KLT-KR7-OV7251 V2.0

OmniVision OV7251 全局快门 **MIPI**串行接口 固定焦距 **30**万像素 **VGA** 摄像头模组

摄像头模组型号	**KLT-KR7-OV7251 V2.0**
图像感光芯片	OV7251
焦距	1.67 mm
光圈	2.8
像素	640 x 480 (VGA)
可视角度	69°
镜头类型	1/7.5 英寸
镜头尺寸	6.00 x 6.00 x 3.02 mm
模组尺寸	25.00 x 12.50 mm
模组类型	固定焦距
接口	MIPI串行

配对连接器型号：   FH12-24S-0.5SH
主板上的对应连接器。分开售卖。

OV7251 *VGA* product brief

Low Power and Compact CameraChip™ Sensor with Industry's Smallest Global Shutter Pixel

lead free

available in a lead-free package

The OV7251 is a small form factor, low power CameraChip™ sensor that uses a global shutter to reduce or eliminate unwanted image artifacts, which occur with traditional rolling shutter image sensors as a result of motion during image capture. The sensor's global shutter and excellent low-light sensitivity allow it to be used for any application that has a need for gesture detection, head and eye tracking, and depth and motion detection.

The OV7251's compact form factor makes it a highly attractive camera solution for space-constrained applications such as head-mounted displays, smartphones, tablets, notebooks and Ultrabooks. Likewise, the sensor's low-power consumption makes it an ideal dedicated gesture sensor for similar application areas.

Leveraging the industry's smallest global shutter pixel, the black and white OV7251 is capable of capturing VGA (640x480) resolution video at 120 frames per second (fps), QVGA (320x240) at 180 fps with binning, and QQVGA (160x120) at 360 fps with binning and skipping. The OV7251's high frame rates make it an ideal solution for low-latency machine vision applications.

The 1/7.5-inch OV7251 features multiple low-power modes, including light sensing mode and ultra-low power standby mode. In light sensing mode, the OV7251 behaves like an Ambient Light Sensor (ALS), which wakes the sensor up from "sleep mode" only when a change in light has been detected. Similarly, in ultra-low power mode, the sensor can reduce the resolution and frame rates to further reduce power consumption.

Find out more at www.ovt.com.

OmniVision®

Applications

- Cellular Phones
- Digital Still Cameras (DSC)
- Digital Video Camcorders (DVC)
- PC Multimedia
- Tablets
- Wearable Devices

OV7251

Product Features

- 3 µm x 3 µm pixel with OmniPixel3-GS™ technology
- automatic black level calibration (ABLC)
- programmable controls for:
  - frame rate
  - mirror and flip
  - cropping and windowing
- support output formats: 8-/10-bit RAW
- support for image sizes:
  - 640 x 480
  - 320 x 240
  - 160 x 120
- fast mode switching
- supports horizontal and vertical 2:1 and 4:1 monochrome subsampling
- ambient light sensor mode
- ULPM mode
- supports 2x2 monochrome binning
- one-lane MIPI serial output interface
- one-lane LVDS serial output interface
- embedded 256 bits of one-time programmable (OTP) memory for part identification
- two on-chip phase lock loops (PLLs)
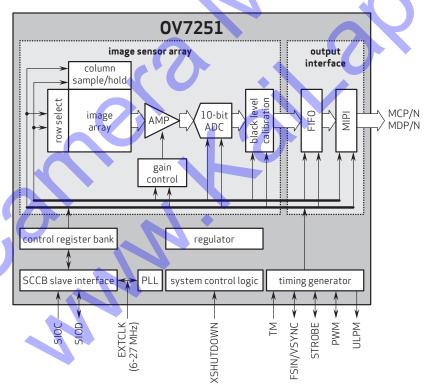- built-in 1.5V regulator for core
- PWM
- built-in strobe control

Product Specifications

- **active array size:** 640 x 480
- **power supply:**
  - **core:** 1.5V (optional)
  - **analog:** 2.8V (nominal)
  - **I/O:** 1.8V (nominal)
- **power requirements:**
  - **active:** 119 mW @ 120 fps, VGA output
  - **standby:** 15 µA for AVDD, 40 µA for DOVDD without input clock, 700 µA for DOVDD with input clock
  - **XSHUTDOWN:** 5 µA for AVDD, 5 µA for DOVDD
- **temperature range:**
  - **operating:** -30°C to +70°C junction temperature
  - **stable image:** 0°C to +50°C junction temperature
- **output interface:** 1-lane MIPI/LVDS serial output
- **output formats:** 10-bit B&W RAW

- **lens size:** 1/7.5"
- **input clock frequency:** 6 - 27 MHz
- **lens chief ray angle:** 29° non-linear
- **max S/N ratio:** 39 dB
- **dynamic range:** 69.6 dB @ 8x gain
- **maximum image transfer rate:**
  - **640x480:** 120 fps
- **scan mode:** progressive
- **maximum exposure interval:** $502 \times t_{ROW}$
- **pixel size:** 3 µm x 3 µm
- **image area:** 1968 µm x 1488 µm
- **package dimensions:**
  - **CSP3:** 3910 µm x 3410 µm
  - **COB:** 3900 µm x 3400 µm

Functional Block Diagram

OmniVision®