



# OX01E20

## 1.3 megapixel product brief



### Automotive Industry's Best Imaging Performance SoC for Surround and Rear View Cameras

OX01E20 is a 1.3 megapixel (MP) system-on-chip (SoC) for automotive 360-degree surround view systems (SVS) and rear-view cameras (RVC). The OX01E20 brings top-of-the-line simultaneous LED flicker mitigation (LFM) and 140 db high dynamic range (HDR) capabilities to the OMNIVISION product portfolio of automotive single-chip image sensor and signal processor solutions.

The OX01E20 provides the industry's best imaging performance for SVS and RVC across a range of challenging lighting conditions, along with the most compact form factor and lowest power consumption. In a single 1/4-inch optical

format a-CSP™ package, the OX01E20 features a 3-micron image sensor, an advanced image signal processor (ISP), and full-featured distortion correction/perspective correction (DC/PC) and on-screen display (OSD), enabling designers to achieve a small form factor with excellent low-light performance and reduced cost, while also improving reliability by using only one printed circuit board.

The OX01E20 is built on OMNIVISION's PureCel®Plus architecture.

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



# OX01E20

## Ordering Information

- OX01E20-E48Y-001A-Z (color, lead-free) 48-pin a-CSP™, packed in tray without protective film
- OX01E20-E48Y-000A-Z (color, lead-free) 48-pin a-CSP™, rev 1A, packed in tape and reel with 3.05 mm protective film (tab top left)
- OX01E20-E48Y-000B-Z (color, lead-free) 48-pin a-CSP™, rev 1B, packed in tape and reel with 3.05 mm protective film (tab top left)
- OX01E20-E48Y-000C-Z (color, lead-free) 48-pin a-CSP™, rev 1C, packed in tape and reel with 3.05 mm protective film (tab top left)

## Applications

- automotive
  - 360° surround view system
  - rear view camera

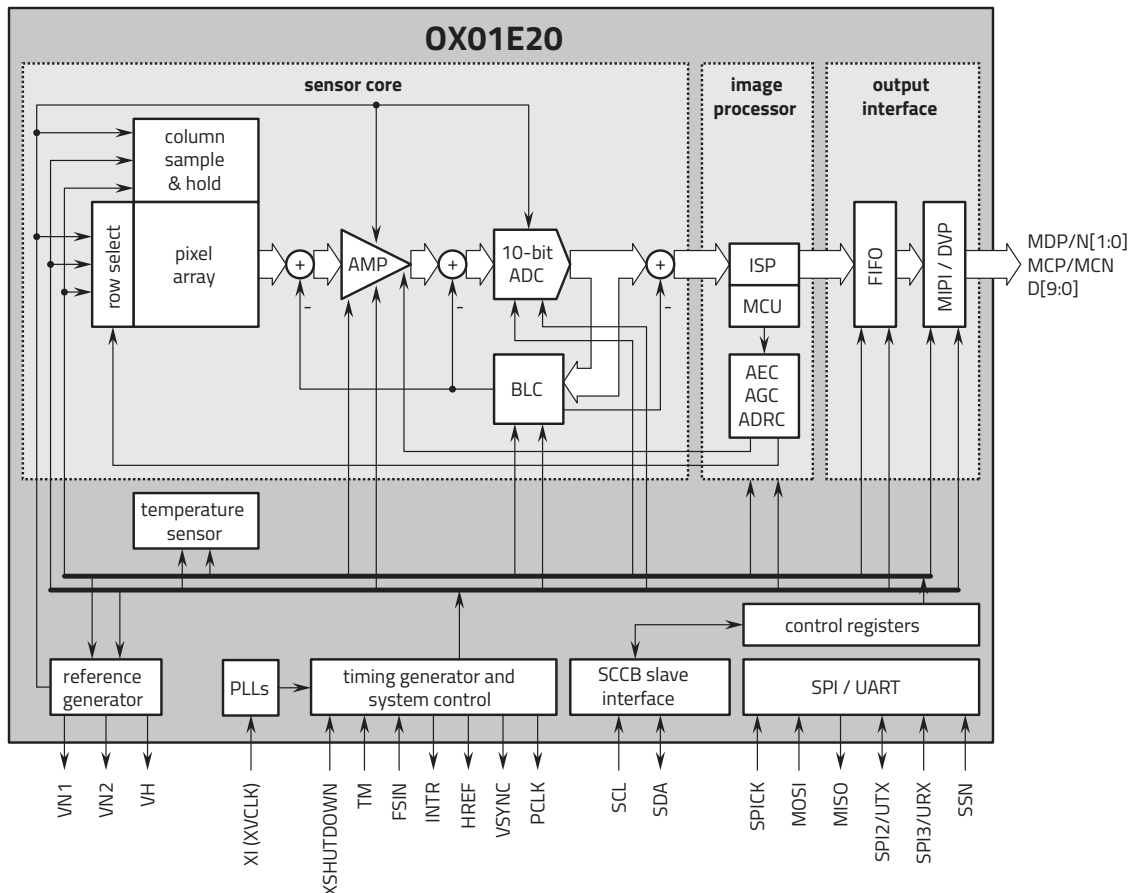
## Technical Specifications

- active array size:** 1344 x 1020
- maximum image transfer rate:** 40 fps @ 1344 x 1020
- power supply:**
  - analog: 3.3V
  - digital: 0.95V
  - I/O pins: 1.8V or 3.3V
- output interfaces:** up to 2-lane MIPI CSI-2 and 116 MHz parallel clock
- temperature range:** operating: -40°C to +105°C sensor ambient temperature and -40°C to +125°C junction temperature
- lens size:** 1/3.55" for 1344 x 1020 image size
- lens chief ray angle:** 21.13°
- output formats:** linear output, four-capture HDR (HCG, LCG, SPD, and VS) with on-chip combination
- pixel size:** 3.0 μm x 3.0 μm
- image area:** 4080 μm x 3108 μm

## Product Features

- support for image size: 1344 x 1020 and any cropped size
- high dynamic range
- high sensitivity
- dual conversion gain
- ASIL-B safety compliant
- image signal processing functions:
  - AEC/AGC/AWB
  - lens correction
  - defective pixel correction
  - HDR combination
  - tone mapping
  - automatic black level correction
- supported output formats:
  - YUV
  - RGB888
  - BT656
  - RAW
- supports LED flickering mitigation (LFM) function
- supports aiming function
- SPI master for overlay and loading settings
- distortion correction
- 50/60 Hz flicker cancellation
- SCCB for register access
- 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

## Functional Block Diagram



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