Chipsmall

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

OVM7695 *VGA* product brief

Industry's Most Compact VGA CameraCubeChip™ for Front-Facing Cameras in Mobile Devices

lead free

available in a lead-free package

The OVM7695 is an ultra compact VGA CameraCubeChip™ designed specifically to meet the performance and manufacturing requirements of front-facing camera applications for next-generation mobile devices. The only VGA camera using backside illumination (BSI) pixel technology, the reflowable OVM7695 is a high-performance, all-in-one complete camera solution with a module size of 2.4 x 2.4 x 2.3 mm.

The OVM7695 offers an easy-to-use front-facing camera solution that requires minimal assembly and tuning effort. This dramatically simplifies design, integration and manufacturing of mobile phone cameras, thus reducing inventory risk and lowering development costs.

The 1/13-inch OVM7695 is built on an optimized 1.75-micron OmniBSI+™ pixel, offering improved sensitivity and image reproduction to deliver optimal performance in difficult lighting conditions. The OVM7695 captures high-quality VGA video at 30 frames per second and provides full-frame, sub-sampled and cropped images in various formats through the Serial Camera Control Bus (SCCB) interface.

It supports all required image processing functions, including exposure control, gamma, white balance, color saturation and noise and defective pixel canceling. It uses OmniVision's proprietary sensor technology to improve image quality by reducing or eliminating common lighting and electrical sources of image contamination to produce a clean, fully stable color image.

Find out more at www.ovt.com.

Omni Vision.

Applications

- Cellular and Picture Phones

OVM7695

Product Features

- support image sizes: VGA (640x480), QVGA (320x240), QQVGA (160x120), and HF (640x20)

- support output formats: YUV422 and RAW 8 RGB through MIPI, YUV422 and RAW 10 RGB through OmniVision's proprietary SPI

- on-chip phase lock loop (PLL)

- built-in 1.5V regulator for digital block

- capable of maintaining register values at software power down

- programmable controls for frame rate, mirror and flip, AEC/AGC, and windowing

- support horizontal and vertical sub-sampling

- automatic image control functions:
  - automatic exposure control (AEC)
  - automatic white balance (AWB)
  - automatic black level calibration (ABLC)

- image quality controls: defect pixel correction and lens shading correction

- support black sun cancellation

- standard serial SCCB interface

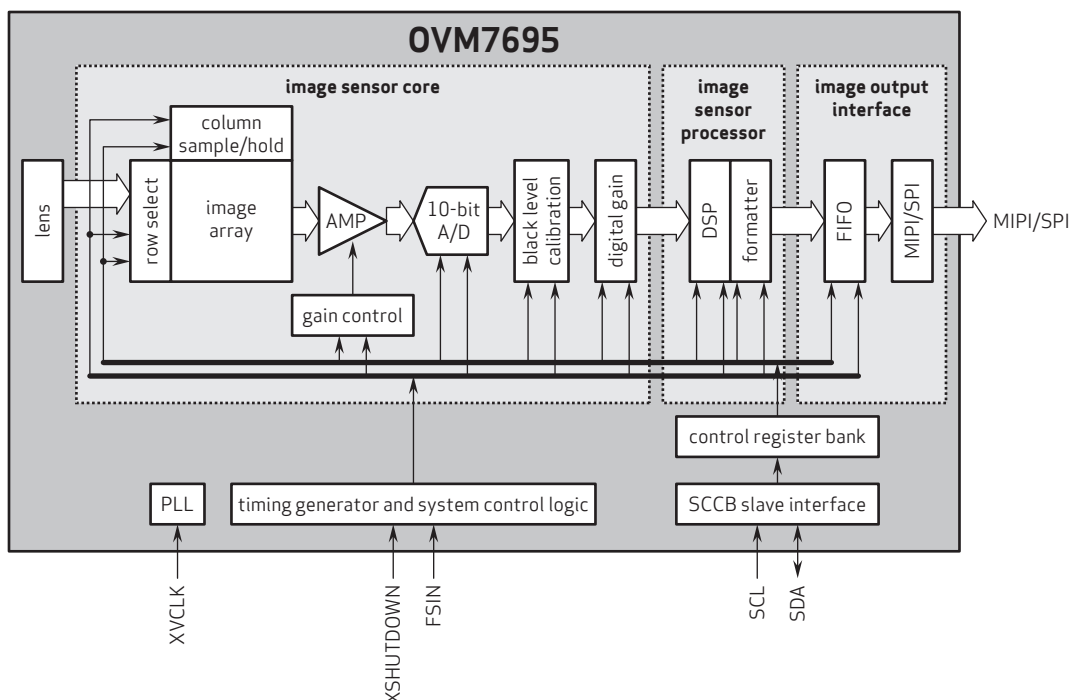- I/O tri-state configurability and programmable polarity
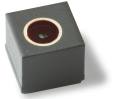
Product Specifications

- **active array size:** 656 x 496

- **power supply:**
  - **core:** 1.5 VDC ±5% (internal regulator)
  - **analog:** 2.8V ±5%
  - **I/O:** 2.8V, 1.8V

- **power requirements:**
  - I_{DD-A}: 15 mA
  - I_{DD-IO}: 20 mA
  - **XSHUTDOWN:** 5 µA

- **temperature range:**
  - **operating:** -30°C to 70°C junction temperature
  - **stable image:** 0°C to 50°C junction temperature

- **output formats:** YUV422, RAW RGB

- **diagonal field of view (FOV):** 61°

- **f no.:** 2.7

- **focal length:** 1.21 mm

- **input clock frequency:** 6 - 27 MHz

- **scan mode:** progressive

- **maximum image transfer rate:**
  - **VGA (640x480):** 30 fps
  - **QVGA (320x240):** 60 fps
  - **QQVGA (160x120):** 120 fps
  - **HF (640x20):** 120 fps

- **sensitivity:** 1200 mV/lux-sec

- **shutter:** rolling shutter

- **max S/N ratio:** 35.9 dB

- **dynamic range:** 66.7 dB @ 16x gain

- **maximum exposure interval:** 536 x t_{ROW}

- **pixel size:** 1.75 µm x 1.75 µm

- **dark current:** 10 e-/s @ 50°C junction temperature

- **image area:** 1148 µm x 868 µm

- **package dimensions (including ball height):**
  - **RAEA:** 2420 x 2350 x 2325 µm
  - **RYEA:** 3000 x 2450 x 2370 µm

Functional Block Diagram

Version 1.2, August, 2014

OmniVision®