

OVM6946 400 x 400 product brief



Compact, Cost-Effective Wafer-Level Camera Module for Single-Use Endoscopes



available in
a lead-free
package

OmniVision's OVM6946 is a compact camera module for medical applications such as minimally-invasive endoscopes. The 1/18-inch OVM6946 utilizes OmniVision's market-proven CameraCubeChip™ wafer-level module technology to streamline manufacturing processes and shorten time-to-market, and is the industry's most cost-effective single-chip imaging solution for single-use endoscopes.

Built on OmniVision's OmniBSI™+ pixel architecture, the OVM6946 captures high quality 400 x 400 resolution video at 30 frames per second (fps). The OVM6946

comes in a compact 1.05 mm x 1.05 mm package with a z-height of 2.27 mm, enabling a wide 120-degree field of view with an extended focusing range of 5 mm to 50 mm. The OVM6946 is well-suited to a wide range of endoscope applications, including medical, veterinarian, and industrial.

Find out more at www.ovt.com.



Applications

- Medical, Dental, Veterinarian, Industrial Endoscopes

Product Features

- optical size of 1/18"
- non-autoclavable
- 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
- extra black coating version (OVM6946-RAJH)

OVM6946



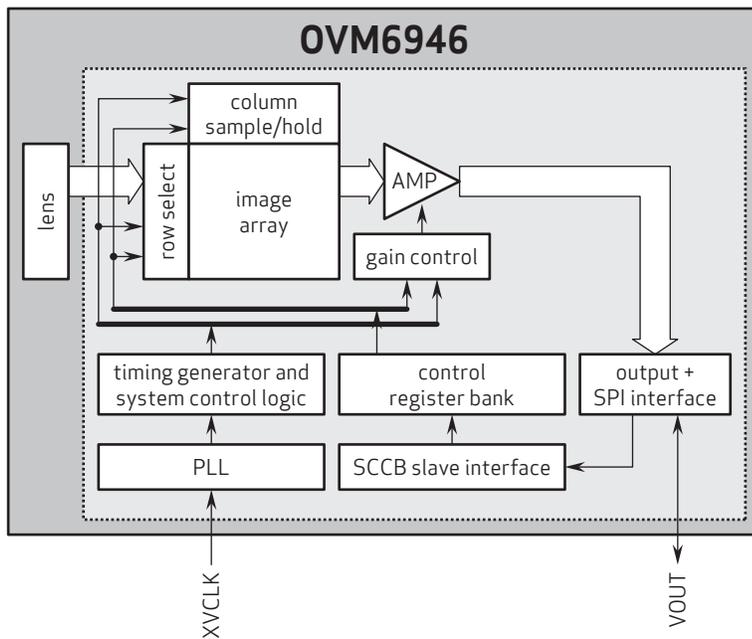
Ordering Information

- **OVM6946-RAJA**
(color, lead-free) CameraCubeChip™ with black coating
- **OVM6946-RAJH**
(color, lead-free) CameraCubeChip™ with extra black coating

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"
- **diagonal field of view (FOV):** 120°
- **f no.:** 5.0
- **focal length:** 0.418 mm
- **maximum exposure:** 876 x T_{LINE}
- **minimum exposure time:** 72.15 μs
- **frame rate:**
- 160 Kpixel (400x400): 30 fps
- **scan mode:** progressive
- **max S/N ratio:** 36.8 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
- **image area:** 714 μm x 707 μm
- **net weight:** 4.62 mg
- **package dimensions (including ball height):**
- RAJA: 1100 x 1100 x 2266 μm
- RAJH: 1100 x 1100 x 2266 μm

Functional Block Diagram



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