

CMOS CAMERA MODULES



your BEST camera module partner

JAL-KH5-OV2643 V1.0

OmniVision OV2643 DVP Parallel Interface Fixed Focus 2MP Camera Module



Camera Module No.	JAL-KH5-OV2643 V1.0
Image Sensor	OV2643
EFL	3.23 mm
F.NO	2.8
Pixel	1600 x 1200 (UXGA)
View Angle	75°
Lens Type	1/4 inch
Lens Dimensions	8.5 x 8.5 x 4.7 mm
Module Size	8.5 x 8.5 mm
Module Type	Fixed Focus
Interface	DVP Parallel



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









High-Performance 2-Megapixel SOC Camera for the High-Volume, Feature Rich Phone Market

Designed to address the increasing demand for 2-megapixel resolution cameras in mainstream feature phones, the OV2643 brings high-definition (HD) video and excellent low-light sensitivity to this high-volume market. The OV2643 targets high-performance applications in a 1/4-inch optical format that fits the critical 6.5 x 6.5 mm camera module size. The OV2643 implements OmniVision's advanced 2.2-micron OmniPixel3-HS™ architecture to achieve a sensitivity of 1250 mV/lux-sec, enabling excellent image quality under the most challenging lighting conditions.

The OV2643 is a system on a chip (SOC) CMOS image sensor with advanced image signal processing that allows it to offer the quality and functionality of most high-performance DSC cameras, including support for 720p HD video recording at 30 frames per second, excellent sensitivity and high quality image capture while meeting the cost, size and performance requirements of the feature phone market.

The OV2643 offers automatic image control functions, which include automatic exposure control, automatic white balance and automatic black level calibration. It also features all standard image quality controls such as color saturation, hue, gamma, sharpness (edge enhancement), lens correction, defective pixel canceling and noise canceling and support for black sun cancelation.

The OV2643 comes with a standard serial SCCB interface and digital video port (DVP) parallel output interface, offering support for UXGA, SVGA and 720p with programmable controls for frame rate as well as video operations.

Find out more at www.ovt.com.



Applications

- Mobile Phones
- Notebooks and Webcams
- Entertainment

Product Features

- ultra low power and low cost
- automatic image control functions: - automatic exposure control (AEC)
 - automatic white balance (AWB)
 - automatic band filter (ABF)
 - automatic black level calibration (ABLC)
- programmable controls for frame rate, AEC/AGC 16-zone size/position/weight control, mirror and flip, and windowing
- image quality controls: color saturation, programmable I/O drive capability hue, gamma, sharpness (edge enhancement), lens correction, defective pixel canceling, and noise canceling
- support for output formats: RAW RGB, RGB565/555, YUV422, YCbCr422 and GBR422
- support for images sizes: UXGA, SVGA,

- support for video operations
- support for horizontal and vertical sub-sampling, binning
- standard serial SCCB interface
- digital video port (DVP) parallel output interface
- on-chip phase lock loop (PLL)
- support for black sun cancellation
- built-in regulator for DVDD
- suitable for module size of 6.5 mm x 6.5 mm



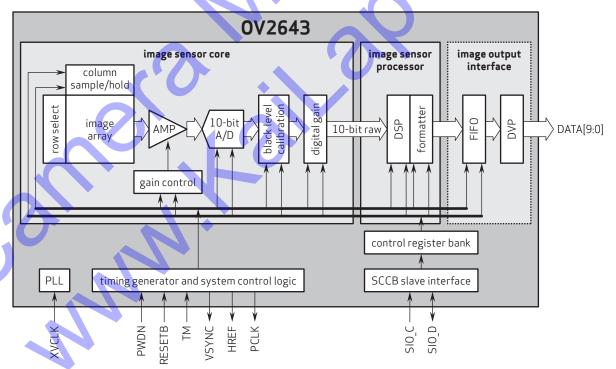
■ 0V02643-A42A (color, lead-free, 42-pin CSP3)

Product Specifications

- active array size: 1624 x 1212
- power supply: core: 1.5 VDC ±5% analog: 2.6 3.0 V I/O: 1.7 3.0 V
- power requirements: active: 150 mW
- standby: 30 µA
- temperature range:
 operating: -20°C to 70°C junction temperature
- stable image: 0°C to 50°C junction temperature
- output formats: YUV422/YCbCr422, GBR422, RGB565/555, 8/10-bit RAW RGB data
- lens size: 1/4"
- lens chief ray angle: 25° non-linear
- input clock frequency: 6 27 and 54 MHz

- max S/N ratio: 39 dB
- dynamic range: 66 dB @ 8x gain
- maximum image transfer rate:
 UXGA (1600x1200): 15 fps
 SVGA (800x600): 30 fps
- 720p (1280x720): 30 fps
- sensitivity: 1250 mV/lux-sec
- shutter: rolling shutter
- scan mode: progressive
- maximum exposure interval: 1227 x t_{ROW}
- gamma correction: programmable
- **pixel size:** 2.2 μm x 2.2 μm
- image area: 3590 μm x 2710 μm
- package dimensions: 5035 μm x 4635 μm

Functional Block Diagram



4275 Burton Drive Santa Clara, CA 95054

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

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