

# OV7949 product brief



available in  
a lead-free  
package

## high-performance automotive camera chip

The newly enhanced OV7949 advanced CMOS CameraChip™ 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° C 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 comes in a QFP package and has been submitted for full AEC-Q100 certification for automotive applications.

## applications

### ■ automotive

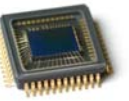
occupant sensor  
adaptive cruise control  
rear view/backup camera  
lane departure warning  
blind spot detection  
night vision



## ordering info

- 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)

# OV7949



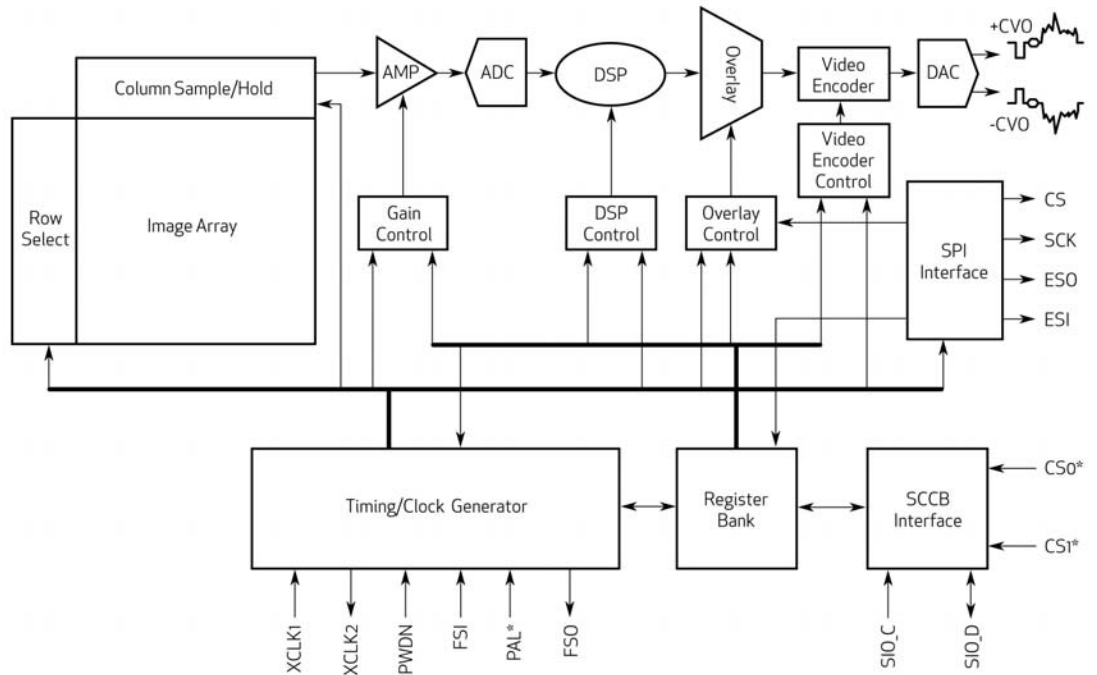
## product features

- 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
- Genlock
- QFP parts submitted for AEC-Q100 standard

## product specifications

- **array size**  
PAL: 628 x 586  
NTSC: 510 x 496
- **exposure time range**  
1/60s - 12 μs (NTSC)  
1/50s - 12.5 μs (PAL)
- **power supply**  
analog/ADC/I/O: 3.3 VDC ± 5%  
digital core: 1.8 VDC ± 5%
- **power consumption:**  
approx. 200 mW
- **image area:**  
5.961 mm x 4.276 mm
- **temperature range:**  
-40/+105 °C in QFP
- **sensitivity:**  
2.26 V/Lux-sec @ 5600K
- **S/N ratio:** 48 dB
- **dynamic range:** 50 dB
- **pixel size:** 9.2 μm x 7.2 μm
- **dark current:** 10 mW/s @ 60°C
- **fixed pattern noise:**  
0.079% of V<sub>PEAK-TO-PEAK</sub>
- **package dimensions:**  
14.22 mm x 14.22 mm

## block diagram



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