

OS02A1Q_{2-megapixel} product brief



available in
a lead-free
package

Ultra Low-Light Performance for Professional-Grade Security Cameras

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.



Applications

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

Product Features

- 4 μm x 4 μm 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



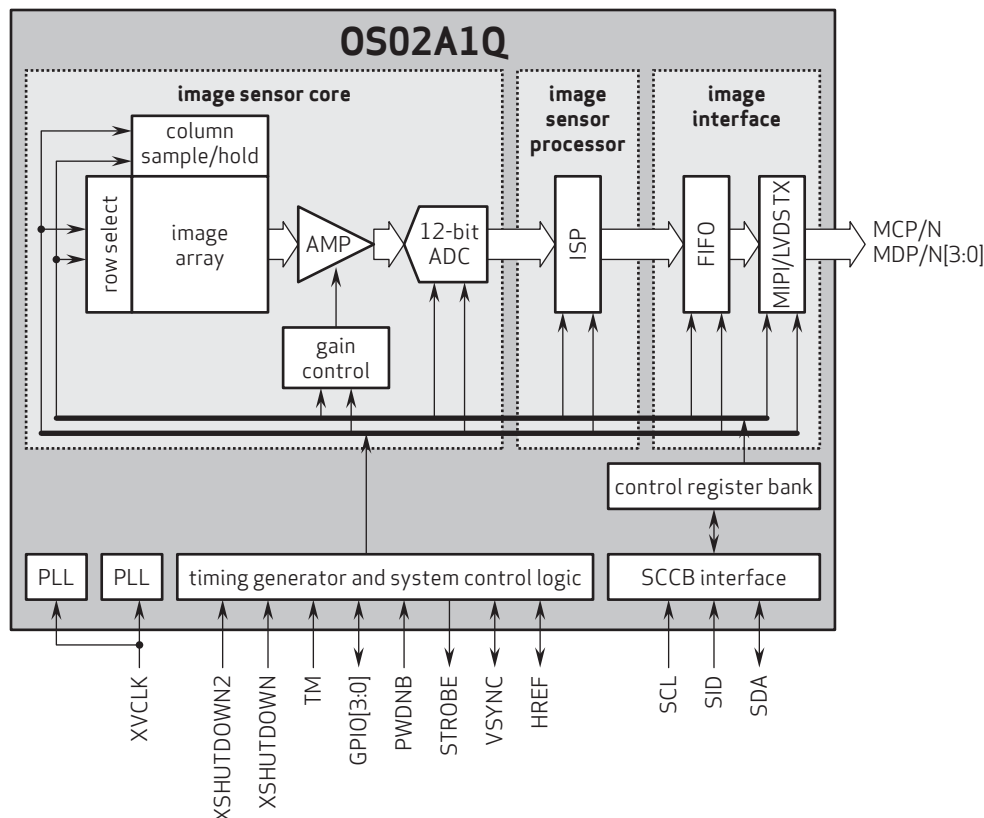
Ordering Information

- 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 μA
 - XSHUTDOWN: 0.6 μA
- 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: $1112 \times t_{\text{row}}$
- pixel size: 4.0 μm x 4.0 μm
- image area: 7736 μm x 4379 μm
- package dimensions: 8939 μm x 6340 μm

Functional Block Diagram



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