

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!



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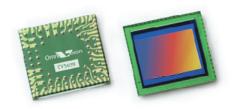
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OV5650 5 megapixel product brief





available in a lead-free package

DSC-Quality Imaging for High-Performance Mobile Phones

Introducing the OV5650, OmniVision's latest 5 megapixel imaging solution for mobile phones featuring 1.75 μm OmniBSITM(backside illumination) technology. OmniBSI technology delivers a number of performance improvements over front-side illumination (FSI) technology, including increased sensitivity per unit area, improved quantum efficiency, reduced crosstalk and photo response non-uniformity, which all lead to significant improvements in image quality.

Designed specifically to address consumer demand for digital still camera (DSC) quality imaging in a mobile phone, the OV5650 combines the industry's best low-light sensitivity at 1300~mV/(lux-sec) and a 2x improvement in (SNR10) signal-to-noise ratio (<70 lux), with the industry's lowest stack height – ideal for today's ultra-slim mobile phones.

The superior pixel performance of the 1/3.2 inch OV5650 enables high frame rate HD video at 60 frames per second (fps) with complete user control over formatting and output data transfer. The OV5650 supports a digital video parallel port or two-lane MIPI, and provides full-frame, windowed or scaled 10-bit images in RAW RGB format, and 256 bytes of available on-chip memory.

Automatic image control features and high frame rates for video encoding deliver vivid still and video images, even in the most challenging lighting conditions.

The OV5650 - simply the best 5 megapixel solution in its class. Find out more at www.ovt.com.



Applications

- ¬ Mobile Phones
- ¬ PC Multimedia
- Games and Toys

Product Features

- ¬ 1.75 μm OmniBSI technology
- ¬ industry's best low light sensitivity
- ¬ 2x improvement in (SNR10) signal-to-noise ratio <70 lux
- ¬ industry's lowest stack height
- \neg high frame HD video at 60 fps
- \neg $\,$ improved quantum efficiency and crosstalk
- $\neg \;$ programmable controls for mirror and flip, cropping, windowing, and panning
- ¬ image quality controls: lens correction, $2\text{-}D\,defective\ pixel\ canceling}$
- ¬ support for video or snapshot operations
- ¬ support for LED and flash strobe

- ¬ support for horizontal and vertical sub-sampling
- ¬ standard serial SCCB interface
- ¬ digital video port (DVP) parallel output interface
- ¬ MIPI interface (two lanes)
- ¬ 256 bytes of embedded one-time programmable (OTP) memory
- ¬ embedded 1.5 V regulator for core
- programmable I/O drive capability, I/O tri-state configurability
- ¬ support for black sun cancellation
- suitable for module size of 8.5 x 8.5 x 6 mm

OV5650



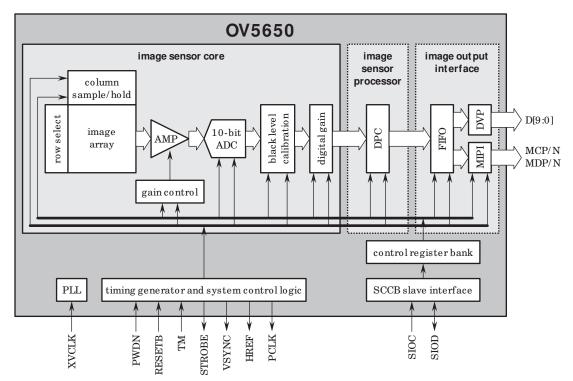
- ¬ OV05650-A66A (color, lead-free, 66-pin CSP3)
- ¬ OV05650-G04A (color, chip probing, 200 µm backgrinding, reconstructed wafer)

Product Specifications

- ¬ active array size: 2592 x 1944
- power supply:
- core: 1.5 V ±5% (with embedded 1.5 V
- regulator) analog: 2.6~3.0 V (2.8 V typical)
- I/O: 1.8 V/2.8 V
- ¬ power requirements:
 - active: 150 mA - st andby: 40 μA
- temperature range: operating: -30° C to 70° C stable image: 0° C to 50° C
- ¬ output formats: 8/10-bit raw RGB output
- ¬ lens size: 1/3.2"
- ¬ lens chief ray angle: 25°
- ¬ input clock frequency: 6~27 MHz

- ¬ S/Nratio:37 dB
- ¬ dynamic range: 69 dB
- maximum image transfer rate:QSXGA (2592 x 1944):15 fps
- -1080p:30 fps
- 720p:60 fps VGA (640 x 480):90 fps
- QVGA (320 x 240): 120 fps
- ¬ sensitivity:1300 mV/(lux sec)
- ¬ shutter:rolling shutter
- \neg pixel size: 1.75 $\mu m \times 1.75 \mu m$
- ¬ image area: 4592 μm x 3423 μm
- ¬ package/ die dimensions: CSP3:6505 μm x 6005 μm
- COB: 6500 μm x 6000 μm

Functional Block Diagram



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