

OV9738 720p RGB-Ir product brief



New RGB-Ir Image Sensor Brings Biometric Applications to Mainstream Notebooks



available in
a lead-free
package

OmniVision's OV9738 is a 1/9 inch, 1.4 micron RGB-Ir image sensor that combines RGB and infrared (IR) imaging capabilities in a single chip for improved performance at lower system cost. Leveraging OmniVision's PureCel®Plus technology, the OV9738 reduces color crosstalk to capture high-quality color images and video.

This single-chip solution makes biometric authentication applications such as Windows® Hello affordable for a broader range of devices because it only requires a single camera. The sensor is ideally suited for bringing IR biometric capabilities for facial recognition and gesture tracking to mainstream laptops and handheld consumer-electronic devices.

The OV9738 offers 720p resolution at 30 frames per second. Additionally, it includes OmniVision's industry-leading RGB-Ir technology for improved quantum-efficiency performance in near-IR light, which can help reduce LED power consumption. At the same time, the OV9738 uses PureCel®Plus technology to reduce color crosstalk, which helps provide the best possible color-reproduction quality.

This sensor is available in chip on board (COB) and reconstructed wafer (RW) formats.

Find out more at www.ovt.com.



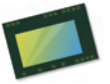
Applications

- Smartphones
- PC Multimedia
- Tablets
- Digital Still Cameras
- Toys

Product Features

- support for image sizes:
 - full size (1280x720)
 - VGA (640x480)
- support for output formats:
 - RAW RGB-Ir output with 1-lane MIPI
- capable of maintaining register values at software power down
- programmable controls for:
 - frame rate
 - mirror and flip
 - gain/exposure
 - windowing
- support for horizontal and vertical sub-sampling
- automatic black level calibration (ABLC)
- support for black sun cancellation
- standard SCCB interface
- on-chip phase lock loop (PLL)
- GPIO tri-state configurability and programmable polarity
- RGB-Ir with 4x4 pattern

OV9738



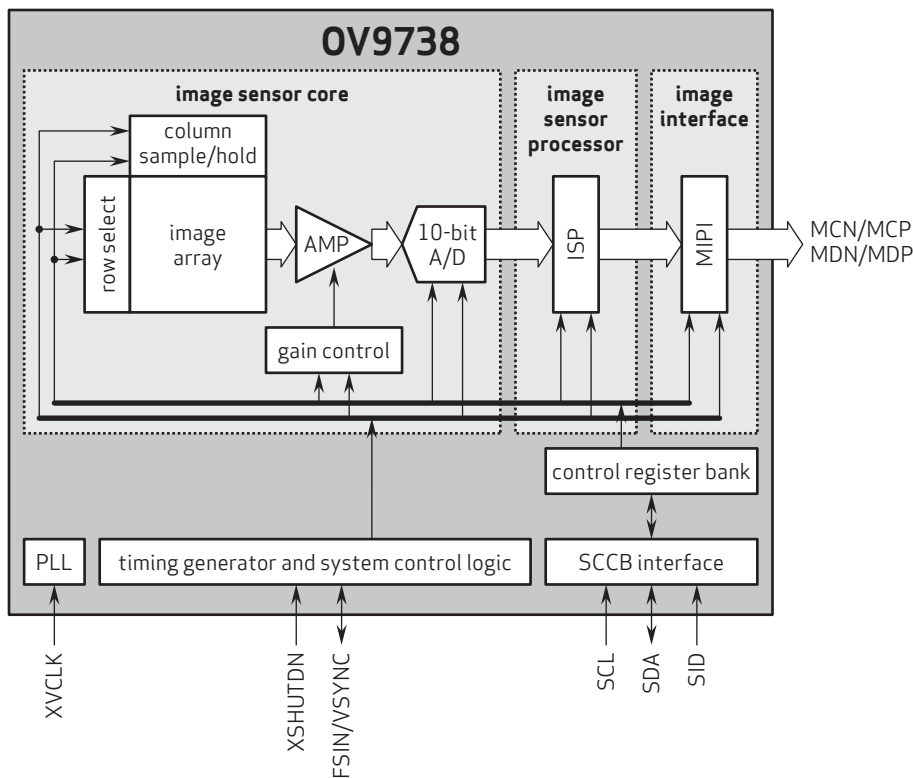
Ordering Information

- OV09738-GA5A-Z**
(RGB-Ir, chip probing, 150 μm backgrinding, reconstructed wafer with good die)

Product Specifications

- active array size:** 1280 x 720
- scan mode:** progressive
- power supply:**
 - analog: 2.6 - 3.0V (2.8V normal)
 - core: 1.2 VDC \pm 5%
 - I/O: 1.8V
- power requirements:**
 - active: 69 mW
 - XSHUTDOWN: 0.9 μW
- temperature range:**
 - operating: -30°C to +85°C junction temperature
 - stable image: 0°C to +50°C junction temperature
- output formats:** 10-bit RAW RGB-Ir
- lens size:** 1/9"
- lens chief ray angle:** 32.1°
- input clock frequency:** 6 - 27 MHz
- scan mode:** progressive
- maximum image transfer rate:** 30 fps
- sensitivity:** 585 mV/Lux-sec
- shutter:** rolling shutter
- max S/N ratio:** 36.4 dB
- dynamic range:** 68.4 dB @ 16x gain
- maximum exposure interval:** 798 x t_{row}
- pixel size:** 1.4 μm x 1.4 μm
- dark current:** 2 e^-/sec @ 50°C junction temperature
- image area:** 1819.58 μm x 1033.34 μm
- die dimensions:**
 - COB: 2502 μm x 1692 μm
 - RW: 2552 μm x 1742 μm

Functional Block Diagram



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