

OV7949 NTSC/PAL product brief



available in
a lead-free
package

high-performance automotive CameraChip™ sensor

The newly enhanced OV7949 advanced CMOS CameraChip sensor is designed specifically for automotive imaging applications for driver assistance and safety systems. The 1/3 inch, highly integrated OV7949 video camera packs a high level of functionality with a brand new design specifically engineered to excel in low light conditions (<0.01 lux) and operate within a wide temperature range from -40° to 105°C, which is critical for automotive use. Combined with its significantly reduced blooming and smearing effects, the OV7949 can easily compete with more expensive CCD solutions.

In the fast growing market for automotive cameras, the OV7949 image sensor is the most cost efficient high-performance solution for applications requiring a color video camera with a small footprint, low voltage, low power consumption and excellent low-light performance.

The OV7949 supports NTSC/PAL composite video output and can directly interface with an in-car LCD screen or other device with 75 Ohm loading.

The OV7949 has completed all required AEC-Q100 Grade 2 qualifications.

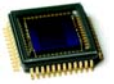




applications

- occupant sensor
- adaptive cruise control
- rear view/backup camera
- lane departure warning
- blind spot detection
- night vision

OV7949



ordering information

- **OV7949-Q10V**
(color, NTSC - QFP-48)
- **OV7949-Q20V**
(color, PAL - QFP-48)
- **OV7449-Q10V**
(b&w, NTSC - QFP-48)
- **OV7449-Q20V**
(b&w, PAL - QFP-48)

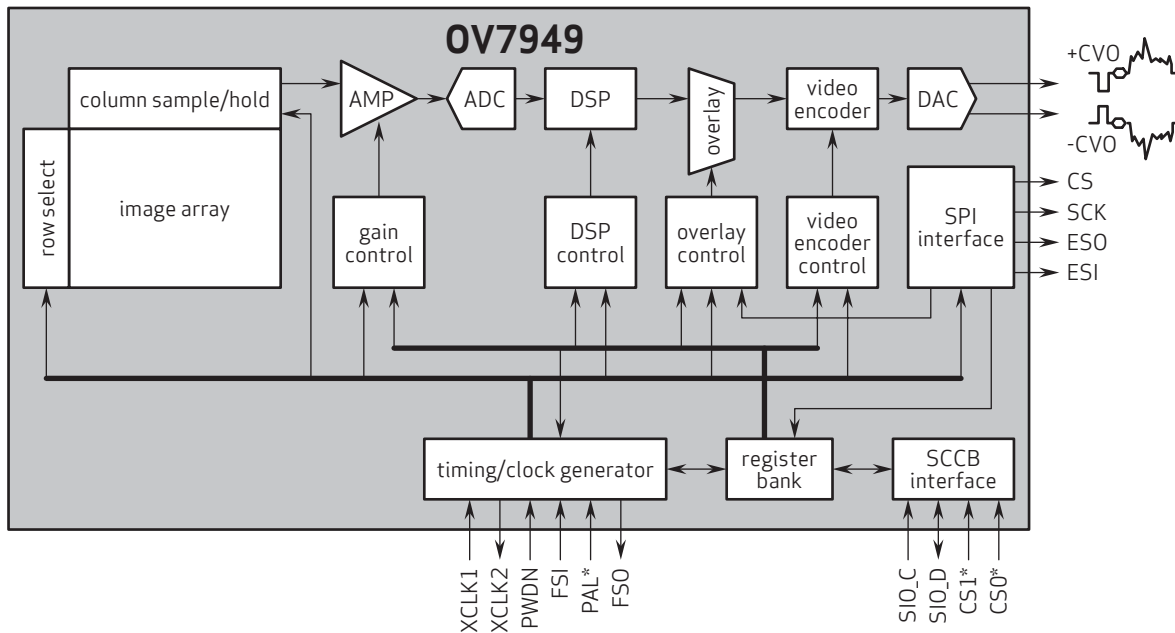
product features

- OmniPixel2™ technology
- single chip 1/3" format video camera
- composite video (NTSC/PAL) differential output drive
- sensitivity boost (+42 dB)
- automatic exposure/gain with 16 zone control
- auto white balance control
- aperture/gamma correction
- 50/60 Hz flicker cancellation
- external frame sync capability
- SPI/EEPROM used to control overlay and set other customer variables
- I2C compatible serial camera control bus (SCCB) control interface for register programming
- low power consumption
- extremely low dark current for high temperature applications
- defective pixel correction
- external frame sync capability (Genlock)
- AEC-Q100 Grade 2 qualified

product specifications

- **array size:**
 - PAL: 628 x 586
 - NTSC: 510 x 496
- **power supply**
 - analog/ADC/IO: 3.3 VDC ± 5%
 - digital core: 1.8 VDC ± 5%
- **power consumption:** 168 mW (typical)
- **temperature range:** -40° to 105°C
- **image area:** 5.961 mm x 4.276 mm
- **sensitivity:** 4.7 V/Lux*sec @ 5600K
- **exposure time range**
 - NTSC: 1/60s - 12µs
 - PAL: 1/50s - 12.5µs
- **S/N ratio:** 48 dB
- **dynamic range:** 50 dB
- **pixel size:** 9.2 µm x 7.2 µm
- **dark current:** 10 mV/s @ 60°C
- **fixed pattern noise:** 0.079% of V_{PEAK-TO-PEAK}
- **package dimensions:** 14.22 mm x 14.22 mm

functional block diagram



OV7949_PB_001

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