**OV9762** HD product brief

Best-In-Class 720p High Definition Video
For Front-Facing Cameras in Smartphones and Tablets

The OV9762 is a high performance CameraChip™ sensor designed specifically for front-facing camera applications in smartphones and tablets. The OV9762 leverages OmniVision’s first 1.87-micron OmniBSI-2™ pixel to deliver improved performance and best-in-class 720p high definition (HD) video at 30 frames per second (fps).

The sensor’s slightly larger 1.87-micron pixel enables enhanced image and video quality in a compact package that is pin-to-pin compatible with the previous-generation OV9760 CameraChip sensor.

The OV9762 can record 1.3-megapixel (1376 x 960 pixels) video at 30 fps, or best-in-class 720p HD video at 30 fps with electronic image stabilization (EIS). When binned to VGA resolution (640 x 480 pixels) video, the sensor delivers twice the sensitivity compared to full resolution, ensuring high quality video capture in difficult low-light conditions.

The OV9762 fits into a 4.3 x 4.1 mm package.

Find out more at www.ovt.com.
Applications
- Cellular Phones
- Digital Video Camcorders (DVC)
- Digital Still Cameras (DSC)
- PC Multimedia

Product Features
- Automatic black level calibration (ABLC)
- Programmable controls for frame rate, mirror and flip, cropping and windowing
- Image quality controls: defective pixel canceling
- Supports output formats: 10-bit RAW RGB MIPI
- Supports horizontal and vertical subsampling
- Supports image sizes: 1376x960, 688x480, 344x240
- Fast mode switching
- Support 2x2 binning
- Standard serial SCCB interface
- Supports MIPI data transfer rate of up to 1 Gbps
- One-lane MIPI serial output interface with slow rate control
- Embedded 8K bits one-time programmable (OTP) memory for part identification, etc.
- Two on-chip phase lock loop (PLL)
- Programmable I/O drive capability
- Built-in 1.2V regulator for core
- Built-in temperature sensor
- Ambient light sensor (ALS) mode

Product Specifications
- Active array size: 1376 x 960
- Power supply:
  - Core: 1.08 - 1.32V
  - Analog: 2.7 - 3.0V
  - I/O: 1.62 - 1.98V
- Power requirements:
  - IDD-IO: 23 mA
  - IDD-A: 37 mA
  - XSHUTDOWN: 5 µA
- Temperature range:
  - Operating: -40°C to 85°C junction temperature
  - Stable image: -15°C to 65°C junction temperature
- Output formats: 10-bit RAW RGB data
- Lens size: 1/5.7"
- Lens chief ray angle: 28.1°
- Input clock frequency: 6 - 27 MHz
- Max S/N ratio: 38.6 dB
- Dynamic range: 73 dB @ 16x gain
- Maximum image transfer rate:
  - 1376 x 960: 30 fps
  - 688 x 480: 60 fps
  - 344 x 240: 120 fps
- Sensitivity: 1450 mV/lux-sec
- Scan mode: progressive
- Maximum exposure interval: 1000 x 1024
- Pixel size: 1.87 µm x 1.87 µm
- Dark current: 31 e-/sec @ 60°C junction temperature
- Image area: 2618 µm x 1840.08 µm

 Ordering Information
- OV9762-G04A
  (color, chip probing, 200 µm backgrinding, reconstructed wafer with good die)
- OV9762-G05A
  (color, chip probing, 150 µm backgrinding, reconstructed wafer with good die)

Functional Block Diagram

OV9762

Image sensor array
- Image array
- Column sample/hold
- Row select

Image sensor processor
- AMP
- 10-bit ADC
- Gain control
- Black level calibration

Image sensor array
- ISP
- System control logic
- Timing generator

Output interface
- MDP/N
- MCP/N
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