



# OS04D10

## 4-megapixel product brief



### High-Performance, Low-Power 2K 4-Megapixel Image Sensor for Consumer Security and Surveillance Cameras

The OS04D is a 4-megapixel (MP) image sensor that brings 2K resolution digital images and high-definition (HD) video at 30 frames per second (fps) to IP and HD analog security cameras, including smart home, doorbell and baby monitoring devices. The OS04D CMOS image sensor utilizes a high-performance backside-illuminated (BSI) pixel while also providing 40% power consumption savings, as well as improvements of over 30% in signal-to-noise ratio (SNR1) and 40% in sensitivity when compared with its predecessor.

The OS04D image sensor's 2.0-micron ( $\mu\text{m}$ ) BSI pixel is based on OMNIVISION's PureCel®Plus technology and enables higher sensitivity, ultra-low noise and better overall image quality. Select conversion gain (SCG) allows the sensor

to flexibly select low and high conversion gain depending on the lighting conditions. On-chip auto explorer control (AEC) and auto gain control (AGC) further accelerate system-on-chip (SoC) booting time. Low power consumption is beneficial for battery operated devices, especially doorbell security cameras. It comes in a cost-effective 1/3-inch optical format and is pin-to-pin compatible with OMNIVISION's OS04L image sensor as well as other new products that will be launched in the future.

The OS04D supports MIPI interfaces.

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



- OS04D10-A44A-001A (color, lead-free)  
44-pin CSP

## Applications

- security surveillance systems
- IP cameras
- HD analog cameras

## Technical Specifications

- active array size:** 2560 x 1440
- maximum image transfer rate:**
  - 2568 x 1448: 30 fps
- power supply:**
  - analog: 2.8V
  - I/O: 1.8V
  - core: 1.2V
- power requirements:**
  - active: ~88 mW
  - standby: 5  $\mu$ A
- output interfaces:**
  - 10-bit 2-lane MIPI
- temperature range:**
  - operating: -30°C to +85°C junction temperature
  - stable: 0°C to +60°C junction temperature
- output formats:** 10-bit RAW RGB
- lens size:** 1/3"
- lens chief ray angle:** 12° linear
- pixel size:** 1.998  $\mu$ m x 1.998  $\mu$ m
- image area:** 5130.864  $\mu$ m x 2893.104  $\mu$ m

## Product Features

- programmable controls:**
  - frame rate
  - mirror and flip
  - cropping
  - windowing
- supports 2x2 color binning function**
- support for output format:** 10-bit 2-lane MIPI TX
- SCCB control interface for register programming**
- supports MIPI serial output interface (1-lane/2-lane)**
- dynamic DPC**
- supports image sizes:**
  - 2568 x 1448 @ 30 fps
- supports automatic black level calibration**
- supports multi-camera synchronous function**
- supports fast boot function**

## Functional Block Diagram

