

# OV02C 2-megapixel product brief



available in  
a lead-free  
package

## Industry's Smallest 1080p Full HD Image Sensor for High Performance Video Communication in Thin Bezel Notebooks and Tablets

OmniVision's OV02C is a 1/7-inch, 2 megapixel image sensor for full high definition (HD) video performance in thin bezel premium notebooks, tablets and IoT devices. The OV02C is a full-featured image sensor that combines superior video performance and ultra-low power in a miniature size for high screen-to-body ratio designs. The sensor combines smaller pixel size and high resolution in the smallest form factor, enabling the most vivid quality video and image capabilities. The sensor offers 60 frames per second (fps) and excellent pixel performance in the thinnest 3 mm module Y size for high screen-to-body ratio designs.

Built on OmniVision's PureCel®Plus-S stacked die technology, the OV02C enables high functionality in the smallest die size. This next-generation pixel technology also provides higher color fidelity and excellent low light

sensitivity, along with a high signal-to-noise ratio of 37.5 dB for crisper images. Additionally, PureCel®Plus-S provides higher full well capacity, zero blooming and lower power consumption.

The OV02C's "Always On" feature senses user presence in ultra-low-power mode and the system can be locked and woken up touchlessly, extending the lifetime of the battery. The OV02C also supports multi-camera synchronization and multi-frame HDR at 30 fps real time video streaming.

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



**OmniVision**

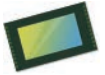
## Applications

- Notebooks/PC
- Tablets, Detachables, and 2-in-1s
- Wearables
- Smartphones and Feature Phones

## Product Features

- 1.116  $\mu\text{m}$  x 1.116  $\mu\text{m}$  pixel
- optical size of 1/7.25"
- 34° CRA
- 2MP at 60 fps
- programmable controls for:
  - frame rate
  - mirror and flip
  - cropping
  - windowing
- supports images sizes:
  - 2MP (1920x1080)
  - 720p (1280x720)
  - VGA (640x480), and more
- support for output formats:
  - 8-bit or 10-bit RGB RAW
- two-wire serial bus control (SCCB)
- MIPI serial output interface (1-lane or 2-lane) / 2-wire serial output
- two on-chip phase lock loops (PLLs)
- 2x binning support
- image quality controls:
  - defect pixel correction
  - automatic black level calibration
- suitable for module size of 4 mm x 3.5 mm x 2 mm

# OV02C



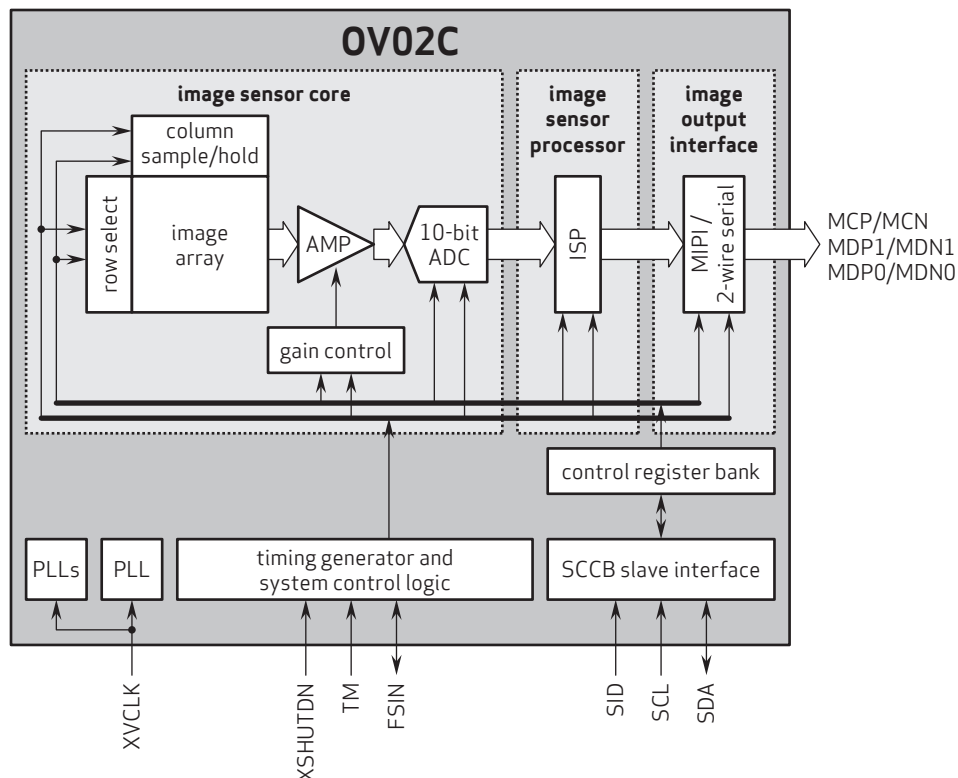
## Ordering Information

- OV02C10-GA5A-001A-Z (color, chip probing, 150  $\mu\text{m}$  backgrinding, reconstructed wafer)
- OV02C10-A20A-001A-Z (color, lead-free) 20-pin CSP
- OV02C1B-GA5A-001A-Z (b&w, chip probing, 150  $\mu\text{m}$  backgrinding, reconstructed wafer)
- OV02C1B-A20A-001A-Z (b&w, lead-free) 20-pin CSP

## Technical Specifications

- active array size: 1920 x 1080
- maximum image transfer rate:
  - 2MP (1920x1080): 60 fps
  - 2x2 binning RGB (640x480): 60 fps
  - 2x2 binning b&w (640x480): 60 fps
- power supply:
  - analog: 2.7 - 3.0V (2.8V nominal)
  - core: 1.14 - 1.26V (1.2V nominal)
  - I/O: 1.7 - 1.9V (1.8V nominal)
- power requirements:
  - active: 82.2 mW
  - standby: 0.5  $\mu\text{A}$
  - XSHUTDN: 2  $\mu\text{A}$
- output interfaces:
  - 1-lane or 2-lane MIPI serial output / 1-lane 2-wire serial interface
- temperature range:
  - operating: -30°C to +85°C junction temperature
  - stable: 0°C to +60°C junction temperature
- output formats:
  - 8/10-bit RGB RAW MIPI, 8-bit in 2-wire serial interface
- lens size: 1/7.25"
- lens chief ray angle: 34° non-linear
- shutter: rolling shutter
- pixel size: 1.116  $\mu\text{m}$  x 1.116  $\mu\text{m}$
- image area: 2160.576  $\mu\text{m}$  x 1223.136  $\mu\text{m}$

## Functional Block Diagram



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