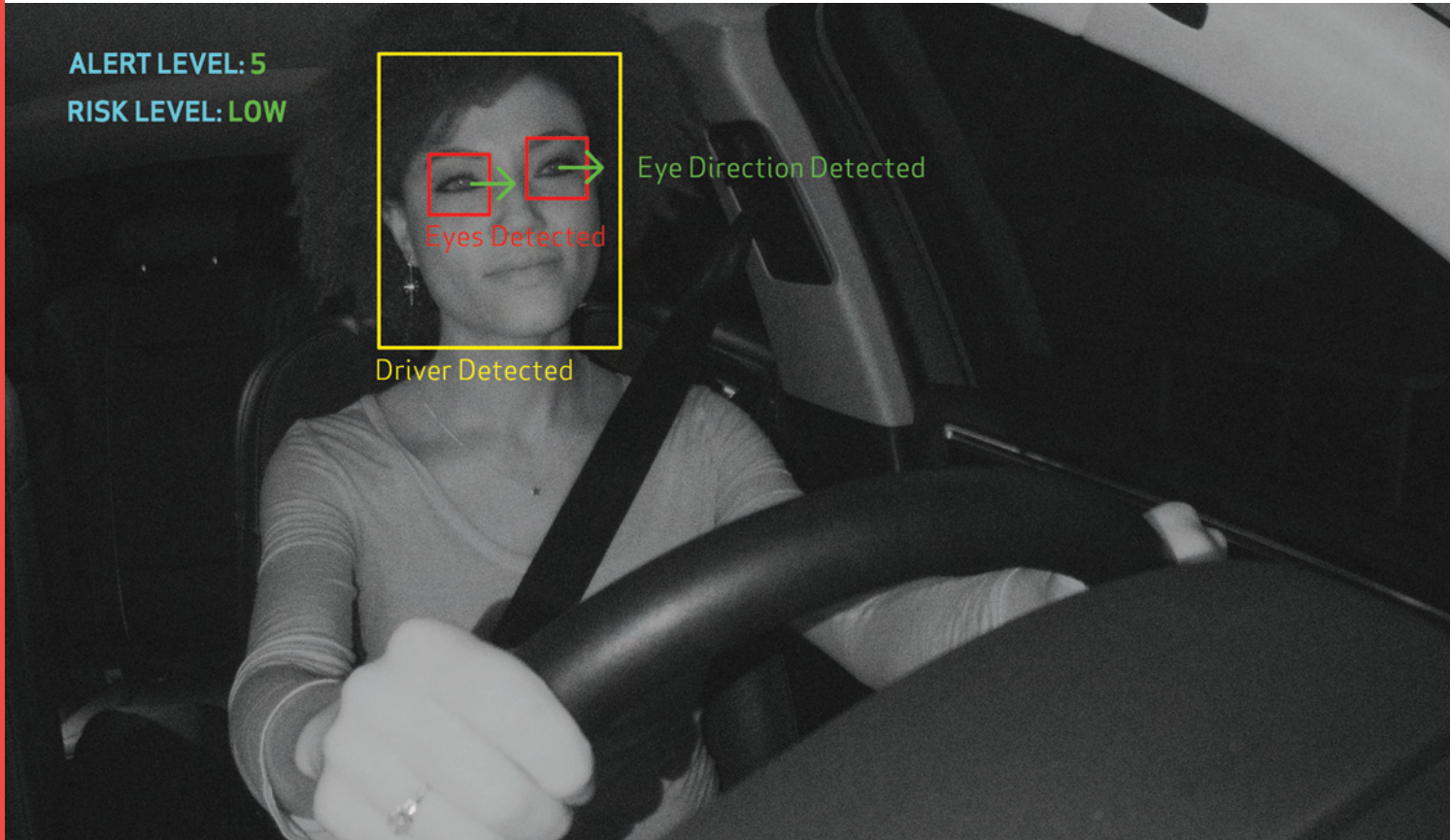


OV2311 2-megapixel product brief



Compact, Cost-Effective 2-Megapixel Global Shutter Sensor for Driver Monitoring Systems



available in
a lead-free
package

OmniVision's OV2311 is the automotive industry's first 2-megapixel, 3-micron global shutter image sensor designed for driver monitoring applications. Leveraging proven OmniPixel®3-GS global shutter technology and near-infrared imaging capabilities, the OV2311 offers semi-autonomous vehicle manufacturers a high-performance, cost-effective, ASIL-B qualified imaging solution for driver monitoring systems.

The sensor captures high-quality video up to 60 frames per second (fps) in a 1600 x 1300 resolution format, which is designed to fit the driver's head box to ensure reliable monitoring regardless of driver height, seat position, or vehicle cockpit design. Due to the sensor's

high resolution, the OV2311 offers exceptionally accurate gaze- and eye-tracking capabilities. The OV2311 achieves high near-infrared quantum efficiency to minimize active illumination power and reduce the system power requirements.

