

OV02K10 2-megapixel product brief



2.9 μm Image Sensor Enables High-Quality, Low-Light Video for Smartphones



available in
a lead-free
package

OmniVision's OV02K is a video-centric, 2.9 μm 1080p image sensor designed for smartphones. Built on our PureCel®Plus pixel technology, the OV02K allows the secondary camera in multi-camera configurations to capture high-quality videos, even in very low ambient light conditions. With the increasing demand from smartphone users for high-quality video, particularly for social media sharing, the OV02K is perfect for capturing super-high-quality video captures even in a wide variety of environments.

The OV02K's 2.9 μm pixel size imparts it with greater sensitivity and very low noise, resulting in an SNR10 of less than 10 lux. This sensor, which comes in a 1/2.8" optical format, features 1080p resolution at up to 120 frames per second (fps), suitable for either standard or slow-motion video capture. It also supports up to three exposures of staggered timing to enable high dynamic range (HDR), and supports frame-to-frame dual conversion gain (DCG).

Find out more at www.ovt.com.



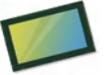
Applications

- Mobile Smartphones
- Dual Cameras
- Action / IoT cameras

Product Features

- support for image size:
 - 1920 x 1080
 - VGA
 - QVGA, and any cropped size
- high dynamic range
- high sensitivity
- programmable conversion gain
- image sensor processor functions:
 - defective pixel cancelation
 - automatic black level correction, etc.
- pixel data: 12b RAW RGB
- SCCB for register programming
- programmable GPIOs
- high speed serial data transfer with MIPI CSI-2 or LVDS
- external frame synchronization capability
- embedded temperature sensor
- one time programmable (OTP) memory

OV02K10



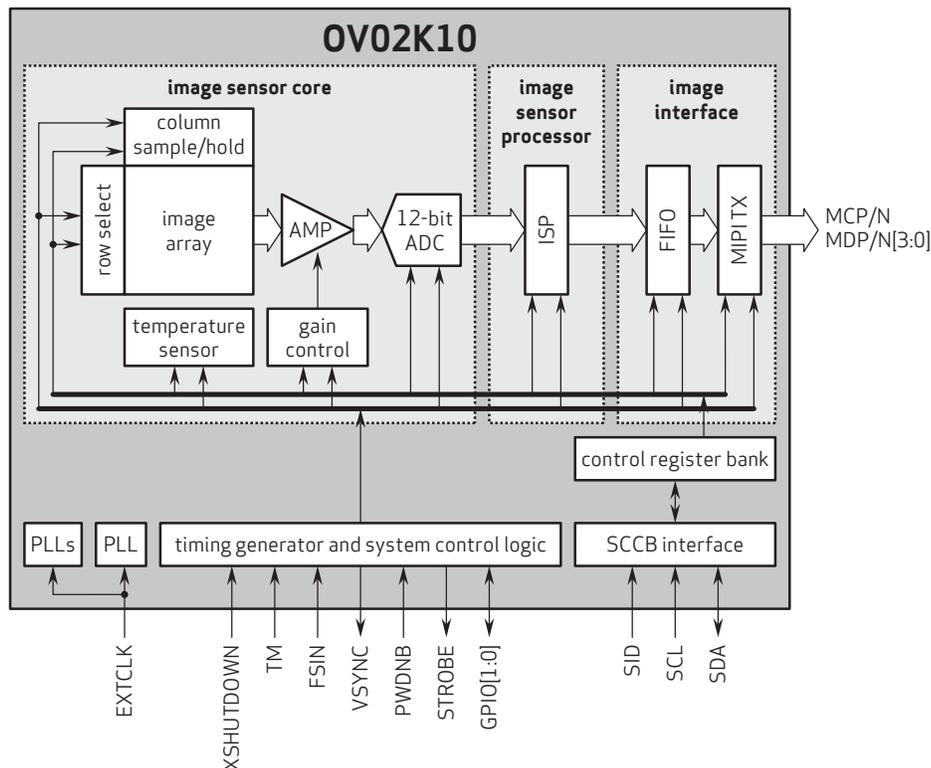
Ordering Information

- **OV02K10-GA5A-Z**
(color, chip probing, 150 μm backgrinding, reconstructed wafer with good die)

Product Specifications

- **active array size:** 1920 x 1080
- **power supply:**
 - analog: 2.8V
 - digital: 1.1V
 - I/O pads: 1.8V
- **temperature range:**
 - operating: -30°C to +85°C junction temperature
- **output interfaces:** up to 4-lane MIPI CSI-2 or LVDS
- **input clock frequency:** 6 - 36 MHz
- **lens size:** 1/2.8"
- **lens chief ray angle:** 35.5°
- **SCCB speed:** up to 1 MHz
- **scan mode:** progressive
- **shutter:** rolling shutter
- **output formats:**
 - linear output
 - dual exposure HDR (long and short)
 - 3-exposure HDR (long, short, and very short)
 - conversion gain programmable in each channel
- **maximum image transfer rate:**
 - 40X3 fps @ 1080p in 10-bit
 - 30X3 fps @ 1080p in 12-bit
- **sensitivity:** 32,000 $e^-/\text{Lux}\cdot\text{sec}$ (green pixel response at 530 nm illumination)
- **dynamic range:** >120 dB
3-exposure staggered HDR
- **pixel size:** 2.9 μm x 2.9 μm
- **image array area:** 5614.4 μm x 3178.4 μm
- **die dimensions:**
 - COB: 6708 μm x 4188 μm
 - RW: 6758 μm x 4238 μm

Functional Block Diagram



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