OVM6946 400 x 400 product brief

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

lead free

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.

OmniVision®

Applications

- Medical, Dental, Veterinarian, Industrial Endoscopes

OVM6946

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

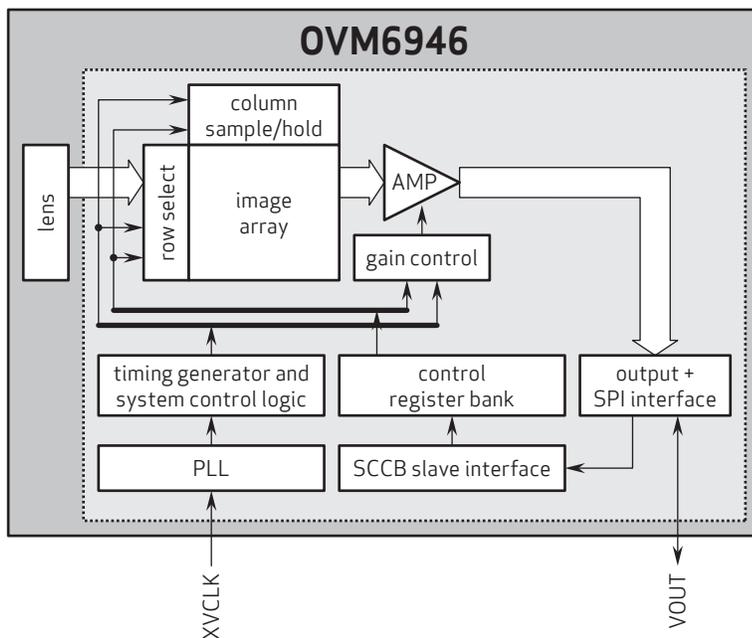## Technical Specifications

- **active array size:** 400 x 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°
  - **RANA:** 90°
- **f no.:**
  - **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:** 4.62 mg
- **package dimensions (including ball height):**
  - **RAJA:** 1100 x 1100 x 2266 μm
  - **RANA:** 1100 x 1100 x 2362 μm

Functional Block Diagram

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