OV01D1R

1-megapixel product brief

OV01D1R Image Sensor Is a Single Intelligent Sensor for Presence Detection, Facial Recognition and Always-On

The new OV01D1R intelligent CMOS image sensor is the first sensor for the computing industry to address human presence detection (HPD), infrared (IR) facial authentication and always-on (AON) technology with a single sensing camera – while retaining low power consumption and operating independently from the laptop's physical privacy shutter.

The OV01D1R features an innovative mono-IR color filter array combined with an HPD capability in a single sensing camera. Based on PureCel® pixel technology, the OV01D1R is a RAW 1-megapixel (MP), low-power (4.7 mW @ 3 fps) image sensor in a 1/6.13-inch optical format. It delivers 1280 x 720 resolution at 30 frames per second (fps). Applications for the new sensor include cameras embedded into notebooks, tablets, monitors, webcams, as well as doorbell and home security cameras.

The OV01D1R is available for sampling now, and will be in mass production in Q4 2024.

Find out more at www.ovt.com.

OMNIVISION®

OV01D1R

Ordering Information

- **OV01D1R-A24A-001A-Z** (mono, lead-free)
  24-pin CSP

Applications

- cellular phones
- PC multimedia
- tablets

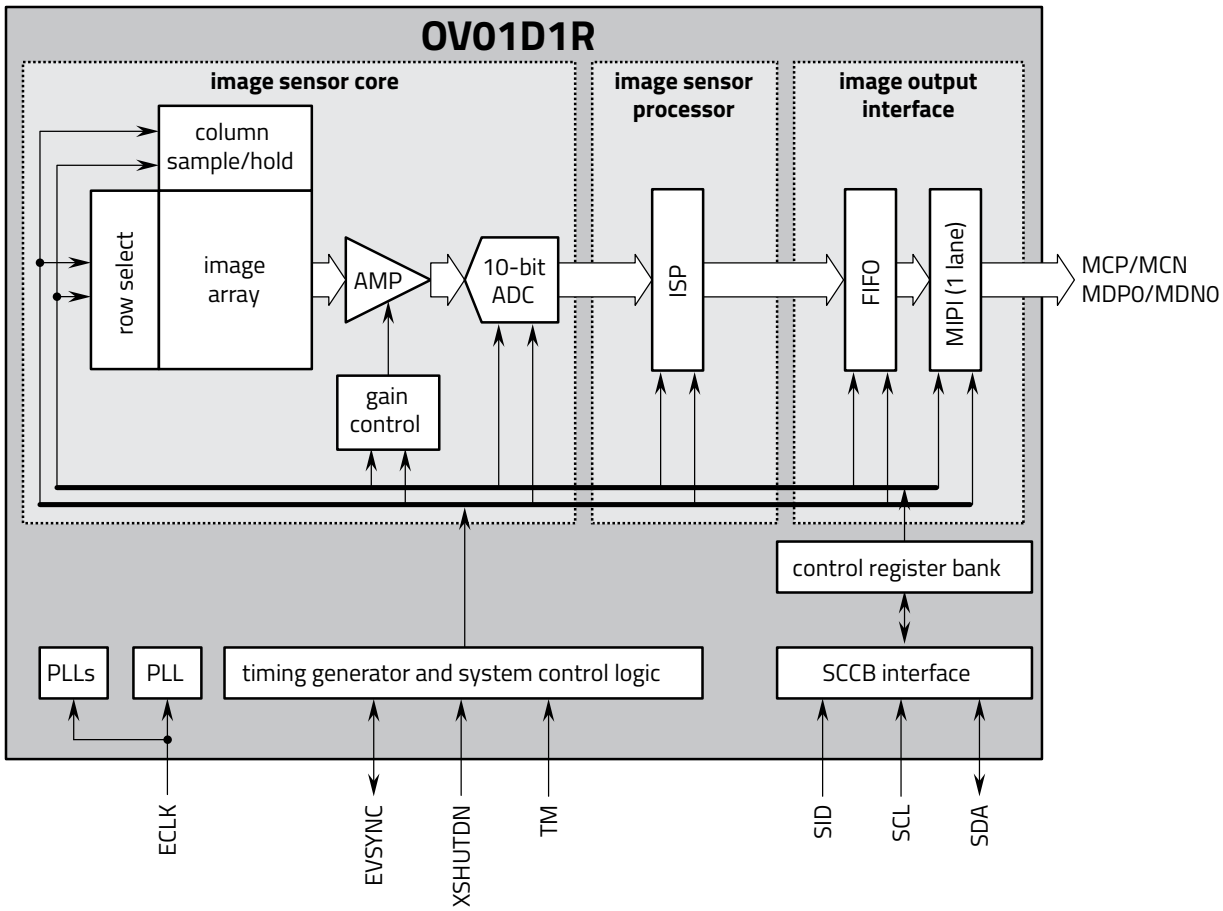
Product Features

- supports image size: 1MP (1280 x 720)
- programmable controls for:
  - frame rate
  - mirror and flip
  - cropping
  - windowing
- supports output formats:
  - 10-bit mono RAW (normal mode)
  - 8-bit mono RAW (Always-On mode)
- two on-chip phase lock loops (PLLs)
- two-wire serial bus control (SCCB)
- 2k bits of embedded one-time programmable (OTP) memory
- image quality control:
  - static defect pixel correction
  - automatic black level calibration
- supports multi-camera synchronization function
- supports motion detection
- slave SCCB interface for sensor setting with max of 1 MHz with ECLK of 12 MHz

Technical Specifications

- **active array size:** 1288 x 728
- **maximum image transfer rate:**
  - full size (mono+IR): 1280 x 720 @ 30 fps
  - 2C1_binning (mono+IR): 1280 x 360 @ 30 fps
  - 2C1_binning (IR): 640 x 360 @ 30 fps
- **power supply:**
  - analog: 2.8V (2.7~3.0V)
  - I/O: 1.2V (1.14V~1.32V) / 1.8V (1.62V~1.98V)
  - core: 1.2V (1.14V~1.32V)
- **temperature range:**
  - operating: -30°C to +85°C junction temperature
  - stable: 0°C to +60°C junction temperature
- **output interfaces:** 1-lane MIPI TX (supports maximum speed up to 1 Gbps/lane)
- **output formats:**
  - 10-bit RAW (normal mode)
  - 8-bit RAW (Always-On mode)
- **lens size:** 1/6.13"
- **lens chief ray angle:** 36.44°
- **pixel size:** 1.998 µm x 1.998 µm
- **image area:** 2573.424 µm x 1454.544 µm

Functional Block Diagram



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