

OV9750 720p HD product brief



available in
a lead-free
package

High Performance 1/3-Inch Image Sensor Brings 720p HD Video to Mainstream Surveillance Camera Applications

OmniVision's new OV9750 is a high performance 1/3-inch 720p high definition (HD) sensor designed specifically for mainstream consumer and commercial security systems. The sensor utilizes OmniVision's latest OmniPixel3-HS™ with dual conversion gain frontside illumination technology to capture high definition (HD) video used for popular analog 960H CCTVs, as well as HD analog and 720 HD network cameras. The OV9750 also has high near-infrared (NIR) sensitivity for day and night camera applications.

Built on 3.75-micron OmniPixel3-HS™ with dual conversion gain pixel architecture, the OV9750 achieves excellent image performance, enabling clear image and

video recording in both high- and low-light environments. The OV9750 is capable of operating in SXGA (1280x960) resolution at 60 frames per second (fps) with 10-bit output, or at 45 fps with 12-bit output.

Additionally, the sensor fits into a 6.3 x 5.2 mm package and supports ultra-low power mode (ULPM), which reduces resolution and frame rates to conserve additional power for very low-power camera design.

Find out more at www.ovt.com.



Applications

- Security and Surveillance Cameras
- Wearables
- PC Multimedia
- 960H for Analog CCTV Applications

Product Features

- 3.75 μm x 3.75 μm pixel
- support for output formats: 10/12-bit RGB RAW
- 1280x960 at 60 fps @ 10-bit, 45 fps @ 12-bit
- two-wire serial bus control (SCCB)
- programmable controls for frame rate, mirror and flip, cropping, and windowing
- MIPI/LVDS serial output interface (1- or 2-lane)/DVP interface
- supports images sizes: SXGA (1280 x 960), VGA (640 x 480), and more
- 2x binning support
- 2k bits of embedded one-time programmable (OTP) memory
- image quality control: defect pixel correction and automatic black level calibration
- ultra low power mode (ULPM)

OV9750



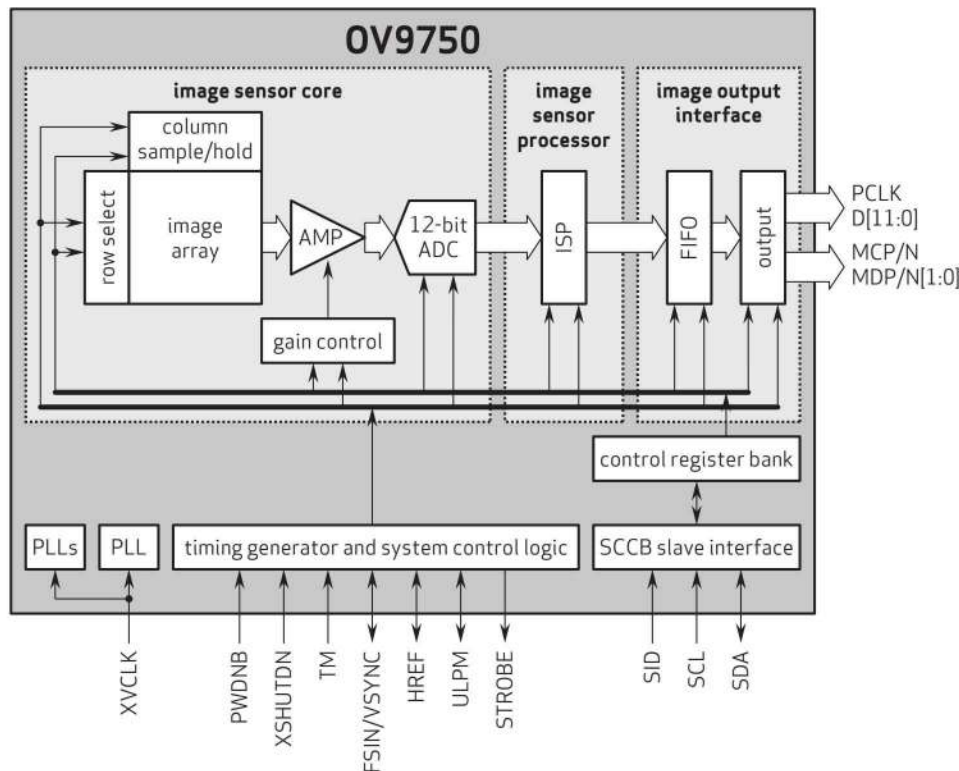
Ordering Information

- OV09750-H55A (color, lead-free, 55-pin CSP5)

Product Specifications

- active array size: 1280 x 960
- lens chief ray angle: 9° linear
- power supply:
 - core: 1.7 to 1.9V (1.8V nominal)
 - analog: 3.15 to 3.45V (3.3V nominal)
 - I/O: 1.7 to 1.9V (1.8V nominal)
- input clock frequency: 6 - 74.5 MHz
- power requirements:
 - active: 166 mW
 - standby: 51 μW
 - XSHUTDN: 13 μW
- maximum image transfer rate:
 - SXGA (1280x960): 60 fps
 - VGA (640x480): 120 fps
- sensitivity: 3600 mV/lux-sec
- max S/N ratio: 43.1 dB
- temperature range:
 - operating: -30°C to +85°C junction temperature
 - stable image: 0°C to +60°C junction temperature
- dynamic range: 73.4 dB @ 8x gain
- output interface: 2-lane MIPI/LVDS serial output/DVP parallel output
- pixel size: 3.75 μm x 3.75 μm
- output formats: 10/12-bit RGB RAW
- dark current:
 - HCG: 13.8 mV/s @ 60°C junction temperature
 - LCG: 4.5 mV/s @ 60°C junction temperature
- lens size: 1/3"
- image area: 4860 μm x 3660 μm
- die dimensions: 6254 μm x 5194 μm

Functional Block Diagram



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