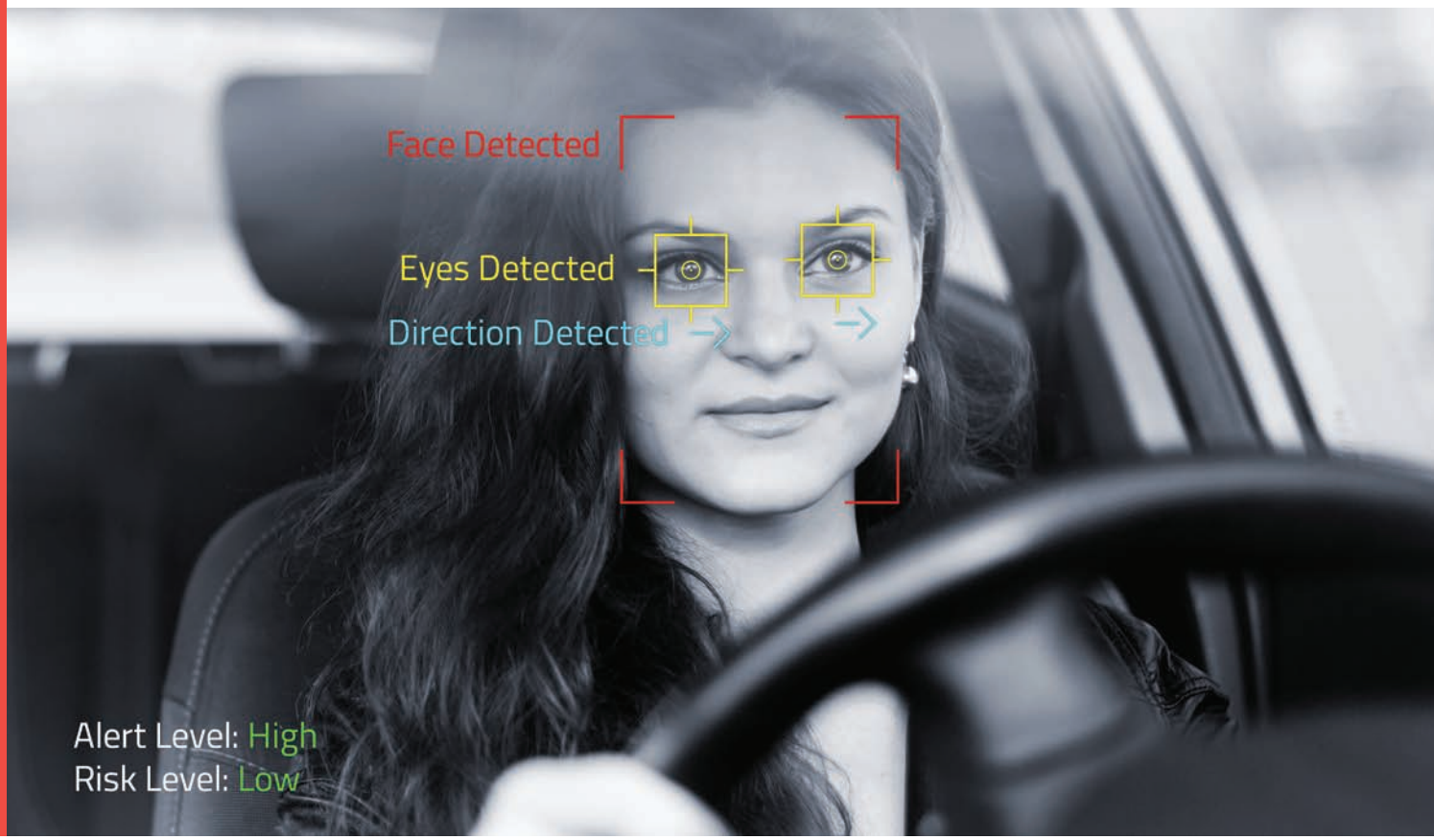
OVM9284 1-megapixel product brief



lead free

available in a lead-free package

Automotive Wafer-Level Camera Module Enables Better Driver Monitoring Systems in More Vehicles

OmniVision's OVM9284 is a 1 megapixel (MP) CameraCubeChip™ automotive-grade, wafer-level camera. This module has a compact size of 6.5 x 6.5 mm to provide driver monitoring system (DMS) designers with maximum flexibility on placement within the cabin while remaining hidden from view. Additionally, it has the lowest power consumption among automotive camera modules—over 50% lower than the nearest competitor—enabling it to run continuously in the tightest of spaces and at the lowest possible temperatures for maximum image quality.

Built on OmniVision's OmniPixel®3-GS global-shutter pixel architecture, the OVM9284 provides best-in-class quantum efficiency at the 940 nm wavelength for the highest quality driver images in near or total darkness. The integrated OmniVision image sensor has a 3 micron pixel and a 1/4" optical format, along with 1280 x 800 resolution.

