



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

# OS02A1Q



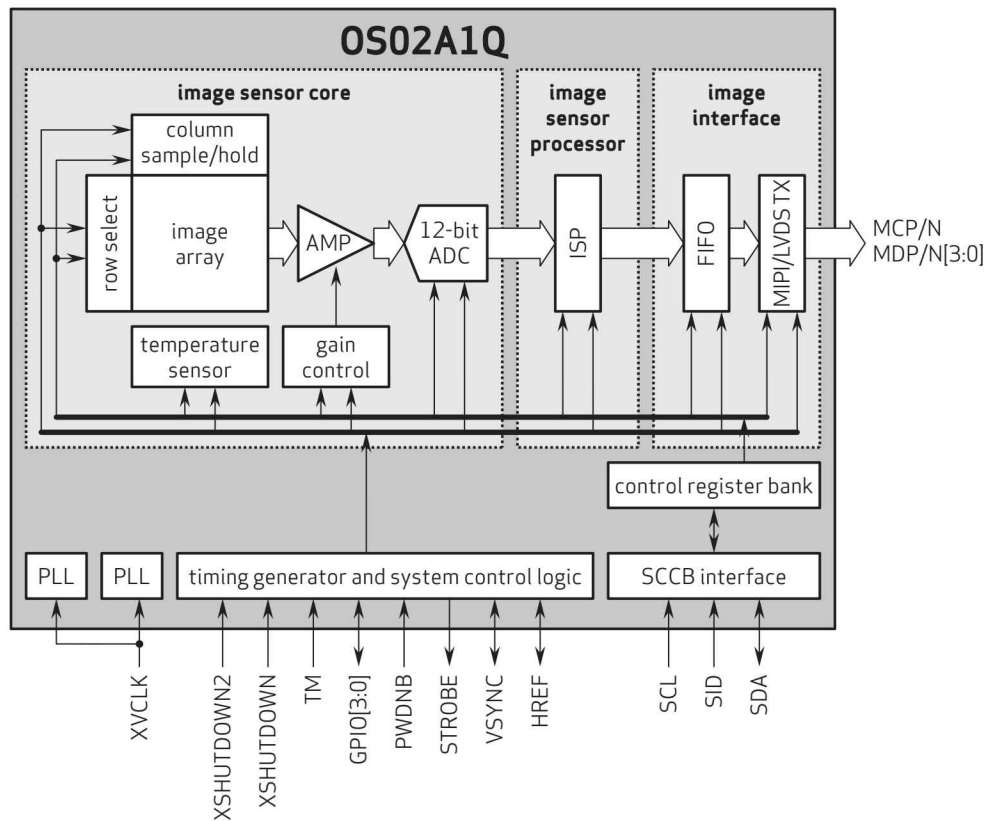
## Ordering Information

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

## Product Specifications

- active array size: 1920 x 1080
- maximum image transfer rate:
  - 1080p (with HDR): 60 fps
  - 1080p (without HDR): 120 fps
- power supply:
  - core: 1.2V
  - analog: 2.8V
  - I/O: 1.8V
- power requirements:
  - active: 240 mA
  - XSHUTDOWN: <10  $\mu\text{A}$
- 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"
- lens chief ray angle: 11° linear
- scan mode: progressive
- pixel size: 4.0  $\mu\text{m}$  x 4.0  $\mu\text{m}$
- image area: 7736  $\mu\text{m}$  x 4379  $\mu\text{m}$

## Functional Block Diagram



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