



OV7960 NTSC/PAL
OV7962 NTSC/PAL/digital

product brief



Enabling Next-Generation Camera-Based Driver Assistance Applications

The ultra-compact OV7960/OV7962 AutoVision solution packs a high level of functionality into the automotive industry's smallest package - up to 40 percent smaller than competing devices.

Boasting the industry's best responsivity of 12V/lux-sec, the OV7960/OV7962 color sensor incorporates OmniVision's most advanced OmniPixel3-HS™ architecture, delivering superior low-light performance and higher dynamic range with the full functionality of a single-chip analog output sensor.

Ideal for applications requiring a small footprint, low power, high performance video camera, the OV7960/OV7962 is optimized for digital progressive and certain analog applications. The OV7960/OV7962 operates across a wide-temperature range, from -40°C to +105°C, meeting AEC-Q100 grade-2 requirements.

Extra pixels allow users to adjust the camera setup by moving the active area of the image in both vertical and horizontal directions. This feature is especially useful in fine tuning the viewing window to compensate for mechanical misalignments.

A new feature in the OV7960/OV7962 allows the sensor to output digital interlaced or progressive YUV data into an external image processor, providing additional processing, such as distortion correction while still meeting NTSC/PAL system requirements.

Find out more at www.ovt.com/automotive





Applications

- rear view/backup camera
- 360° view
- adaptive cruise control
- occupant sensor
- black box, personal security
- drive recorder
- lane departure warning
- blind spot detection
- night vision with active illumination

OV7960/OV7962

Ordering Information

- **OV07960-E62V-PF**
(color, NTSC, lead-free) 62-pin aCSP™ with protective film
- **OV07960-E62T-RF**
(color, NTSC, lead-free) 62-pin aCSP™ with protective film and Tape & Reel
- **OV07962-E62Y-PF**
(color, digital, lead-free) 62-pin aCSP™ with protective film
- **OV07962-E62Y-RG**
(color, digital, lead-free) 62-pin aCSP™

Product Features

- packaged in an aCSP for the most efficient package size
- industry's best responsiveness (12V/lux-sec)
- exceptional low-light performance (0.01/lux)
- VGA full array (OV7962)
- parallel DVP interface
- high sensitivity
- color and b&w sensor options
- automatic exposure/gain with 16 zone control
- horizontal and vertical windowing capability
- auto white balance control
- aperture/gamma control
- external frame sync capability (Genlock)
- low power consumption
- slave compatible serial camera control bus (SCCB) control interface for register programming (SCCB is I2C compatible)
- extremely low dark current for high temperature applications
- 50/60 Hz flicker cancellation
- dynamic overlay with four layers, 16 colors and eight transparencies each
- SPI master for single static overlay and loading setting
- AEC-Q100 qualified
- defective pixel correction
- optimized for digital progressive and analog applications
- direct interface with in-car LCD screens or devices with 75 Ohm loading

Product Specifications

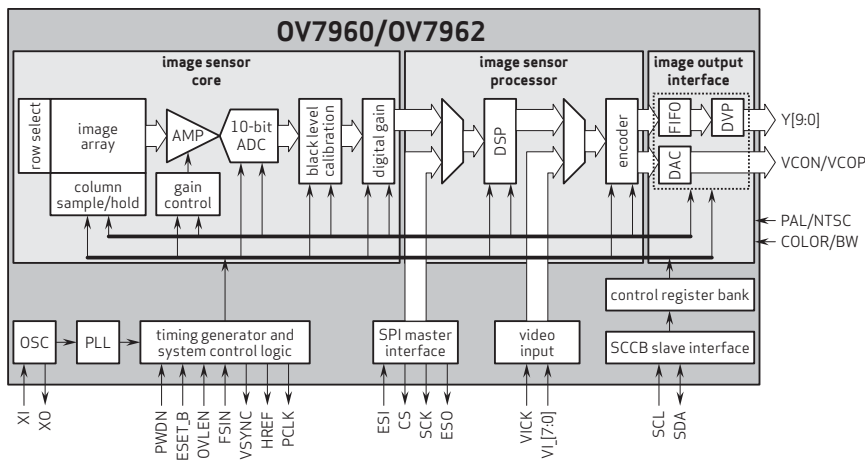
- **array size**
 - NTSC: 656 x 492
 - PAL: 768 x 576
 - digital: 752 x 480 (OV7962)
- **power supply:**
 - core: 1.5V ± 5%
 - analog: 3.14V-3.47V
 - I/O: 1.7 - 3.47V
- **power requirements:**
 - 225 mW (OV7960)
 - 245 mW (OV7962)
 - 20 µA (standby)
- **temperature range:**
 - operating: -40°C to 105°C
- **output formats:**
 - NTSC
 - PAL
 - digital (OV7962)
- **lens chief ray angle:** 0° (no microlens shift)
- **sensitivity:** 12 V/Lux-sec
- **optical format:**
 - 1/3.6" for NTSC
 - 1/3" for PAL
 - 1/3.2" for digital (OV7962)
- **frame rate:**
 - NTSC: 60 fields/sec
 - PAL: 50 fields/sec
 - digital: 30 fps (OV7962)
- **shutter:** rolling shutter
- **max S/N ratio:** 38 dB
- **dynamic range:** 70 dB @ 8x gain
- **scan mode:** interlaced
- **dark current:** 50 mV/s @ 60°C junction temperature
- **pixel size:** 6.0 µm x 6.0 µm
- **image area:** 4752 µm x 3552 µm
- **package dimensions:** 6.64 mm x 7.10 mm x 0.67 mm

* Since it is impossible to check compatibility with all displays, check the interoperability before committing to mass production

* Sensors with rolling shutter and high sensitivity can produce images with banding under certain fluorescent lighting conditions.

** The sensor is qualified to AEC-Q100 grade-2 specifications.

Functional Block Diagram



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