



OX03A10

3-megapixel product brief



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

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.



OX03A10

Ordering Information

- OX03A10-E80Y-1E (color, lead-free)
80-pin a-CSP™ packed in tray without protective film
- OX03A10-B83Y-1E (color, lead-free)
83-pin a-BGA™ packed in tray without protective film

Applications

- automotive
 - 360° surround view systems
 - lane departure warning / lane keep assist
 - rear view cameras
 - camera monitoring systems / e-mirrors
 - autonomous driving

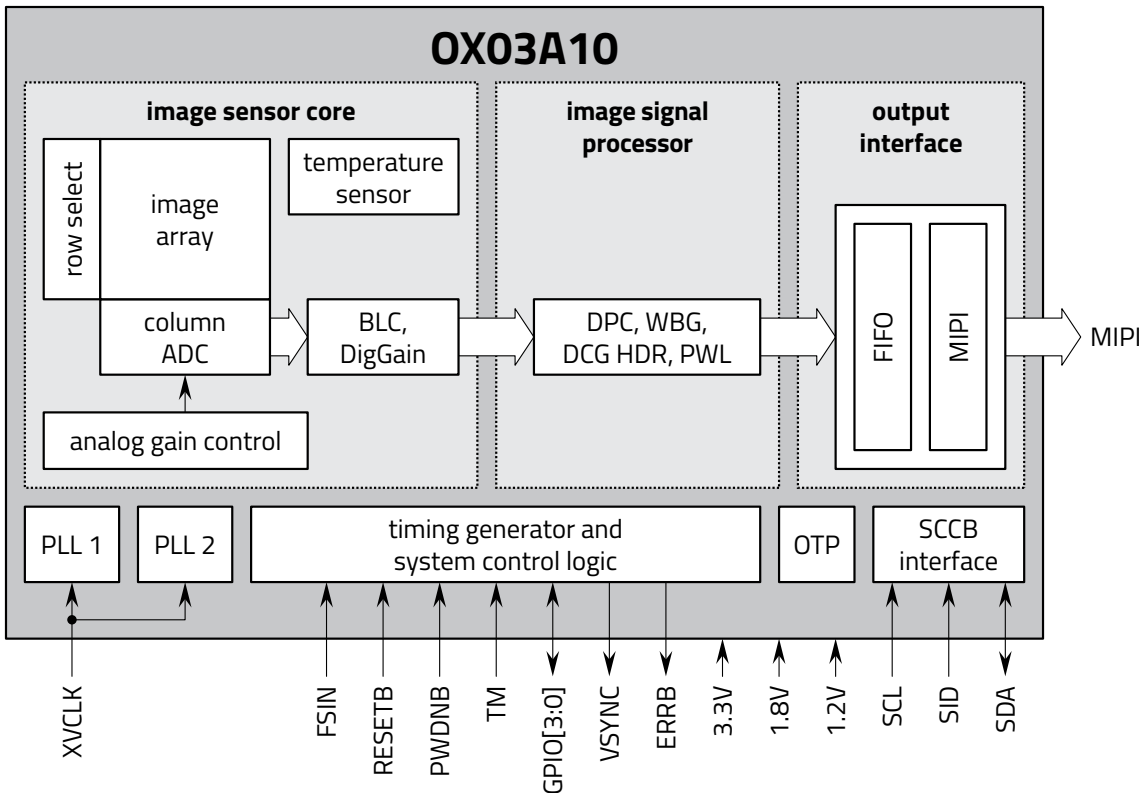
Product Features

- 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 cancellation
 - HDR combination
 - automatic black level correction
 - PWL compression, etc.
- pixel data: 12b RAW RGB
- SCCB for register programming
- dedicated safety features for supporting minimum ASIL B applications
- programmable GPIOs
- high speed serial data transfer with MIPI CSI-2
- external frame synchronization capability
- embedded temperature sensor
- one time programmable (OTP) memory

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 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
- output interfaces: up to 4-lane MIPI CSI-2
- lens size: 1/2.44"
- lens chief ray angle: 19.7°
- scan mode: progressive
- pixel size: 3.2 μm x 3.2 μm
- image area: 6195.2 μm x 4147.2 μm

Functional Block Diagram



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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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