Excellent Integrated System Limited
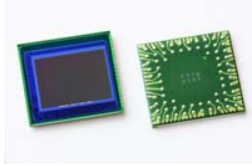
Stocking Distributor

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OmniVision Technologies Inc
OV09810-A70A

For any questions, you can email us directly:
sales@integrated-circuit.com

OV9810

9 Megapixel 1080p HD
Video Image Sensor

Product Brief

lead free
available in
a lead-free
package

Capture Stunning 9 Megapixel Still Images and 1080p HD Video All on a Single Chip

The OV9810 color image sensor eliminates the trade-offs between high performance still photography and high quality HD video by combining 9 megapixel photography with 1080p HD video on a single chip. With a packaged footprint of only 8.195 mm x 7.535 mm, the OV9810 is the ideal solution for digital still camera (DSC), digital video camcorder (DVC) and digicam applications.
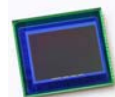
Featuring OmniVision's high-sensitivity 1.75 μm OmniPixel3-HS™ architecture, the OV9810 delivers best-in-class low-light sensitivity at 960 mV/(lux-sec), giving it a significant edge over competing sensors. The OmniPixel3-HS architecture is OmniVision's most advanced generation of front side illumination pixel architectures to date, providing enhanced image capture under very low lighting conditions.

In addition to its small footprint and extraordinary performance, the OV9810 is capable of providing various output formats over a digital video parallel (DVP) or serial MIPI port, controlled by the SCCB interface. The MIPI and DVP interfaces can also be used for a second camera. All required image processing functions, including exposure control, white balance, and defective pixel canceling, are programmable through the SCCB interface. The OV9810 eliminates image contamination issues such as fixed pattern noise, smearing and blooming to produce a clean, stable and vivid color image.

The OV9810 is capable of operating at 8.9 frames per second (fps) in full 9 megapixel resolution and offers full HD quality (1080p) video at 30 fps. No other 9 megapixel image sensor on the market combines the performance-rich features of digital still and 1080p video better than the OV9810.

Find out more at www.ovt.com.

OmniVision.

OV9810

Applications

- Digital Still Cameras (DSC)
- Digital Video Camcorders (DVC)
- Digicam

Ordering Information

- **OV09810-A70A**
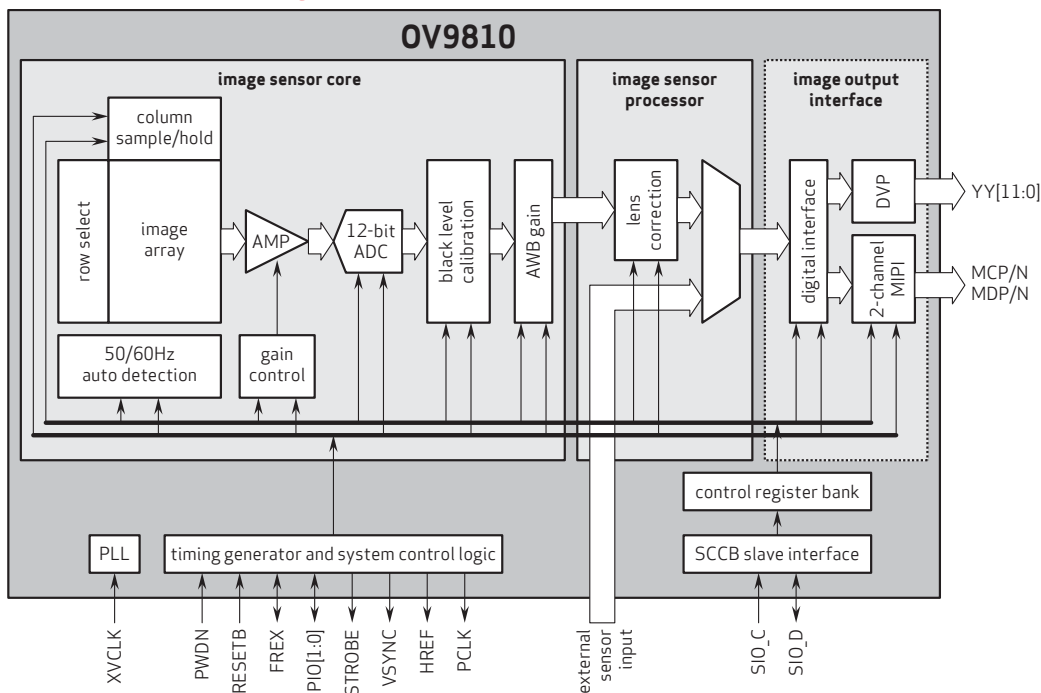 (color, lead-free 70-pin CSP3)

Product Features

- high quality 9 megapixel resolution
- full HD 1080p video capability
- small footprint
  8.195 mm x 7.535 mm CSP3 package
- automatic image control functions:
  automatic exposure control (AEC),
  automatic white balance (AWB),
  automatic band filter (ABF),
  automatic 50/60 Hz luminance
  detection, and automatic black level
  calibration (ABLC)
- programmable controls for frame
  rate, exposure time, gain, mirror and
  flip, cropping, windowing, and
  panning
- image quality controls: lens
  correction, defective pixel canceling
- support for output formats: RAW8,
  RAW10, RAW12, generic 8-bit long
  packet data types, user defined
  byte-based data

- support for frame exposure mode
- support for horizontal and vertical
  sub-sampling and VarioPixel™
- support for LED and flash strobe
  mode
- standard serial camera control bus
  (SCCB) interface
- digital video port (DVP) parallel
  output and MIPI interfaces
- embedded one-time programmable
  (OTP) memory for part
  identification, etc.
- on-chip phase lock loop (PLL)
- programmable I/O drive capability
- built-in 1.5V regulator for core

Product Specifications

- **active array size:** 3488 x 2616
- **power supply:**
  - **core:** 1.5 VDC ± 5%
  - **analog:** 2.8 V ± 5%
  - **I/O:** 1.7 - 3.1 V
- **temperature range:**
  - **operating:** -30°C to 70°C
  - **optimal:** 0°C to 50°C
- **output formats:**
  - RAW8, RAW10, RAW12, generic
    8-bit long packet data types, user
    defined byte-based data
- **lens size:** 1/2.3"
- **lens chief ray angle:** up to 11°
- **input clock frequency:** 6 - 27 MHz

- **frame rate:**
  9 megapixel (3488 x 2616): 8.9 fps
  8 megapixel (3264 x 2448): 10 fps
  5 megapixel (2592 x 1944): 15 fps
  1080p (1920 x 1080): 30 fps
  720p (1280 x 720): 60 fps
  1744 x 982: 30 fps
  VGA (640 x 480): 60 fps
  QVGA (320 x 240): 120 fps
- **sensitivity:** 960 mV/(lux-sec)
- **scan mode:** progressive
- **pixel size:** 1.75 µm x 1.75 µm
- **image area:** 6160 µm x 4606 µm
- **package dimensions:**
  8195 µm x 7535 µm

Functional Block Diagram