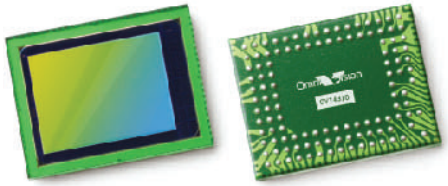


OV14810 14.6-megapixel product brief

14.6-Megapixel Photography and Full 1080p High-Definition Video

lead free

available in a lead-free package

The OV14810 is the ultimate solution for high quality point-and-shoot photography and full HD video recording, combining 14.6-megapixel photography with 1080p/60 HD video recording. The 1/2.33-inch OV14810 utilizes OmniVision's most advanced 1.4-micron OmniBSI™ pixel architecture to achieve optimal performance and low-light sensitivity in the industry's smallest format. The OV14810 has an active array of 4416 x 3312 backside illumination pixels operating at 15 fps in full resolution, while delivering full 1080p HD video at 60 fps, using a binning feature to achieve higher sensitivity. In full HD video mode, the sensor also provides additional pixels used for electronic image stabilization (EIS).

The OV14810's 9° chief ray angle (CRA) optimizes it for use in DSC and DVC applications. The sensor's small form factor is largely attributable to its CSP3 packaging, allowing for the development of ultra compact cameras. The OV14810 enables camera designs with a low bill of materials and reduced power consumption. It is offered with industry-standard connectivity including LVDS, MIPI and DVP and does not require external IC components.

All required image processing functions, including exposure control, white balance, defective pixel canceling, noise canceling are programmable through the SCCB interface. In addition, OmniVision image sensors use proprietary sensor technology to improve image quality by reducing or eliminating common lighting/electrical sources of image contamination, such as fixed pattern noise and smearing to produce a clean, fully stable color image.

Find out more at www.ovt.com.

OmniVision

OV14810

Applications

- Digital Still Cameras (DSC)
- Digital Video Camcorders (DVC)
- Cellular and Mobile Phones

Ordering Information

- **OV14810-A16A**
  (color, lead-free, 116-pin CSP3)

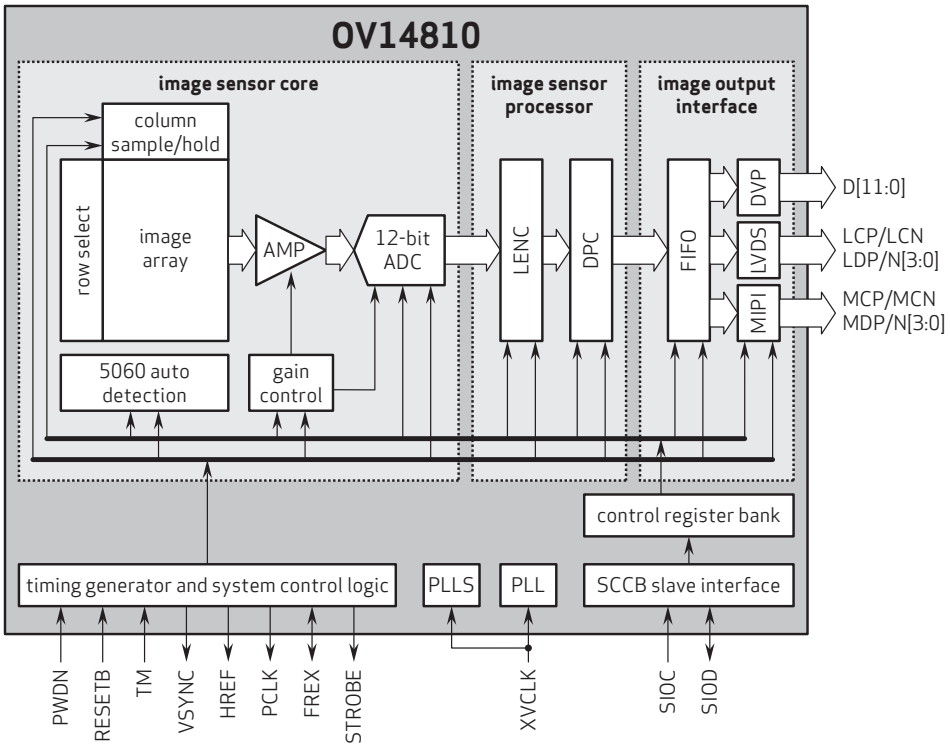
Product Features

- ultra high performance
- automatic image control functions:
  - automatic exposure control (AEC)
  - automatic gain control (AGC)
  - automatic white balance (AWB)
  - automatic band filter (ABF)
  - automatic 50/60 Hz frequency detection
  - automatic black level calibration (ABLC)
- programmable controls for frame rate, mirror and flip, cropping, and windowing
- image quality controls: lens correction and defective pixel canceling
- support for output formats:
  - 10/12-bit raw RGB data (DVP)
  - 10/12-bit raw RGB data (MIPI/LVDS)
  - CCIR656
- support for horizontal and vertical subsampling
- support for images sizes: 14.6 Mpixel, 12.7 Mpixel, electronic image stabilization (EIS) 1080p, 1080p, EIS720p, 720p, VGA, etc.
- support for binning
- standard serial SCCB interface
- digital video port (DVP) parallel output interface
- LVDS serial output interface
- MIPI serial output interface
- embedded one-time programmable (OTP) memory for part identification, etc.
- on-chip phase lock loop (PLL)
- programmable I/O drive capability
- built-in 1.5 V regulator for core

Product Specifications

- **active array size:** 4416 x 3312
- **power supply:**
  - **core:** 1.5 VDC ±5%
    (internal regulator optional)
  - **analog:** 2.6 - 3.0 V (2.8 V typical)
  - **I/O:** 1.7 - 3.0 V (1.8 V/2.8 V typical)
- **power requirements:**
  - **active:** 230 mA
  - **standby:** 40 µA
  - **power down:** 40 µA
- **temperature range:**
  - **operating:** -30°C to 70°C junction temperature
  - **stable image:** 0°C to 50°C junction temperature
- **output formats:**
  10/12-bit raw RGB data (DVP),
  10/12-bit raw RGB data (MIPI/LVDS)
- **lens size:** 1/2.33"
- **lens chief ray angle:** 9° non-linear
- **input clock frequency:** 6 - 27 MHz
- **max S/N ratio:** 35 dB
- **dynamic range:** 68 dB @ 8x gain
- **maximum image transfer rate:**
  - **14.6M (10-bit):** 15 fps
  - **EIS1080p (10-bit):** 60 fps
- **sensitivity:** 720 mV/lux-sec
- **scan mode:** progressive
- **maximum exposure interval:** 3330 x t_{ROW}
- **pixel size:** 1.4 µm x 1.4 µm
- **dark current:** 3.8 mV/s @ 60°C junction temperature
- **image area:** 6227 µm x 4653 µm
- **package dimensions:**
  8935 µm x 6975 µm

Functional Block Diagram



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