KLT-B5PF-OV7675 V1.0

OmniVision OV7675 Parallèle DVP Interface Mise au point fixe 0.3MP VGA Module de caméra

Module de caméra No.	KLT-B5PF-OV7675 V1.0
Capteur d'image	OV7675
EFL	1.9 mm
F.NO	2.8 24-5804-024-000-829
Pixel	640 x 480 (VGA)
Angle de vue	57°
Type d'objectif	1/9 pouce
Dimensions de l'objectif	5.00 x 5.00 x 3.55 mm
Taille du module	8.00 x 8.00 mm
Type de module	Mise au point fixe
Interface	Parallèle DVP

Référence du connecteur d'accouplement. AXT524124

Connecteur d'accouplement sur la carte principale. Vendu séparément.

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OV7675 VGA product brief

Higher Performance, Feature Rich VGA Sensor to Support Fast Growing Emerging Markets

lead free

available in a lead-free package

The OV7675 is a high performance VGA sensor designed specifically to address growing demand for consumer electronics from emerging markets. Its small optical format enables ultra-thin camera modules, which, combined with its excellent low-light performance, make it a very attractive solution for entry-level and mainstream mobile phones, notebooks, netbooks and webcams.

The OV7675 is a low-voltage color CMOS image sensor that supports the full functionality of a single chip VGA (640 x 480) camera in a small footprint package. The 1/9-inch OV7675 uses a unique 2.5-micron OmniPixel3-HS™ pixel design, which allows it to offer best-in-class low-light sensitivity (1800 mV/lux-sec), significantly reduced noise and outstanding color reproduction.

The OV7675 provides full-frame, sub-sampled, windowed images in VGA, QVGA and QQVGA formats via the control of the serial camera control bus (SCCB) interface. Its image array is capable of operating at up to 30 frames per second (fps) in full VGA resolution with complete user control over image quality, formatting and output data transfer.

All required image processing functions, including exposure control, gamma, white balance, color saturation, hue control, defective pixel canceling, noise canceling are programmable through the SCCB interface. In addition, OmniVision image sensors use proprietary sensor technology to improve image quality by reducing or eliminating common lighting/electrical sources of image contamination, such as fixed pattern noise and smearing to produce a clean, fully stable color image.
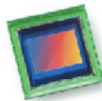
Find out more at www.ovt.com.

Omni Vision®

Applications

- Mobile Phones
- Notebooks/Netbooks and Webcams

OV7675

Ordering Information

- OV07675-A23A
  (color, lead-free, 23-pin CSP3)

- OV07175-A23A
  (B&W, lead-free, 23-pin CSP3)

- OV07675-G04A
  (color, chip probing, 200 µm
  backgrinding, reconstructed wafer)

Product Features

- support for image sizes:
  VGA (640 x 480), QVGA (320 x 240)
  and QQVGA (160 x 120)

- support for output formats:
  YUV4:2:2, RAW RGB, ITU656, RGB565

- digital video port (DVP) parallel output
  interface

- on-chip phase lock loop (PLL)

- built-in 1.5V regulator for core

- capable of maintaining register values
  at power down

- programmable controls for
  frame rate, mirror and flip, AEC/AGC,
  and windowing

- support for horizontal and vertical
  sub-sampling

- automatic image control functions:
  - automatic exposure control (AEC)
  - automatic white balance (AWB)
  - automatic black level calibration (ABLC)

- image quality controls: defect pixel
  correction and lens shading correction

- support for black sun cancellation

- standard serial SCCB interface

- parallel I/O tri-state configurability
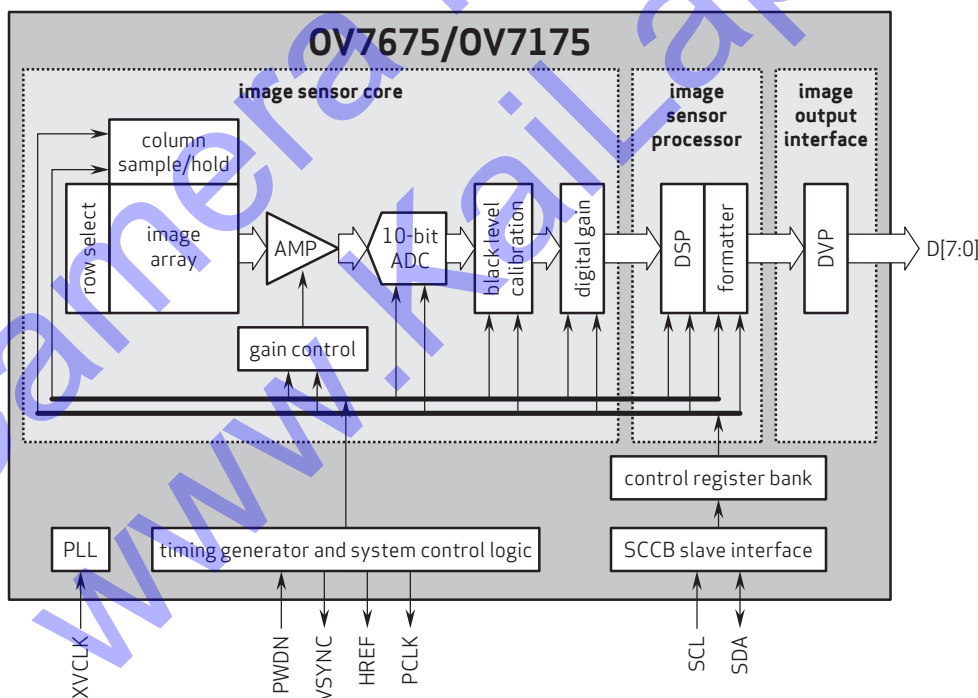 and programmable polarity

- module size: 6 mm x 6 mm

Product Specifications

- **active array size:** 640 x 480

- **power supply:**
  - **analog:** 2.6 - 3.0 V
  - **core:** 1.5 V ±5% (internal regulator)
  - **I/O:** 1.71 - 3.0 V

- **power requirements:**
  - **active:** 98 mW
  - **standby:** 60 µW

- **temperature range:**
  - **operating:** -30°C to 70°C junction
    temperature
  - **stable image:** 0°C to 50°C junction
    temperature

- **output formats:** YUV422, RAW RGB,
  ITU656, RGB565

- **lens size:** 1/9"

- **lens chief ray angle:** 21°

- **input clock frequency:** 1.5 - 27 MHz

- **scan mode:** progressive

- **maximum image transfer rate:**
  - **VGA:** 30 fps
  - **QVGA:** 60 fps
  - **QQVGA:** 240 fps

- **sensitivity:** 1800 mV/lux-sec

- **shutter:** rolling shutter

- **max S/N ratio:** 38 dB

- **dynamic range:** 71 dB @ 8x gain

- **maximum exposure interval:**
  510 x t_{ROW}

- **pixel size:** 2.5 µm x 2.5 µm

- **dark current:** 10 mV/s @ 60°C
  junction temperature

- **image area:** 1640 µm x 1220 µm

- **package dimensions:**
  - **CSP3:** 2815 µm x 2825 µm
  - **COB:** 2830 µm x 2840 µm

Functional Block Diagram