



OVM7692 VGA product brief



Feature-rich VGA CameraCube Device for Mobile and Notebook Applications



available in
a lead-free
package

The OVM7692 VGA CameraCube™ device delivers proven performance in an ultra-compact size and with an extended feature set to meet the performance and manufacturing requirements for a new generation of mobile phones, notebooks and netbooks. The reflowable OVM7692 device is a complete VGA camera solution with DVP parallel, MIPI serial interface support, and automatic luminance detection.

The OVM7692 features OmniVision's proprietary OmniPixel3-HS™ architecture, which delivers industry leading low-light sensitivity of 960 mV/lux-sec. The OVM7692's compact size (2.8 x 3.2 x 2.5 mm) ranks among the smallest VGA modules in the industry, which is a critical characteristic for slim camera phones, notebooks and netbooks where the camera can be no thicker than the LCD housing.

The reflowable OVM7692 complete camera solution significantly simplifies design, integration and manufacturing, making it easier and cheaper to source. The OVM7692 is designed to withstand multiple reflows during rework or

dual-sided reflow to meet the stringent requirements of all handset manufacturers.

The OVM7692 comes in a 1/13" optical format, offers automatic exposure control (AEC), automatic gain control (AGC), automatic 50/60 Hz luminance detection and automatic black level calibration (ABLC). It supports horizontal and vertical sub-sampling, mirror, flip, scaling, and windowing. It delivers the following image quality controls: color saturation, hue, gamma, sharpness (edge enhancement), lens correction, defective pixel canceling and noise canceling, as well as support for black sun cancellation. The OVM7692 can interface via DVP parallel output, MIPI serial output, SCCB, and has a programmable I/O drive capability and on-chip phase lock loop. Offering low power consumption, the OVM7692 has a 2.8V power supply and a built-in 1.5V regulator for sensor core power.

Find out more at www.ovt.com.

Applications

- Cellular and Picture Phones
- Entertainment
- PC Multimedia
- Digital Still Cameras

Product Features

- OmniPixel3-HS structure using 0.11 μm process
- optical size of 1/13"
- automatic/manual control of automatic exposure control (AEC), automatic gain control (AGC), automatic 50/60 Hz luminance detection and automatic black level calibration (ABLC)
- support for horizontal and vertical sub-sampling
- mirror, flip, scaling, windowing
- image quality controls: color saturation, hue, gamma, sharpness (edge enhancement), lens correction, defective pixel canceling, and noise canceling
- programmable gamma correction
- support for black sun cancellation
- digital video port (DVP) parallel output interface
- MIPI serial output interface
- serial camera control bus (SCCB) interface
- programmable I/O drive capability
- on-chip phase lock loop (PLL)
- 2.8V power supply
- built-in 1.5V regulator for sensor core power
- low power consumption

OVM7692



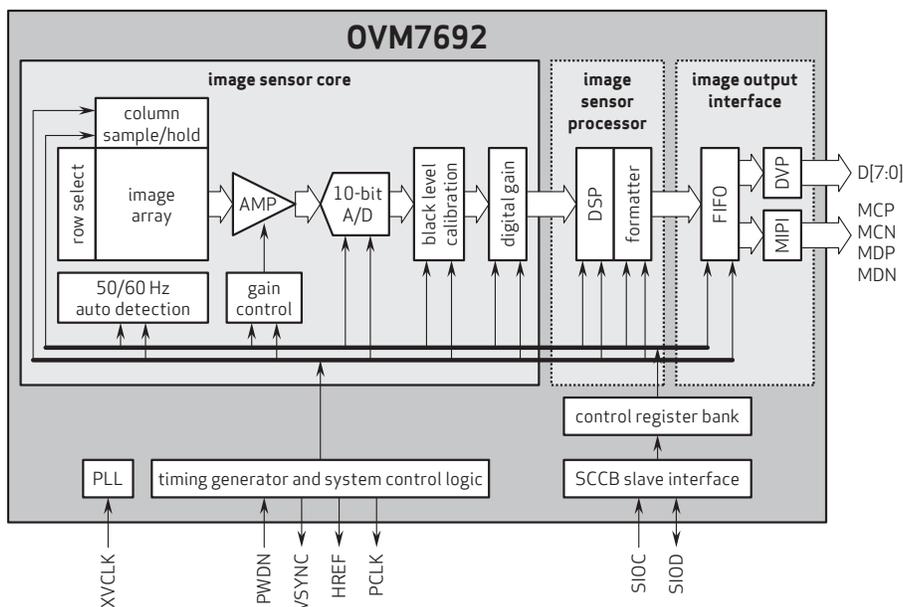
Ordering Information

- **OVM7692-RYAA**
(color, lead-free, CameraCube™ device with metal can)
- **OVM7692-RAAA**
(color, lead-free, CameraCube™ device with black coating)

Product Specifications

- **active array size:** 640 x 480
- **power supply:**
- analog: 2.6 - 3.0V
- I/O: 1.7 - 3.0V
- **power requirements:**
- active: 120 mW @ AVDD = 2.8V, DOVDD = 1.8V
- standby: 23 μA
- **temperature range:**
- operating: -30°C to 70°C junction temperature
- stable image: 0°C to 50°C junction temperature
- **output formats:** RAW 8-bit, RAW 10-bit (for MIPI only), YUV422, RGB565/444
- **optical format:** 1/13"
- **diagonal field of view:** 64°
- **f no.:** 3.0
- **focal length:** 1.15 mm
- **input clock frequency:** 6 - 27 MHz, 54 MHz
- **max S/N ratio:** 38 dB
- **field-of-view:**
- horizontal: 53°
- diagonal: 64°
- **optical layout:** 2-surface lens
- **maximum image circle:** 1.6 mm diameter
- **TV distortion:** -1.2% at 95% field
- **relative illumination (optical):** 58%
- **focus:**
- mechanism: fixed focus
- depth of field: 15 cm \rightarrow ∞
- **IR elimination filter 50% cut-off:** 650 nm
- **dynamic range:** 66 dB
- **maximum image transfer rate:**
- VGA (640x480): 30 fps
- CIF (352x288): 30 fps
- QVGA (320x240): 60 fps
- QCIF (176x144): 60 fps
- **sensitivity:** 960 mV/lux-sec
- **scan mode:** progressive
- **maximum exposure interval:** 511 x t_{row}
- **pixel size:** 1.75 μm x 1.75 μm
- **dark current:** 10 mV/sec @ 60°C junction temperature
- **image area:** 1148 μm x 861 μm
- **package dimensions (not including ball height):** 2827 x 3191 x 2466 μm

Functional Block Diagram



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