

OX01A10 1.3MP product brief



available in
a lead-free
package

High Dynamic Range Image Sensor with LED Flicker Reduction for Automotive Vision Systems

OmniVision's OX01A10 is a high-performance image sensor designed for the next-generation display-based camera monitoring systems for automotive applications. Built on OmniVision's 4.2 μm OmniBSI™ split-pixel technology for exceptional high dynamic range (HDR), the OX01A10 offers best-in-class low-light performance and the industry's leading LED flicker-reduction solution.

The OX01A10 achieves 110 dB high dynamic range while guaranteeing LED pulse capture. This allows the automotive cameras to simultaneously capture bright and dark scenes, providing excellent performance in the

most demanding lighting conditions. The OX01A10 supports 1280 x 1080 resolution in a 1:1.2 aspect ratio at 60 frames per second (fps), making it ideally suited for e-Mirror applications.

Additionally, the sensor's on-chip combination algorithm reduces the output data rate for easier data transition and back-end processing. The OX01A10 comes in a 7.4 x 7.2 mm AEC-Q100 Grade 2 qualified automotive chip-scale package (a-CSP™).

Find out more at www.ovt.com.



Applications

- Automotive
 - Camera Monitoring System
 - 360° Surround View System
 - Rear View Camera
 - Lane Departure Warning / Lane Keep Assist
 - Blind Spot Detection
- Night Vision
 - Pedestrian Detection
 - Traffic Sign Recognition
 - Occupant Sensor
 - Autonomous Driving
 - E-Mirror

Product Features

- AEC-Q100 grade 2 qualified
- support for image size:
 - 1280 x 1080
 - VGA
 - QVGA and any cropped size
- OmniHDR™-S technology
- high sensitivity
- safety features
- low power consumption
- image sensor processor functions:
 - automatic exposure/gain control
 - lens correction
 - defective pixel cancellation
 - HDR combination and tone mapping
 - automatic black level correction
- supported output formats:
 - RAW
- horizontal and vertical sub-sampling
- serial camera control bus (SCCB) for register programming
- high speed serial data transfer with MIPI CSI-2, parallel 12-bit DVP output
- external frame synchronization capability
- support for LED flicker reduction (LFR) function

OX01A10



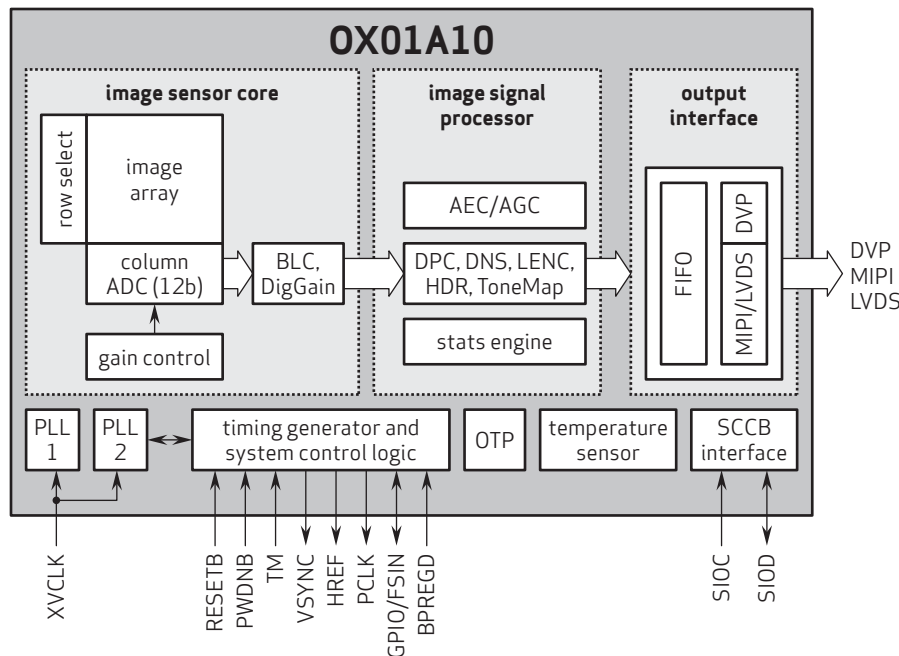
Ordering Information

- **OX01A10-E79Y-PD** (color, lead-free)
78-pin a-CSP™ with dual coated AR glass, packed in tray with protective film
- **OX01A10-E79Y-RD** (color, lead-free)
78-pin a-CSP™ with dual coated AR glass, packed in tape & reel with protective film

Product Specifications

- **active array size:** 1280 x 1080
- **power supply:**
 - analog: 3.14 - 3.47V
 - digital: 1.425 - 1.65V
 - DVDD: 1.7 - 1.9V
 - AVDD: 1.7 - 1.9V
- **power requirements:**
 - active: 360 mW
 - standby: 100 µW
- **temperature range:**
 - operating: -40°C to +105°C sensor ambient temperature and -40°C to +125°C junction temperature
- **output interfaces:** 12-bit DVP, MIPI/LVDS CSI-2
- **input clock frequency:** 6 - 27 MHz
- **lens size:** 1/2.56"
- **lens chief ray angle:** 9°
- **output formats:**
 - 20-bit combined RAW
 - 12-bit compressed combined RAW
 - separated 12-bit RAW
 - 2x12 bit compressed RAW
 - 16-bit log domain combined RAW
- **scan mode:** progressive
- **shutter:** rolling shutter
- **maximum image transfer rate:**
 - full resolution: 60 fps
- **sensitivity:** 8.4 V/Lux-scc
- **max S/N ratio:** 41.5 dB
- **dynamic range:** 110 dB
- **pixel size:** 4.2 µm x 4.2 µm
- **image area:** 5410 µm x 4570 µm
- **package dimensions:**
 - a-CSP™: 7430 µm x 7190 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

OmniVision reserves the right to make changes to their products or to discontinue any product or service without further notice. OmniVision, the OmniVision logo, and OmniHDR are registered trademarks of OmniVision Technologies, Inc. OmniBSI and a-CSP are trademarks of OmniVision Technologies, Inc. All other trademarks used herein are the property of their respective owners.



OmniVision