The OV2311 comes in an ultra-compact 7.2 x 6.2 mm automotive chip-scale package (a-CSP™), which allows it to be discreetly designed into the cockpit of the vehicle. The sensor supports a 4-lane MIPI and 12-bit double-data-rate digital video port (DVP) interface.

Find out more at www.ovt.com.



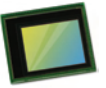
Applications

- Driver Monitoring Systems
- Industrial Bar Code Scanning

Product Features

- 3 μm x 3 μm pixel with OmniPixel³-GS technology
- automatic black level calibration (ABLC)
- programmable controls for:
 - frame rate
 - mirror and flip
 - cropping
 - windowing
- support output formats: 8/10-bit RAW
- fast mode switching
- supports 2x2 monochrome binning
- two-lane MIPI serial output interface
- DVP parallel output interface
- built-in strobe control
- supports horizontal and vertical 2:1 monochrome subsampling
- support for image sizes:
 - 1600 x 1300
 - 1280 x 720
 - 640 x 480
- embedded 128 bytes of one-time programmable (OTP) memory
- two on-chip phase lock loops (PLLs)
- temperature sensor
- LED PWM
- low power modes
- frame sync mode

OV2311



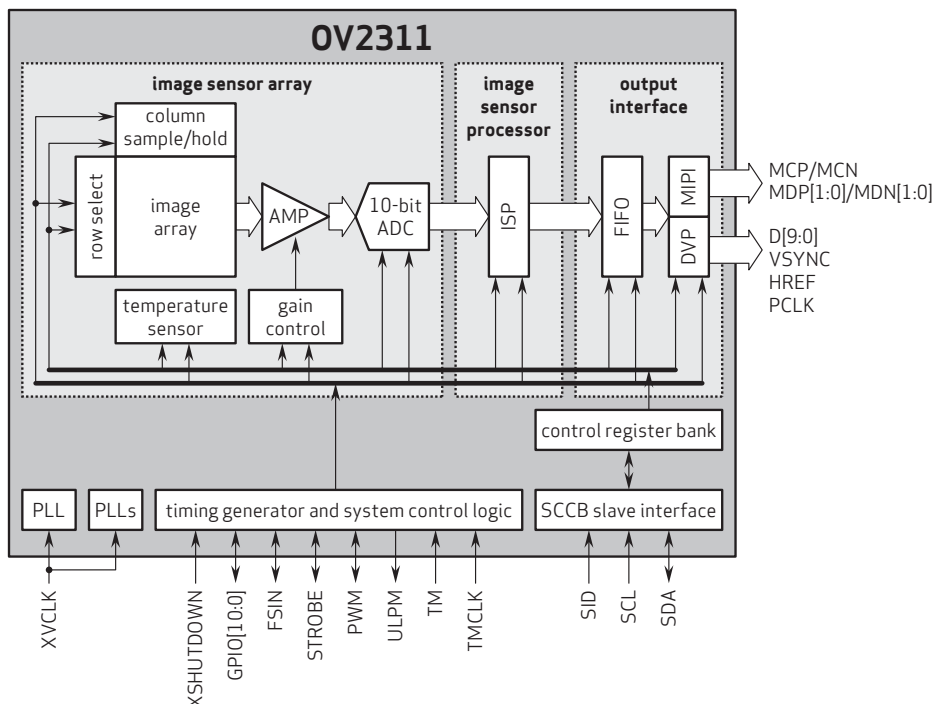
Ordering Information

- **OV02311-E74Y-1C-Z** (b&w, lead-free) 75-pin a-CSP™ with DAR, packed in tray without protective film
- **OV02311-E74Y-QC-Z** (b&w, lead-free) 75-pin a-CSP™ with DAR, packed in tray with protective film (tab at bottom left)
- **OV02311-E74Y-SC-Z** (b&w, lead-free) 75-pin a-CSP™ with DAR, packed in tape & reel with protective film (tab at bottom left)

Product Specifications

- **active array size:** 1600 x 1300
- **power supply:**
 - analog: 2.8V (nominal)
 - core: 1.2V (nominal)
 - I/O: 1.8V (nominal)
- **power requirements:**
 - active: 190 mW
 - standby: 130 μW
 - XSHUTDOWN: <10 μW
- **temperature range:**
 - operating: -40°C to +105°C sensor ambient temperature and -40°C to +125°C junction temperature
- **output interface:** 2-lane MIPI serial output and DVP parallel output
- **output formats:** 10-bit RAW
- **lens size:** 1/2.9"
- **input clock frequency:** 6 - 27 MHz
- **lens chief ray angle:** 15° linear
- **maximum image transfer rate:** - 1600 x 1300: 60 fps
- **maximum exposure interval:** 1 row period
- **maximum exposure time:** frame length - 12 row periods, where frame length is set by registers [0x380E, 0x380F]
- **pixel size:** 3 μm x 3 μm
- **image area:** 4857.7 μm x 3955.9 μm
- **package dimensions:**
 - a-CSP™: 7219 μm x 6157 μm

Functional Block Diagram



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