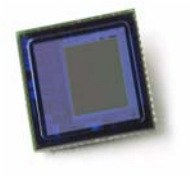


OV2655 2 megapixel product brief

lead free

available in a lead-free package

high sensitivity 1/5-inch 2 megapixel CameraChip™ sensor

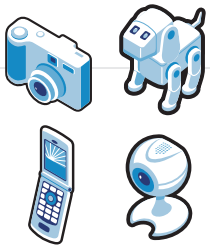
The OV2655 is a single-chip, high-performance 2 megapixel CMOS CameraChip sensor with a 1/5-inch optical format. The OV2655 is based on OmniVision's 1.75 micron OmniPixel3-HS™ architecture which uses Ultra Low Stack Height (ULSH) pixels to acheive industry-leading low-light sensitivity of 1030 mV/(Lux-sec), which is vital for high frame rate video applications. The small form factor of the OV2655 also makes it possible for it to fit in a 6.5 x 6.5 mm camera module.

The OV2655 operates at up to 15 frames per second (fps) in full resolution and 30 fps in SVGA mode. The captured data can be transferred either by a standard parallel digital video port (DVP) or by a single-lane MIPI high-speed serial interface. The DVP can also be used for input from an external secondary camera, enabling the advanced ISP of the OV2655 to be used by the secondary camera with continued output through the MIPI interface.

Despite its small form factor, the OV2655 has an advanced image signal processor embedded with all functions required by a high-performance camera.

For identification purposes, the OV2655 includes one-time programmable (OTP) memory.

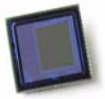
OmniVision



applications

- mobile phones
- toys
- PC multimedia
- digital still cameras

OV2655



ordering information

- **OV02655-V38A**
  (color, lead-free, 38-pin CSP2)
- **OV02655-G00A**
  (color, chip probing, no backgrinding)

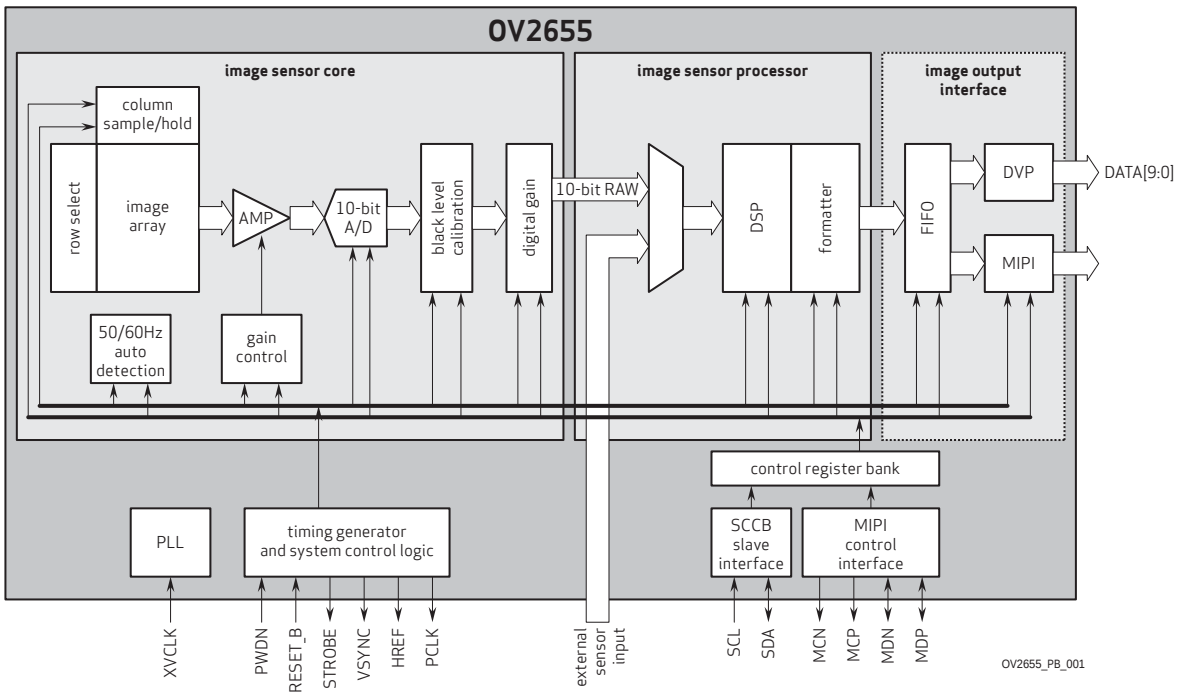
product features

- industry leading low-light sensitivity of 1030 mV(Lux-sec)
- ultra low power and low cost
- automatic image control functions:
  - automatic exposure control (AEC)
  - automatic white balance (AWB)
  - automatic 50/60 Hz luminance detection
  - automatic black level calibration (ABLC)
- support for output formats: RAW RGB, RGB565/555, YUV422/420, and YCbCr422
- programmable controls for frame rate, AEC/AGC 16-zone size/position/weight control, mirror and flip, scaling, cropping, and windowing
- image quality controls: color saturation, hue, gamma, sharpness (edge enhancement), lens correction, defective pixel canceling, and noise canceling
- support for:
  - video or snapshot operations
  - auto focus control (AFC)
  - horizontal/vertical sub-sampling
  - internal and external frame synchronization
  - LED and flash strobe mode
- second CameraChip-sharing ISP and MIPI interface
- standard serial SCCB interface
- digital video port (DVP) parallel output interface
- MIPI serial output interface
- embedded one-time programmable (OTP) memory

product specifications

- **array size:** 1600 x 1200
- **power supply:**
  - **core:** 1.5VDC + 5%
  - **analog:** 2.45 - 3.0V
  - **I/O:** 1.7 - 3.0V
- **power requirements:**
  - **active:** 250 mW
  - **standby:** 75 µA
- **temperature range:**
  - **operating:** -20° C to 70°C
  - **stable image:** 0° C to 50° C
- **output format (8-bit):**
  - YUV(422/420)
  - YCbCr422
  - RGB565/555
  - 8-/10-bit raw RGB data
- **lens size:** 1/5"
- **chief ray angle:** 25° non-linear
- **input clock frequency:** 6 - 27 MHz
- **max image transfer rate:**
  - **UXGA (1600 x 1200):** 15 fps (and any size scaling down from UXGA)
  - **SVGA (800 x 600):** 30 fps (and any size scaling down from SVGA)
- **S/N ratio:** 38 dB
- **dynamic range:** 66 dB
- **sensitivity:** 1030 mV/(Lux-sec)
- **maximum exposure interval:** 1235 x t_{ROW}
- **pixel size:** 1.75 µm x 1.75 µm
- **image area:** 2842 µm x 2121 µm
- **package/die dimensions:**
  - **CSP2:** 4835 µm x 4895 µm
  - **COB:** 4850 µm x 4910 µm

functional block diagram



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