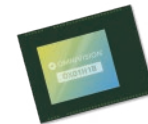




OX01H1B



1.5-megapixel product brief

OX01H1B Global Shutter Sensor for Automotive In-Cabin Driver Monitoring Systems

The OX01H1B is a 1.5-megapixel (MP) mono (IR) global shutter (GS) sensor for driver monitoring systems (DMS). With a pixel size of just 2.2 microns (μm), it features Nyxel® near-infrared (NIR) technology with industry-leading NIR quantum efficiency (QE) at 36%. It also has a significant increase in modulation transfer function (MTF) over the previous 3.0 μm FSI GS pixel design. It offers extremely low power consumption for the highest-performance capabilities.

The OX01H1B is a flexible automotive-grade sensor for DMS that offers the ideal price/performance for OEMs that need flexibility to place the DMS camera into different locations within the vehicle based on their unique interior design. It

features OmniPixel®4-GS technology for simultaneous image detection in all pixels to accurately reproduce rapid motion without any deformation. It has integrated ASIL-B and cybersecurity that meet the latest industry standards. It is available in an OMNIVISION stacked a-CSP™ package or a reconstructed wafer option. The OX01H1B comes in a 1/4.51-inch optical format.

Samples of the OX01H1B GS sensors are available now and will be in mass production in 2024.

Find out more at www.ovt.com.



OX01H1B

Ordering Information

- OX01H1B-E49U-001A-Z (b&w, lead-free) 49-pin a-CSP™, rev 1A, manual testing, packed in tray without protective film
- OX01H1B-E49Y-001A-Z (b&w, lead-free) 49-pin a-CSP™, rev 1A, packed in tray without protective film

Applications

- automotive
 - autonomous driving
 - driver monitor system
 - occupant monitor system
 - in-cabin monitor system

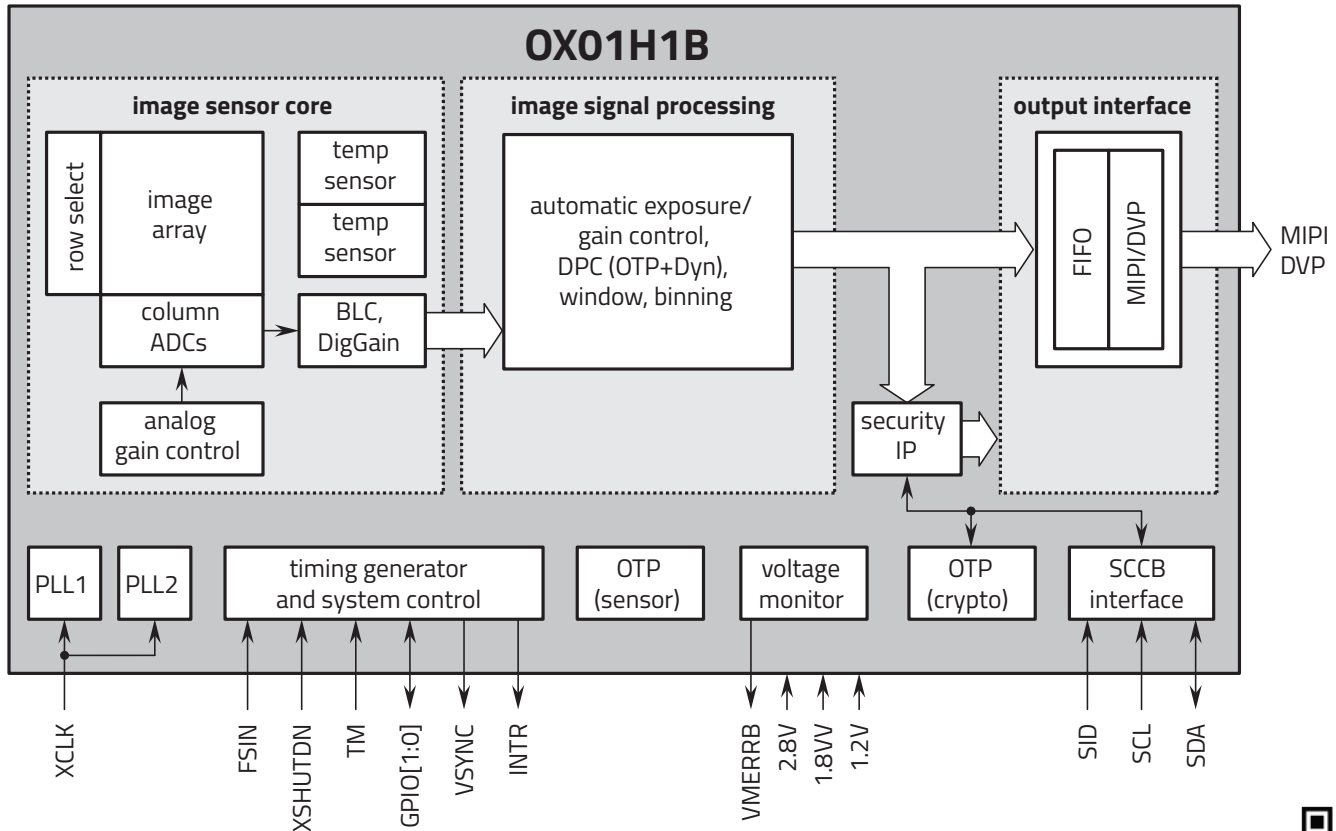
Technical Specifications

- active array size:** 1440 x 1080
- output formats:** linear output
- maximum image transfer rate:**
 - 1440 x 1080: 90 fps
- lens size:** 1/4.51"
- lens chief ray angle:** 22.441° non-linear
- pixel size:** 2.2 µm x 2.2 µm
- image area:** 3203.2 µm x 2402.4 µm
- power supply:**
 - analog: 2.8V
 - digital: 1.2V
 - I/O pads: 1.8V
- temperature range:**
 - operating: -40°C to +105°C sensor ambient temperature and -40°C to +125°C junction temperature

Product Features

- support for image size: 1440 x 1080 and any cropped size
- data format: RAW b&w
- 2.2 µm x 2.2 µm pixel with PureCel®Plus-S, global shutter, and Nyxel® technologies
- image sensor processor functions:
 - defective pixel cancellation
 - automatic black level correction
 - automatic exposure/gain control, etc.
- dedicated safety features for supporting ASIL-B applications
- high speed serial data transfer with MIPI CSI-2 (4/2-lane D-PHY)
- parallel 10-bit DVP output
- SCCB for register programming
- external frame synchronization capability
- embedded temperature sensor
- embedded supply voltage monitor
- one time programmable (OTP) memory
- cybersecurity for camera/host interface hacking prevention

Functional Block Diagram



Version 1.0, June 2023

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, PureCel, OmniPixel, and Nyxel are registered trademarks of OmniVision Technologies, Inc. a-CSP is a trademark of OmniVision Technologies, Inc. All other trademarks are the property of their respective owners.

 **OMNIVISION®**