

# OV5623 5.17 MPixel product brief



available in  
a lead-free  
package

## high performance auto-focus module for camera phones

The OV5623 is a high-performance 5.17 megapixel CMOS CameraChip™ for digital still image, video camcorder and mobile handset products. With an optical format of only 1/2.5 inches, the OV5623 takes advantage of the compact 2.2  $\mu\text{m}$  x 2.2  $\mu\text{m}$  pixel size of the OmniPixel2™ technology, which is one of the industry's smallest pixel sizes commercially available.

OmniPixel2's proprietary new process, which is manufactured using 0.13-micron process technology, and innovative pixel design are keys to the OV5623's high dynamic range. It enables an

increased fill factor of 40 percent and more vibrant and truer-to-life color reproduction.

The OV5623 sensor is also designed with zero-gap micro-lens structures, which allows pixels to capture over 20 percent more light making more effective use of the smaller pixel's active area. Additionally, the OV5623 offers improved quantum efficiency, which optimizes image performance and gives rise to a further increased full well capacity.

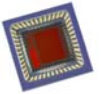
The OV5623 incorporates a 2592 x 1944 image array and a 10-bit A/D converter capable of operating at 7.5 frames per second (fps) in full resolution. The OV5623 can also operate at 60 fps at 864 x 648 resolution enabling enhanced video viewing on TV. The large image array also allows for a digital image stabilization function.

## applications

- camera/video phones



# OV5623



## ordering information

- **OV05623-G00A**  
(color, COB, no backgrinding)
- **OV05623-G02A**  
(color, COB, std backgrinding)

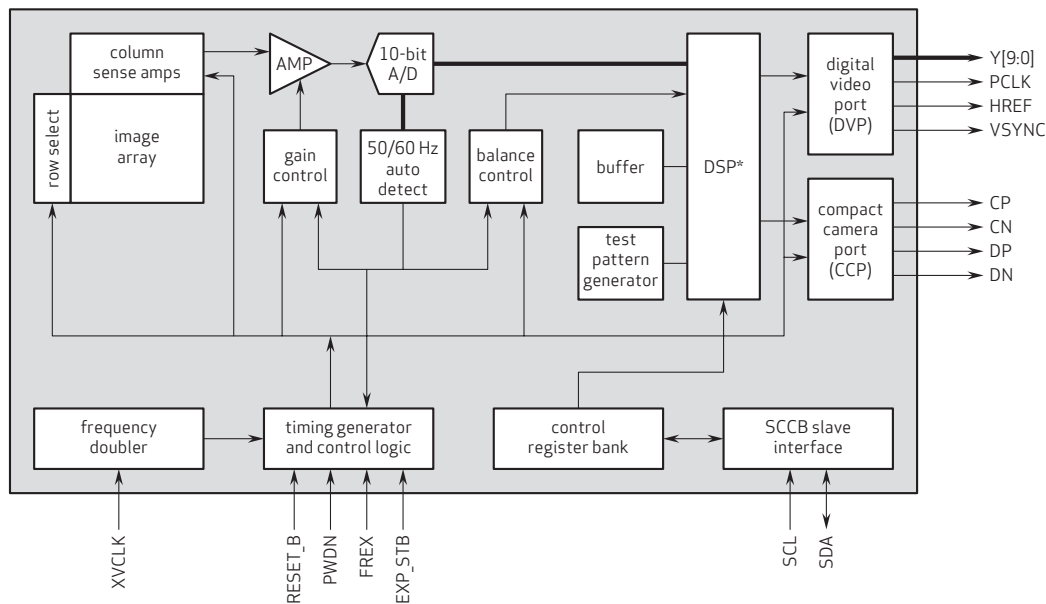
## product features

- optical black level calibration
- video or snapshot operations
- programmable/auto exposure and gain control
- programmable/auto white balance control
- horizontal and vertical subsampling for high frame rate with excellent image quality
- high frame rate output mode
- programmable image windowing
- variable frame rate control
- on-chip luminance average counter
- VarioPixel<sup>™</sup> (binning) 1:2, 1:3, 1:4, 1:6
- subsampling (skip) 1:2, 1:3, 1:4, 1:8
- flash control output (strobe pin)
- 50/60 Hz light auto detection
- image vertical flip / horizontal mirror
- defect pixel correction
- internal/external frame synchronization
- serial bus interface
- power-on reset and power-down modes

## product specifications

- **array size:** 2592 x 1944
- **power supply:**  
analog: 2.6 - 3.0V  
digital: 1.2V ± 5%
- **output format:**  
10-bit digital RGB Raw data
- **lens size:** 1/2.5"
- **maximum system clock:** 48 MHz
- **max image transfer rate:**  
full: 2592 x 1944  
SXGA: 1280 x 960  
D1: 720 x 480  
VGA: 640 x 480
- **chief ray angle:** 23 - 25°
- **pixel size:** 2.2 μm x 2.2 μm
- **standard module size:**  
14 x 14 x 8.75mm

## functional block diagram



**note 1** DSP\* (white/black pixel correction, etc.)

5623\_PB\_001

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