

# OV7727 VGA product brief



available in  
a lead-free  
package

## Top Quality VGA for Ultra-Thin Notebooks

The OV7727 is a top-of-the-line VGA sensor for the next generation of high-end, ultra-thin notebooks. The 1/13-inch OV7727 is the first VGA sensor built with a 1.75-micron OmniBSI™ backside illumination pixel, which offers video conference-quality low-light performance of 1300 mV/lux-sec and enables a short lens height to achieve complete camera modules of less than 2.2 mm. The sensor is designed to be integrated with sub-2 mm liquid crystal display (LCD) displays making it ideal for next generation notebooks, netbooks, tablet computers and other portable devices.

The OV7727 offers complete user control over image quality, resolution and output data format. It provides full frame, sub-sampled, windowed or scaled 8-bit/10-bit

images in RAW RGB output format over a parallel DVP interface or serial MIPI port, offering a versatile platform for use in single and multi-camera applications. A new feature on the OV7727 is a serial peripheral interface (SPI), which supports multiple cameras using a single controller, while also offering support to touch screen applications.

The OV7727 comes with image processing functions, including automatic exposure control, automatic white balance control, and dead pixel correction, which are all programmable through the serial camera control bus interface.

Find out more at [www.ovt.com](http://www.ovt.com).

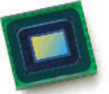
## Applications

- Webcams
- Toys
- PC Multimedia
- Entertainment

## Product Features

- high performance ultra thin profile using OmniBSI™ pixel technology
- automatic image control functions:
  - automatic exposure control (AEC)
  - automatic gain control (AGC)
  - automatic white balance (AWB)
  - automatic black level calibration (ABLCL)
- programmable controls for frame rate, mirror and flip, scaling, cropping, windowing, and panning
- support for output formats: 8/10-bit RAW RGB
- support for horizontal and vertical sub-sampling and binning
- support for external frame synchronization
- standard serial SCCB interface
- digital video port (DVP) parallel output interface
- MIPI serial output interface with independent PLL
- 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

# OV7727



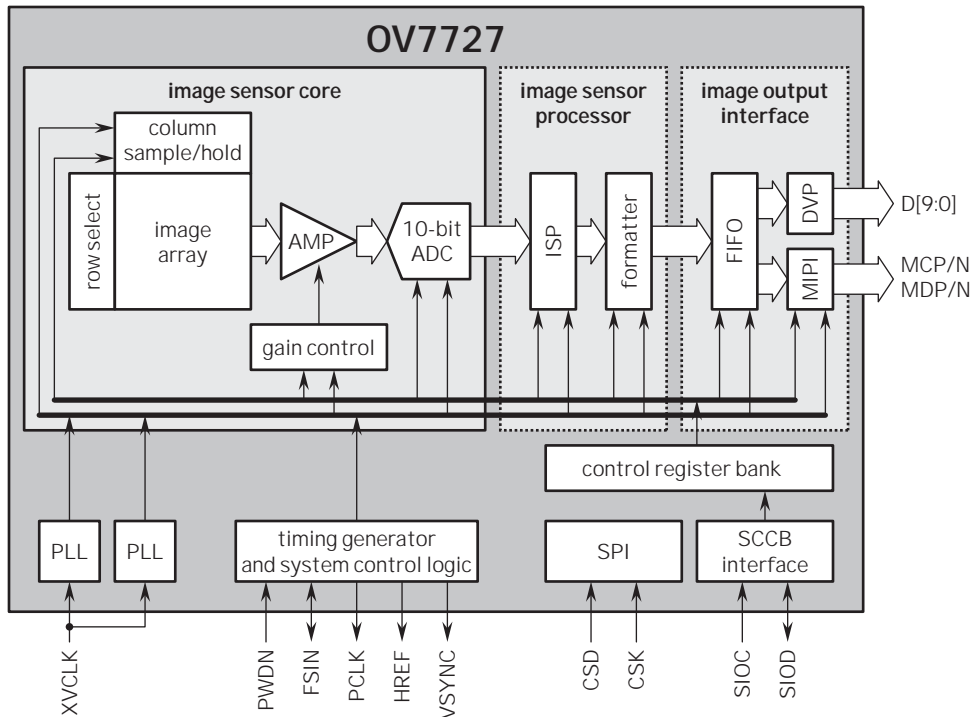
## Ordering Information

- OV07727-A25A (color, lead-free, 25-pin CSP3)
- OV07727-G04A (color, chip probing, 200 μm backgrinding, reconstructed wafer)

## Product Specifications

- active array size: 672 x 492
- power supply:
  - core: 1.5 V
  - analog: 2.8 V (typical)
  - I/O: 1.8 V (typical)
- power requirements:
  - active: 61 mA
  - standby: 30 μA
- temperature range:
  - operating: -30° C to 70° C
  - stable image: 0° C to 50° C
- output formats: 10-bit RAW RGB, 8-bit RAW RGB data
- lens size: 1/13"
- lens chief ray angle: 26°
- input clock frequency: 6 - 27 MHz
- S/N ratio: 36 dB
- dynamic range: 70 dB
- maximum image transfer rate:
  - VGA: 60 fps
  - QVGA: 120 fps
  - QQVGA: 240 fps
- sensitivity: 1300 mV/lux-sec
- scan mode: progressive
- maximum exposure interval: 500 x t<sub>row</sub>
- pixel size: 1.75 μm x 1.75 μm
- well capacity: 6.8 Ke<sup>-</sup>
- dark current: 8 mV/sec @ 60° C
- fixed pattern noise: 1% of V<sub>PEAK-TO-PEAK</sub>
- image area: 1176 μm x 861 μm
- package dimensions:
  - CSP3: 3085 μm x 2785 μm
  - COB: 3100 μm x 2800 μm

## Functional Block Diagram



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