lens correction, defective pixel canceling, and noise canceling
- support for output formats: RAW RGB, RGB565/555, YUV422, YCbCr422 and GBR422
- support for images sizes: UXGA, SVGA and 720p
- support for video operations
- support for horizontal and vertical sub-sampling, binning
- standard serial SCCB interface
- digital video port (DVP) parallel output interface
- on-chip phase lock loop (PLL)
- programmable I/O drive capability
- built-in regulator for DVDD

## OV2659



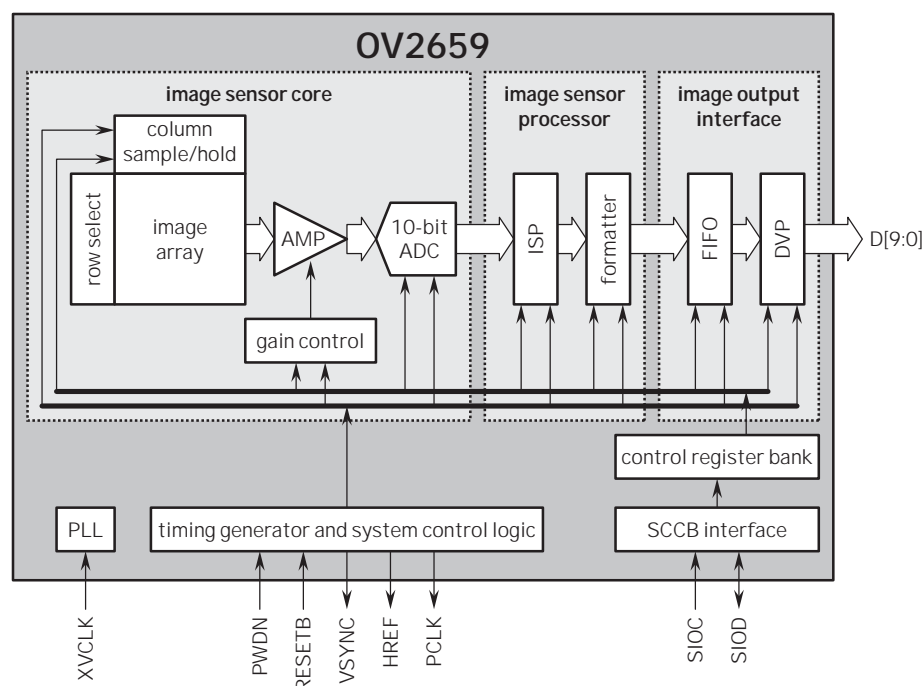
## Ordering Information

- OV02659-A47A  
(color, lead-free, 47-pin CSP3)

## Product Specifications

- active array size: 1632 x 1212
- power supply:
  - core: 1.5 VDC  $\pm$ 5%
  - analog: 2.6 - 3.0 V
  - I/O: 1.7 - 3.0 V
- power requirements:
  - active: 224 mW
  - standby: 75  $\mu$ A
- temperature range:
  - operating: -20° C to 70° C
  - stable image: 0° C to 50° C
- output formats: YUV422, YCbCr422, GBR422, RGB565/555, 8/10-bit raw RGB data
- lens size: 1/5"
- lens chief ray angle: 25.7°
- input clock frequency: 6 - 27 MHz
- S/N ratio: 36 dB
- dynamic range: 66 dB
- maximum image transfer rate:
  - UXGA (1600x1200): 15 fps
  - SVGA (800x600): 30 fps
  - 720p (1280x720): 30 fps
  - 1366 x 768: 24 fps
- sensitivity: 960 mV/lux-sec
- shutter: rolling shutter
- scan mode: progressive
- maximum exposure interval: 1228 x  $t_{row}$
- gamma correction: programmable
- pixel size: 1.75  $\mu$ m x 1.75  $\mu$ m
- well capacity: 6.3 Ke<sup>-</sup>
- dark current: 4 mV/sec @ 60°C
- fixed pattern noise: 1% of  $V_{PEAK-TO-PEAK}$
- image area: 2856  $\mu$ m x 2121  $\mu$ m
- package dimensions: 4735  $\mu$ m x 4385  $\mu$ m

## Functional Block Diagram



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