The OVM9284's integration of OmniVision's image sensor, signal processor and wafer-level optics in a single compact package reduces the complexity of dealing with multiple vendors, and increases supply reliability while speeding development time. Furthermore, unlike traditional cameras, all CameraCubeChip™ modules are reflowable. This means they can be mounted to a printed circuit board simultaneously with other components using automated surface-mount assembly equipment, which increases quality while reducing assembly costs.

Find out more at www.ovt.com.

OmniVision

OVM9284

Applications

- Driver Monitoring System
- In-Cabin Monitoring System

Product Features

- 3 µm x 3 µm pixel with OmniPixel®3-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
- supports horizontal and vertical 2:1 and 4:1 monochrome subsampling
- support for image sizes:
  - 1280 x 800
  - 1280 x 720
  - 640 x 480
  - 640 x 400
- embedded 256 bits of one-time programmable (OTP) memory for part identification
- two on-chip phase lock loops (PLLs)
- LED PWM
- built-in strobe control

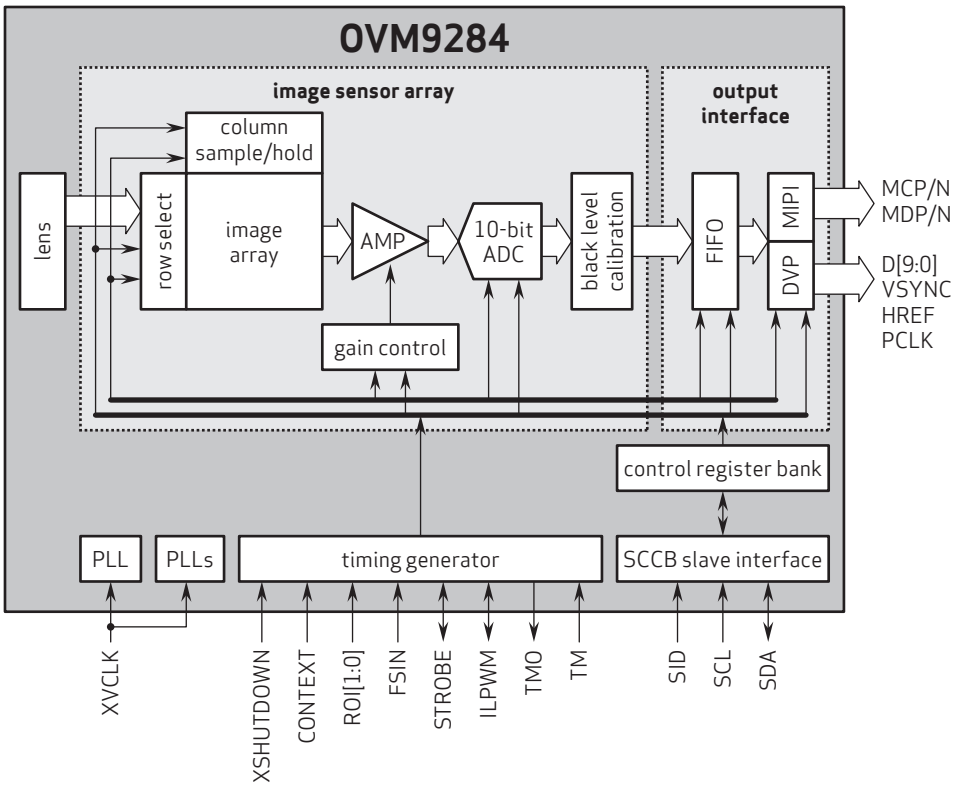
Ordering Information

- **OVM9284-RGPA-Z** (b&w, lead-free) CameraCubeChip™ with holder

Technical Specifications

- **active array size:** 1296 x 816
- **maximum image transfer rate:**
  - **1280 x 800:** 120 fps
- **power supply:**
  - **analog:** 2.8V (nominal)
  - **core:** 1.2V (nominal)
  - **I/O:** 1.8V (nominal)
- **power requirements:**
  - **active:** 156 mW
  - **standby:** 150 µA
  - **XSHUTDOWN:** 150 µA
- **temperature range:**
  - **operating:** -40°C to +105°C sensor ambient temperature and -40°C to +125°C junction temperature
- **output interfaces:** 2-lane MIPI serial output and DVP parallel output
- **output formats:** 8/10-bit RAW
- **optical format:** 1/4"
- **diagonal field of view (FOV):** 63°
- **f no.:** 2.4
- **focal length:** 3.73 mm
- **scan mode:** progressive
- **pixel size:** 3 µm x 3 µm
- **image area:** 3896 µm x 2453 µm

Functional Block Diagram



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