

# OV10823 4K2K product brief



## Ultra-High Resolution CameraChip™ Sensor for the Next Generation of Feature-Rich Security and Surveillance Systems



available in  
a lead-free  
package

OmniVision's OV10823 CameraChip™ sensor brings best-in-class light sensitivity, outstanding high dynamic range (HDR) and wide field-of-view (FOV) to high-end security and surveillance applications. The sensor's ability to capture ultra-high resolution images and video enables a host of features for the next generation of surveillance systems, including crowd faction recognition, video analytics and highly detailed video zoom.

The 1/2.6-inch OV10823 uses advanced 1.4-micron OmniBSI-2™ pixel architecture to capture full-resolution 10.5-megapixel (4320 x 2432 pixels) video at 30 fps

and ultra-high resolution 4K2K video at 30 fps. In addition to capturing ultra-high definition video, the OV10823 supports 720p HD video with up to 3x zoom with no moving lenses.

The OV10823 fits into a 7.63 x 5.98 mm chip scale package (CSP), making the security industry's smallest image sensor capable of recording 4K2K video. It features a high-speed 4-lane MIPI interface to facilitate the required high data transfer rate.

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



## Applications

- Security and Surveillance

## Product Features

- 1.4  $\mu\text{m}$  x 1.4  $\mu\text{m}$  pixel with OmniBSI-2™
- optical size of 1/2.6"
- programmable controls for frame rate, mirror and flip, cropping, windowing, and panning
- image quality controls: black level calibration
- support for output formats: 10-bit RAW RGB data and DPCM 10-8 compression
- support for video or snapshot operations
- support 1x2 binning, 2x2 binning
- temperature sensor
- standard serial SCCB interface
- up to 4-lane MIPI serial output interface
- 12K bits of embedded one-time programmable (OTP) memory
- two on-chip phase lock loop (PLL)
- programmable I/O drive capability
- support for black sun cancellation

# OV10823



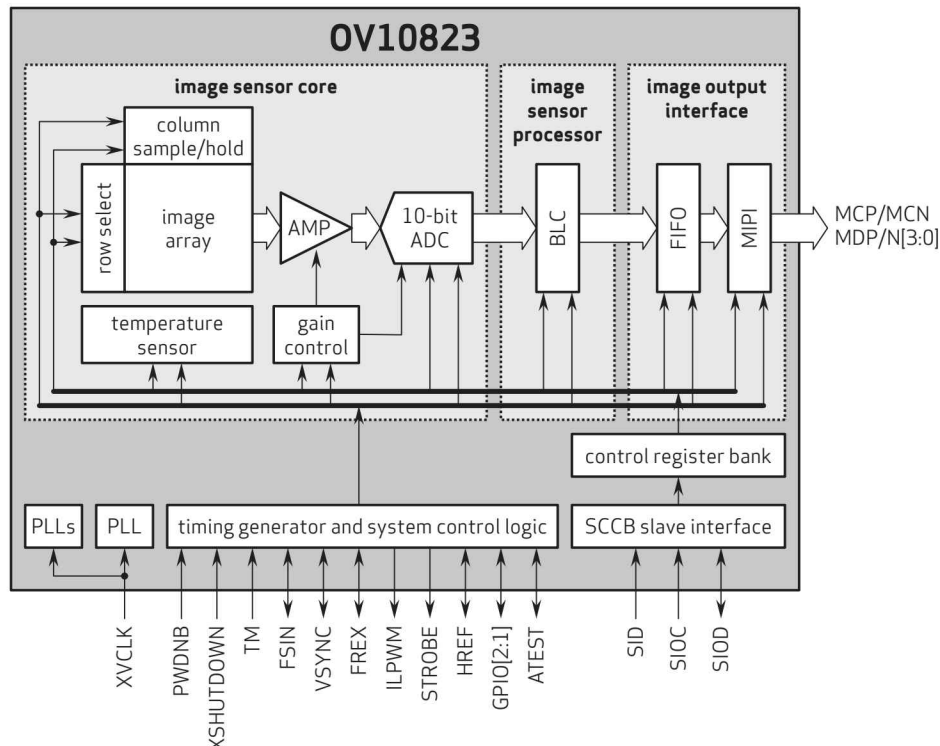
## Ordering Information

- OV10823-H75A  
(color, lead-free, 75-pin CSP5)

## Product Specifications

- active array size:** 4320 x 2432
- power supply:**
  - core: 1.2V  $\pm$ 5%
  - analog: 2.7 - 3.0V
  - I/O: 1.7 - 3.0V
- power requirements:**
  - active: 296 mW
  - standby: 200  $\mu\text{A}$
  - XSHUTDOWN: 5  $\mu\text{A}$
- temperature range:**
  - operating: -30°C to +70°C junction temperature
  - stable image: 0°C to +60°C junction temperature
- output formats:** 10-bit RAW RGB data and DPCM 10-8 compression
- lens size:** 1/2.6"
- lens chief ray angle:** 0°
- input clock frequency:** 6 - 27 MHz
- maximum exposure interval:** 1 frame - 4 T<sub>line</sub>
- maximum image transfer rate:**
  - 10.5MP (4320x2432): 30 fps
  - 2.6MP (2160x1216): 60 fps
- scan mode:** progressive
- shutter:** rolling shutter
- sensitivity:** 1010 mV/lux-sec @ 530 nm
- max S/N ratio:** 36.4 dB
- dynamic range:** 71.5 dB @ 8x gain
- pixel size:** 1.4  $\mu\text{m}$  x 1.4  $\mu\text{m}$
- dark current:** 10 e<sup>-</sup>/s @ 60°C junction temperature
- image area:** 6092.8  $\mu\text{m}$  x 3449.6  $\mu\text{m}$
- die dimensions:** 7630  $\mu\text{m}$  x 5980  $\mu\text{m}$

## Functional Block Diagram



4275 Burton Drive  
Santa Clara, CA 95054  
USA

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

OmniVision reserves the right to make changes to their products or to discontinue any product or service without further notice. OmniVision, the OmniVision logo and VarioPixel are registered trademarks of OmniVision Technologies, Inc. CameraChip and OmniBSI-2 are trademarks of OmniVision Technologies, Inc. All other trademarks are the property of their respective owners.



OmniVision