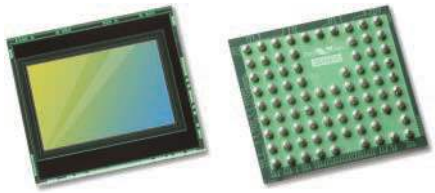


OX03A10 2.46MP product brief

Industry-Leading Low-Light Performance and High Dynamic Range for a Wide Range of Automotive Applications

lead free

available in a lead-free package

OmniVision's OX03A10 is a high-performance, low-power 3.2 µm OmniBSI™-2 image sensor designed for a wide range of advanced automotive imaging applications, including 360-degree surround view, rear view, blind-spot detection, e-mirror, and lane departure warning.

The 2.46-megapixel sensor uses OmniVision's proprietary Deep Well™ pixel technology to deliver industry-leading low-light sensitivity, and enables up to 90 dB of high dynamic range (HDR) from a single exposure without any decrease in signal-to-noise ratio and without motion artifacts. The OX03A10 also features dual-exposure HDR mode that can extend the sensor's dynamic range to more than 120 dB.

The OX03A10 can output multiple resolution formats, including 1920 x 1280 resolution video at 50 frames per second (fps) and 1920 x 1080 resolution video at 60 fps.

The sensor comes in an AEC-Q100 Grade 2 qualified chip-scale package or ball grid array package and has been developed according to ISO 26262 ASIL B requirements.

Find out more at www.ovt.com.

OmniVision

OX03A10

Applications

- Automotive
  - 360° Surround View System
  - Rear View Camera
  - Lane Departure Warning / Lane Keep Assist
  - Camera Monitoring System/E-Mirror
  - Autonomous Driving

Technical Specifications

- **active array size:** 1920 x 1280
- **maximum image transfer rate:**
  - **1280p:** 50 fps
  - **1080p:** 60 fps
  - **1280p (with FuSa/ASIL on):** 40 fps
  - **1080p (with FuSa/ASIL on):** 45 fps
- **power supply:**
  - **analog:** 3.3V
  - **digital:** 1.2V
  - **I/O pads:** 1.8V
- **power requirements:**
  - **active:** streaming @ 1280p50: 370 mW (with FuSa/ASIL off)
- **temperature range:**
  - **operating:** -40°C to +105°C sensor ambient temperature and -40°C to +125°C junction temperature
- **output interfaces:** up to 4-lane MIPI CSI-2
- **lens size:** 1/2.44"
- **lens chief ray angle:** 19.7°
- **scan mode:** progressive
- **shutter:** rolling shutter
- **output formats:** single exposure HDR - 16-bit combined RAW, 12-bit (PWL) compressed combined RAW; dual exposure HDR - 16-bit combined RAW + 12-bit VS RAW, 12-bit (PWL) compressed combined RAW + 12-bit VS RAW
- **pixel size:** 3.2 µm x 3.2 µm
- **image area:** 6195.2 µm x 4147.2 µm
- **package cover glass type:** double sided anti-reflective (AR/AR) coating (without IRCF)

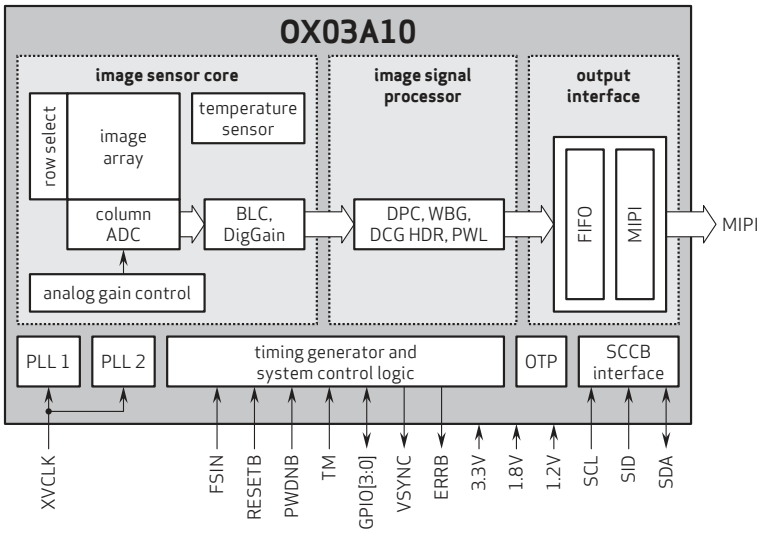
Ordering Information

- **OX03A10-E80Y-1E** (color, lead-free)
  80-pin a-CSP™ packed in tray without protective film
- **OX03A10-E80Y-OE** (color, lead-free)
  80-pin a-CSP™ packed in tape & reel wth protective film (TL)
- **OX03A10-E80Y-LE** (color, lead-free)
  80-pin a-CSP™ packed in tray with protective film (TL)
- **OX03A10-E80Y-SE** (color, lead-free)
  80-pin a-CSP™ packed in tape & reel wth protective film (BL)
- **OX03A10-E80Y-QE** (color, lead-free)
  80-pin a-CSP™ packed in tray with protective film (BL)
- **OX03A10-B83Y-1E** (color, lead-free)
  83-pin a-BGA™ packed in tray without protective film
- **OX03A10-B83Y-OE** (color, lead-free)
  83-pin a-BGA™ packed in tape & reel with protective film
- **OX03A10-B83Y-LE** (color, lead-free)
  83-pin a-BGA™ packed in tray with protective film

Product Features

- support for image size:
  - 1920 x 1280
  - 1920 x 1080
  - VGA
  - QVGA, and any cropped size
- high dynamic range
- high sensitivity
- image sensor processor functions:
  - defective pixel cancelation
  - HDR combination
  - automatic black level correction
  - PWL compression, etc.
- pixel data: 12b RAW RGB
- SCCB for register programming
- dedicated safety features for supporting minimum ASILB applications
- programmable GPIOs
- high speed serial data transfer with MIPI CSI-2
- external frame synchronization capability
- embedded temperature sensor
- one time programmable (OTP) memory

Functional Block Diagram



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