

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 compact 1.10 mm x 1.10 mm packages with z-heights of 2.37 or 2.27 mm, enabling a 90° or 120° diagonal field of view. 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 versions available

- OVM6946-RAJA (color, lead-free) 4-pin 160k CameraCubeChip*, LA silicon, 120° DFOV
- OVM6946-RAJA-1B (color, lead-free) 4-pin 160k CameraCubeChip[®], HK silicon, 120° DFOV

Technical Specifications

- active array size: 400 × 400
- frame rate: - 160 Kpixel (400x400): 30 fps
- 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):
 RAJA: 120° ±3°
 RANA: 90° ±3°

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- OVM6946-RANA-1B (color, lead-free) 4-pin 160k CameraCubeChip[®], HK silicon, 90° DFOV
- fno.:
 - RAJA: 5.0 - RANA: 4.0
 - focal length:
 RAJA: 0.418 mm - RANA: 0.505 mm
 - scan mode: progressive
 - color mosaic: RGB Bayer pattern
 - pixel size: 1.75 μm x 1.75 μm
 - **image area**: 714 µm x 707 µm
 - net weight:
 RAJA: 4.62 mg
 RANA: 4.587 mg
 - package dimensions (including ball height): RAJA: 1100 × 1100 × 2266 µm RANA: 1100 × 1100 × 2362 µm

Functional Block Diagram



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