

OV7710 VGA product brief



available in
a lead-free
package

high-performance, all-digital automotive solution

The OV7710 image sensor is a high performance 1/4-inch, single-chip VGA digital video camera designed specifically for automotive applications. It excels in low light conditions and can operate within a wide temperature range from -40° to 105°C.

The sensor meets all automotive market requirements in terms of performance, quality and reliability.

The OV7710 has a 656 x 492 image array capable of operating at up to 30 frames per second (fps). It also incorporates de-noise algorithms to cancel Fixed Pattern Noise (FPN), eliminate smearing, and reduce blooming.

The OV7710 possesses all required camera functions including exposure control, gain, white balance, windowing and more, which are programmable through the Serial Camera Control Bus (SCCB) interface. Other key features of the OV7710 image sensor are its low power consumption, progressive scanning, external frame sync (Genlock) capability and support for both 10-bit raw data or 8-bit YUV/RGB outputs.

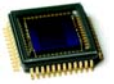
It has completed all required AEC-Q100 Grade 2 qualifications.



applications

- airbag deployment
- rear view
- lane departure warning
- blind spot view
- night vision
- adaptive cruise control

OV7710



ordering information

- **OV7710-F48V**
(color, QFP2-48)
- **OV7211-F48V**
(b&w with microlens, QFP2-48)

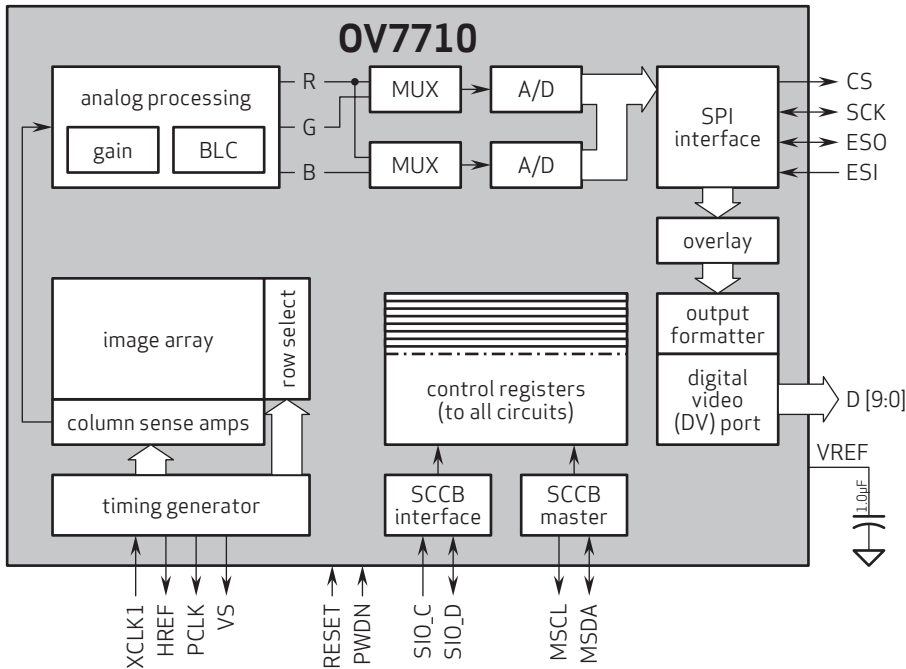
product features

- OmniPixel2™ technology
- single chip 1/4" VGA sensor
- high sensitivity for low-light operation
- master/slave compatible serial camera control bus (SCCB) control interface for register programming
- low fixed pattern noise, anti-blooming, zero smearing
- horizontal mirroring and vertical flipping
- progressive scan
- white balance, exposure time, gain control, etc.
- low power consumption
- external frame sync capability (Genlock)
- SPI for overlay control
- dual static overlay control
- AEC-Q100 Grade 2 qualified

product specifications

- **array size:** 656 x 492
- **power supply:**
 - core: 1.8VDC ± 5%
 - analog: 3.3VDC ± 10%
 - I/O: 2.4 to 3.3 VDC
- **power requirements:**
 - active: 140 mW typical (30 fps VGA, YUV)
 - standby: 10 µA typical
- **temperature range:** -40°C to 105°C
- **output format:**
 - 10-bit raw data
 - 8-bit YUV/RGB
- **optical format:** 1/4"
- **max image transfer rate:**
 - VGA (640x480): 30 fps
 - QVGA (320x240): 60 fps
- **sensitivity**
 - color: 3.0 V/(Lux-sec)
 - b&w: 7.1 V/(Lux-sec)
- **minimum illumination (3000K):** 0.04 Lux @ f/1.2
- **S/N ratio:** 50 dB
- **dynamic range:** 60 dB
- **electronic exposure:** up to 521:1 (for selected fps)
- **pixel size:** 6.0 µm x 6.0 µm
- **dark current:** 10 mV/sec at 60°C
- **well capacity:** 26 Ke
- **fixed pattern noise:** < 0.03% of V_{PEAK-TO-PEAK}
- **image area:** 4.080 mm x 3.102 mm
- **package dimensions:** 12.00 mm x 12.00 mm

functional block diagram



OV7710_PB_001

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