



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

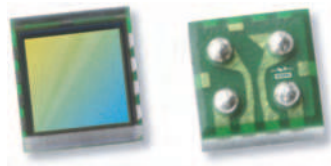
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# OV6946 400x400 product brief



## Cost-Effective, Ultra-Compact Camera Solution for Medical and Industrial Endoscopes



available in  
a lead-free  
package

OmniVision's OV6946 is an ultra-compact CameraChip™ sensor that brings high quality images and video with excellent color fidelity to endoscopes. The 1/18-inch sensor's 0.9 x 0.9 mm compact package, low power consumption, coupled with wide field-of-view with short focus distance make it an ideal camera solution for medical and industrial applications.

Utilizing an advanced 1.75-micron OmniBSI+™ pixel, the OV6946 captures high quality 400 x 400 resolution

images and video at 30 frames per second (fps). The OV6946 enables minimally invasive endoscope module designs with a width of 1.65 mm and height of 5 mm.

The OV6946 CameraChip sensor's reduced pinout and basic image signal processing functionality offer easy integration, enabling faster time-to-market.

Find out more at [www.ovt.com](http://www.ovt.com).



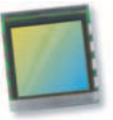
## Applications

- Medical Endoscopes
- Industrial Videoscopes
- Security and Surveillance
- Toys and Games
- Wearable Devices

## Product Features

- optical size of 1/18"
- analog output
- automatic/manual control of exposure and gain
- on-chip PLL
- low power consumption
- single 3.3V power supply
- serial peripheral interface (SPI)
- OmniBSI™ pixel structure using 0.11 μm process

# OV6946



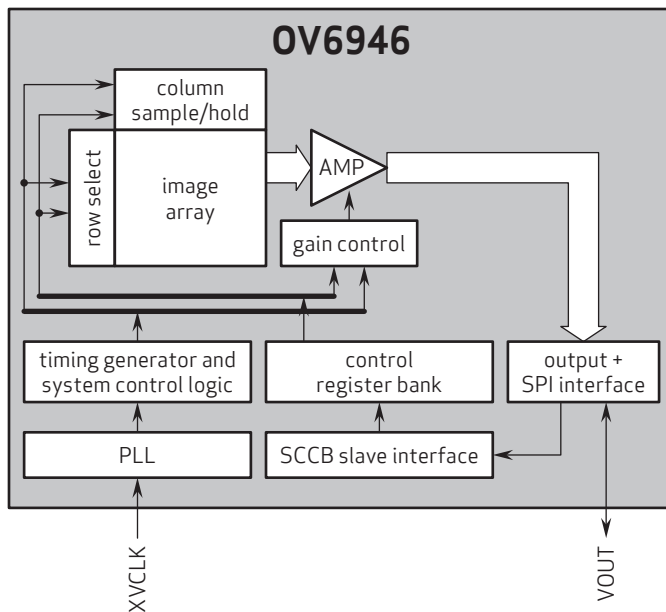
## Ordering Information

- **OV06946-A04A**  
(color, lead-free, 4-pin CSP3)

## Product Specifications

- **active array size:** 400 x 400
- **power supply:**  
- analog: 3.3V ± 5%
- **power requirements:**  
25 mW (with IO consumption)
- **temperature range:**  
- operating: -20°C to +70°C junction temperature  
- stable image: 0°C to +50°C junction temperature
- **output formats:** analog signal output
- **lens size:** 1/18"
- **lens chief ray angle:** 25°
- **frame rate:**  
- half VGA (400x400): 30 fps
- **maximum exposure:** 876 x T<sub>LINE</sub>
- **minimum exposure time:** 72.15 μs
- **scan mode:** progressive
- **max S/N ratio:** 34.4 dB
- **dynamic range:** 65.8 dB @ 4x gain
- **sensitivity:** 1000 mV/lux-sec
- **color mosaic:** RGB Bayer pattern
- **pixel size:** 1.75 μm x 1.75 μm
- **dark current:** 42 e<sup>-</sup>/sec @ 60°C junction temperature
- **image area:** 714 μm x 707 μm
- **package dimensions:** 950 μm x 940 μm

## Functional Block Diagram



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