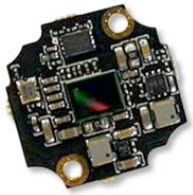


OX01F10 1.3MP product brief

SoC Offers Rear and Surround View Cameras Industry's Best Low-Light Performance, Lowest Power and Smallest Size

lead free

available in a lead-free package

OmniVision's OX01F10 is a 1.3MP SoC, providing automotive designers with the industry's best imaging performance across a wide range of challenging lighting conditions, along with the most compact form factor and lowest power consumption. In a single, 1/4" optical format package, the OX01F10 integrates a 3.0 micron image sensor and an advanced image signal processor (ISP) with OmniVision's PureCel®Plus technology for low noise, solving the automotive rear view camera (RVC) and surround view system (SVS) challenges of achieving a small form factor with excellent low-light performance, ultra-low power and reduced cost while improving reliability by using only one printed circuit board (PCB).

This SoC employs dual conversion gain (DCG) technology to achieve high dynamic range with only two captures, as opposed to three required by the competition, which minimizes motion artifacts while reducing power consumption and boosting low-light performance.

The OX01F10 power consumption is 30% lower than competitors and significantly reduces the temperature. It does not require a metal heat sink, allowing for the use of plastic camera module bodies to reduce costs. With its compact package size, it also enables smaller cameras that can fit in much tighter spaces. In addition, by integrating both the image sensor and ISP into a single chip, designers can save on both cost and space by eliminating the second PCB in typical two-chip implementations.

This SoC provides 1.3MP resolution and a 1340 x 1020 array size at 30 fps, offering ample resolution for calibration. It also enables output flexibility with both 2-lane MIPI and 10-bit DVP interfaces, and is AEC-Q100 Grade 2 certified.

Find out more at www.ovt.com.

OmniVision

OX01F10

Applications

- 360° Surround View System
- Rear View Cameras

Product Features

- support for image size:
  - 1340 x 1020 and any cropped size
- high dynamic range
- high sensitivity
- dual conversion gain
- ASIL-B safety feature
- image sensor process functions:
  - AEC/AGC/AWB
  - lens correction
  - defective pixel correction
  - HDR combination
  - tone mapping
  - automatic black level correction
- supported output formats:
  - YUV
  - RGB888
  - BT656
  - RAW
- SPI master for loading settings
- 50/60 Hz flicker cancellation
- SCCB for register programming
- programmable GPIOs
- high speed serial data transfer with MIPI CSI-2 or DVP
- external frame synchronization capability
- embedded temperature sensor
- one-time programmable (OTP) memory

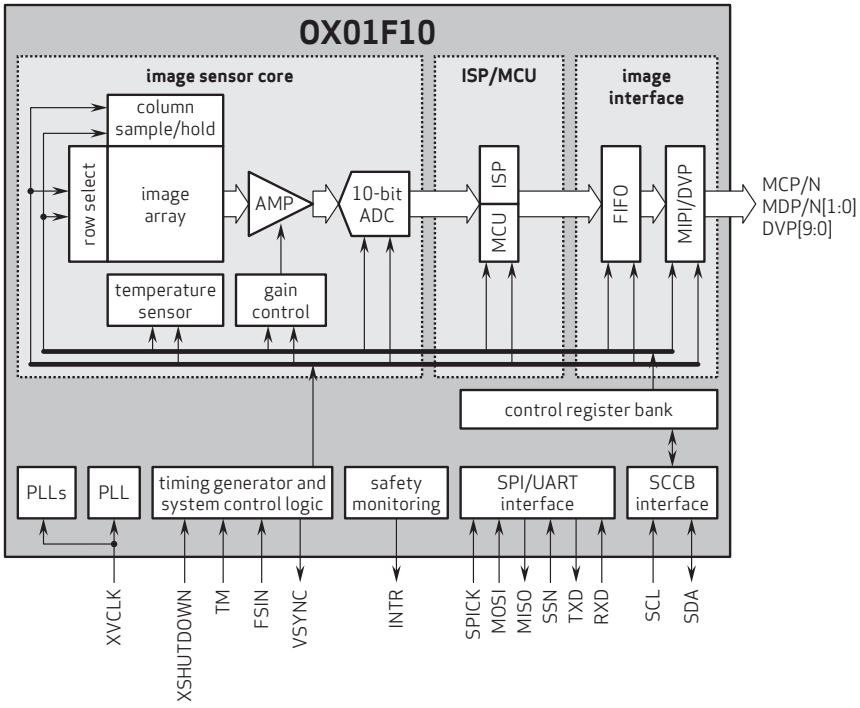
Ordering Information

- **OX01F10-E48Y-1D** (color, lead-free) 48-pin a-CSP™, rev 1D, packed in tray without protective film
- **OX01F10-E48Y-LD** (color, lead-free) 48-pin a-CSP™, rev 1D, packed in tray with 3 mm protective film (tab top left)
- **OX01F10-E48Y-0D** (color, lead-free) 48-pin a-CSP™, rev 1D, packed in tape and reel with 3 mm protective film

Technical Specifications

- **active array size:** 1340 x 1020
- **maximum image transfer rate:** 30 fps @ 1340 x 1020 in 10-bit
- **power requirements:**
  - **active:** 335 mW/315 mW (streaming 1340 x 1020 @ 30 fps YUV DVP/MIPI typical), 315 mW/300 mW (streaming 1280 x 960 @ 30 fps YUV DVP/MIPI typical), 270 mW/260 mW (streaming 1280 x 720 @ 30 fps YUV DVP/MIPI typical)
- **power supply:**
  - **analog:** 3.3V
  - **digital:** 1.1V
  - **I/O pins:** 1.8V or 3.3V
- **temperature range:**
  - **operating:** -40°C to +105°C sensor ambient temperature and -40°C to +125°C junction temperature
- **output interfaces:** up to 2-lane MIPI CSI-2 and 96 MHz parallel clock
- **lens size:** 1/3.55" for 1340 x 1020 image size
- **lens chief ray angle:** 20° linear
- **scan mode:** progressive
- **shutter:** rolling shutter
- **output formats:** linear output, dual exposure HDR (long and short), 3-exposure HDR (long, short, and very short)
- **pixel size:** 3 µm x 3 µm
- **image area:** 4080 µm x 3108 µm

Functional Block Diagram



4275 Burton Drive
Santa Clara, CA 95054
USA

Tel: + 1 408 567 3000
Fax: + 1 408 567 3001
www.ovt.com

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