



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



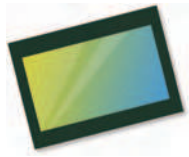
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# OS02A1Q 2-megapixel product brief



## Ultra Low-Light Performance for Professional-Grade Security Cameras



available in  
a lead-free  
package

OmniVision's high-performance OS02A1Q is a native 16:9 big pixel image sensor for high-end professional security cameras. Utilizing OmniVision's PureCel® technology, the OS02A1Q delivers high-resolution video with optimized low-light performance to enable downstream analytics for facial recognition and a host of advanced features, including night vision.

The OS02A1Q captures 1080p full high definition (FHD) video at up to 60 frames per second (fps) with staggered two-exposure high dynamic range (HDR), which is widely supported by back-end image signal

processors (ISPs). The sensor's large 4-micron PureCel pixel and a 1/2-inch optical format ensure high-quality color images and video in both high- and low-light conditions.

The sensor also features a 11-degree chief ray angle (CRA) to accommodate many wide field-of-view and fisheye lenses.

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



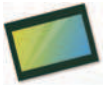
## Applications

- Security Cameras
- High Resolution Consumer Cameras
- Action Cameras
- Digital Video Camcorders (DVC)

## Product Features

- 4  $\mu\text{m}$  x 4  $\mu\text{m}$  pixel
- optical size of 1/2"
- programmable controls for:
  - frame rate
  - mirror and flip
  - cropping
  - windowing
- supports output formats:
  - 12-/10-bit RAW RGB
- standard serial SCCB interface
- 12-bit ADC
- up to 4-lane MIPI/LVDS serial output interface (supports maximum speed up to 1500 Mbps/lane)
- 2-exposure staggered HDR support
- programmable I/O drive capability
- light sensing mode (LSM)
- PLL with SCC support
- support for FSIN

# OS02A1Q



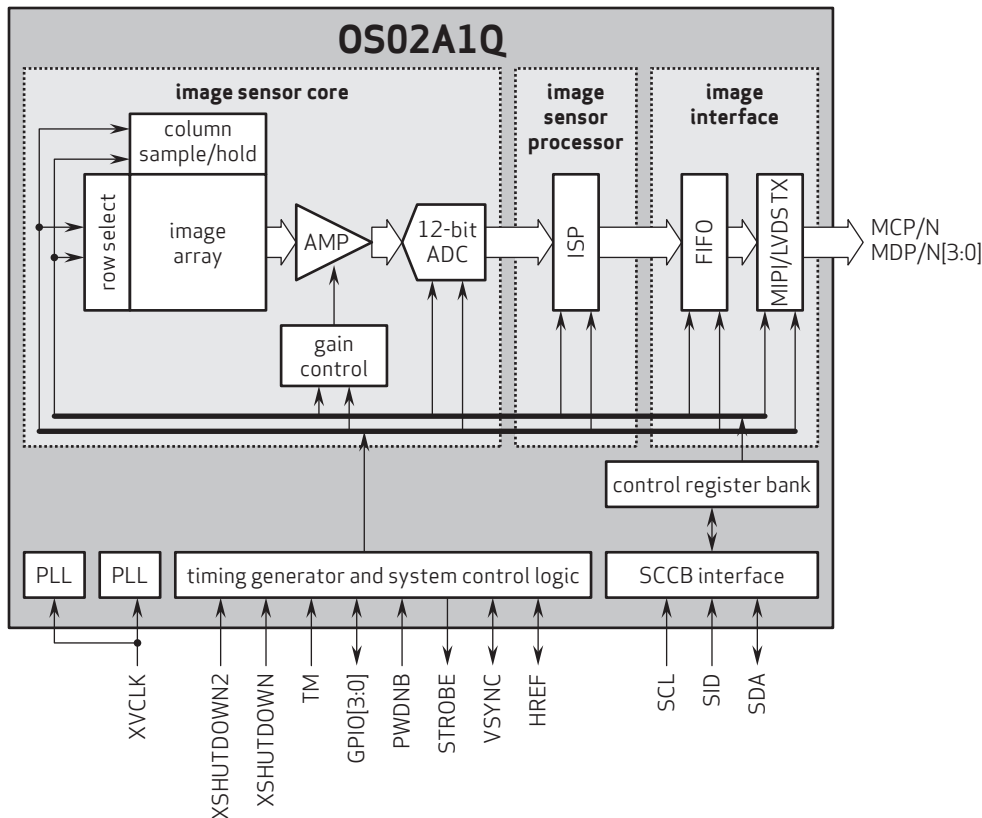
## Ordering Information

- OS02A1Q-H92A-Z (color, lead-free, 92-pin CSP)

## Product Specifications

- active array size: 1920 x 1080
- power supply:
  - core: 1.2V
  - analog: 2.8V
  - I/O: 1.8V
- power requirements:
  - active: 221 mW
  - standby: 210  $\mu\text{A}$
  - XSHUTDOWN: 0.6  $\mu\text{A}$
- temperature range:
  - operating: -30°C to +85°C junction temperature
  - stable image: 0°C to +60°C junction temperature
- output formats: 10/12-bit RGB RAW
- lens size: 1/2"
- input clock frequency: 6 - 27 MHz
- lens chief ray angle: 11° linear
- maximum image transfer rate:
  - 1080p (with HDR): 60 fps
  - 1080p (without HDR): 120 fps
- sensitivity: 51884 e-/Lux-sec
- scan mode: progressive
- maximum exposure interval: 1112 x t<sub>row</sub>
- pixel size: 4.0  $\mu\text{m}$  x 4.0  $\mu\text{m}$
- image area: 7736  $\mu\text{m}$  x 4379  $\mu\text{m}$
- package dimensions: 8939  $\mu\text{m}$  x 6340  $\mu\text{m}$

## Functional Block Diagram



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