

CMOS CAMERA MODULES



your BEST camera module partner

JAL-KR7-OV7251 V1.0

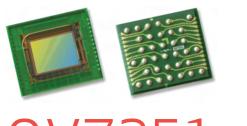
OmniVision OV7251 Global Shutter MIPI Interface Fixed Focus 0.3MP VGA Camera Module



Camera Module No.	JAL-KR7-OV7251 V1.0
Image Sensor	OV7251
EFL	1.67 mm
F.NO	3.0
Pixel	640 x 480 (VGA)
View Angle	69°
Lens Type	1/7.5 inch
Lens Dimensions	6 x 6 x 3.02 mm
Module Size	25 x 12.5 mm
Module Type	Fixed Focus
Interface	MIPI



www.KaiLapTech.com sales@KaiLapTech.com Tel: (852) 6908 1256 Fax: (852) 3017 6778



077251 VGA product brief





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

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.





Applications

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

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

OV7251



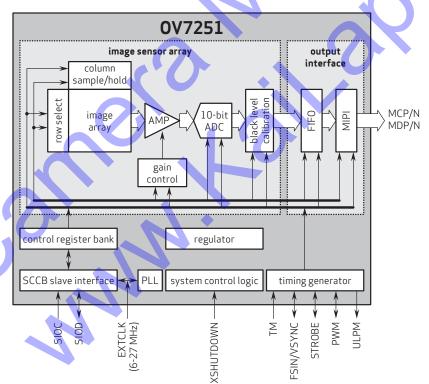
■ 0V07251-A35A-1G (B&W, lead-free, 35-pin CSP3) ■ 0V07251-G04A-1G (B&W, chip probing, 200 µm backgrinding, reconstructed wafer)

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 dynamic range: 69.6 dB @ 8x gain
 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

- input clock frequency: 6 27 MHz
- lens chief ray angle: 29° non-linear
- max S/N ratio: 39 dB
- maximum image transfer rate:-640x480: 120 fps
- scan mode: progressive
- maximum exposure interval: 502 x 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



4275 Burton Drive Santa Clara, CA 95054

Tel: +1 408 567 3000 Fax: +1 408 567 3001 www.ovt.com

OmniVision reserves the right to make changes to their products or to discontinue any product or service without further notice. OmniVision and the OmniVision logo are registered trademarks of OmniVision Technologies, Inc. CameraChip and OmniBSI-2 are trademarks of OmniVision Technologies, Inc. All other trademarks are the property of their respective owners.

