

# OV9623 1MP product brief



available in  
a lead-free  
package

## Fully Integrated, High Sensitivity Imaging Solution for Advanced Video Applications

OmniVision's OV9623 is a fully integrated, high sensitivity color CMOS system-on-chip (SOC) camera solution for advanced video imaging applications. The OV9623's 1/2.7-inch optical format delivers full resolution high definition (HD) images and video at 30 frames per second (fps). The OV9623 also supports advanced features such as high dynamic range (HDR), auto exposure, auto white balance, color correction, HDR tone mapping, and defective pixel correction.

Built on a 4.2-micron OmniPixel3-HS™ pixel, the 1-megapixel OV9623 enables best-in-class low-light sensitivity, delivering excellent scene reproduction even in demanding lighting conditions. The OV9623 offers complete user control of image quality, formatting, and output data transfer with image size options including WXGA (1280x800), 720p HD (1280x720), WVGA (752x480), and VGA (640x480).

Camera functions are programmable through a serial camera control bus (SCCB) interface, and additional features include a horizontal and vertical windowing capability, external frame sync capability, and 50/60 Hz flicker cancellation.

The OV9623 comes in a 7.795 mm x 7.145 mm chip scale package (CSP), and operates at commercial temperature grade from -30°C to +85°C.

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



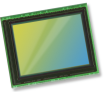
## Applications

- Security and Surveillance Cameras

## Product Features

- support for image sizes: WXGA (1280x800), HD 720p (1280x720), WVGA (752x480), VGA (640x480), 600x400, CIF (352x288), QVGA (320x240)
- support for output formats: YUV and separated and combined RAW
- parallel DVP interface
- high sensitivity
- automatic exposure/gain
- horizontal and vertical windowing capability
- auto white balance control
- aperture/gamma correction
- serial camera control bus (SCCB) for register programming
- low power consumption
- external frame sync capability
- 50/60 Hz flicker cancellation
- defective pixel correction

# OV9623



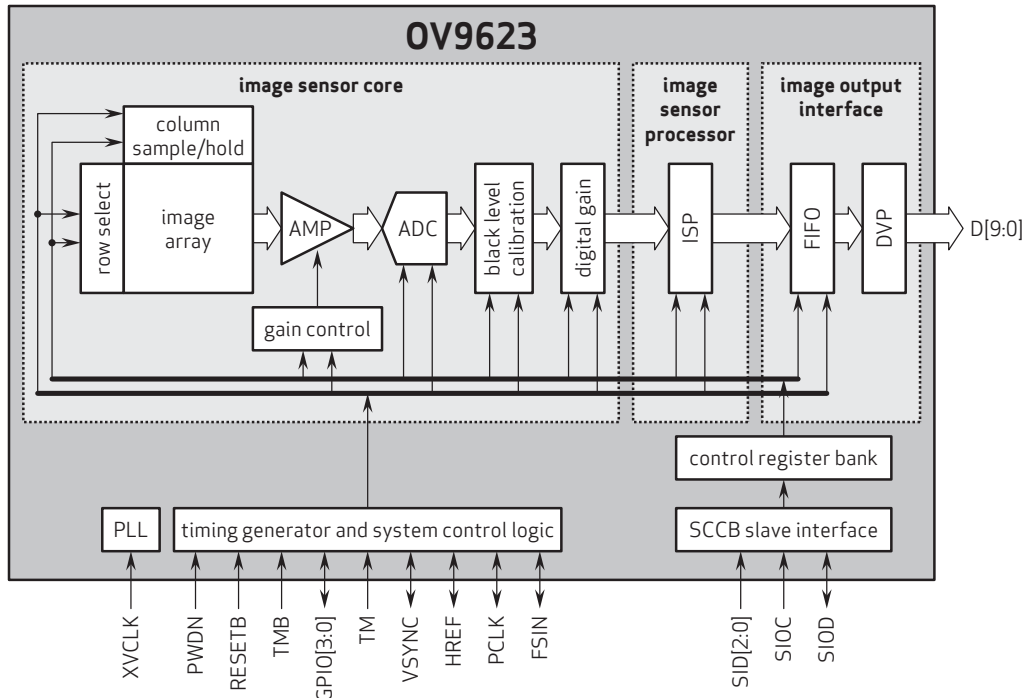
## Ordering Information

- OV09623-N29A**  
(color, lead-free, 129-pin CSP, packed in tray)

## Product Specifications

- active array size:** 1280 x 800
- lens size:** 1/2.7"
- power supply:**
  - analog: 3.14 - 3.47V
  - core: 1.425 - 1.575V
  - I/O: 1.7 - 3.47V
- power requirements:**
  - active: 507 mW typical @ 3.3V AVDD, 1.5V DVDD, and 1.8V DOVDD
  - standby: 440 μW typical @ 3.3V AVDD, 1.5V DVDD, and 1.8V DOVDD
- temperature range:**
  - operating: -30°C to +85°C junction temperature
  - stable image: 0°C to +50°C junction temperature
- output interface:** 10-bit parallel DVP
- output formats:**
  - up to 18-bit combined raw
  - separated 10-bit raw
  - 8-/10-bit YUV422
- lens chief ray angle:** 9°
- input clock frequency:** 6 - 27 MHz
- scan mode:** progressive
- shutter:** rolling shutter
- maximum exposure interval:** 838  $t_{row}$
- maximum image transfer rate:** 30 fps full resolution
- sensitivity:** 3650 mV/lux-sec
- max S/N ratio:** 39 dB
- dynamic range:** 115 dB
- pixel size:** 4.2 μm x 4.2 μm
- dark current:** 2.5 mV/s @ 50°C junction temperature
- image area:** 5510.4 μm x 3418.8 μm
- package dimensions:** 7795 μm x 7145 μm

## Functional Block Diagram



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