

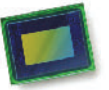
Applications

- Notebooks
- Telepresence
- Mobile Phones
- Digital Still Cameras
- Webcams
- Medical
- Entertainment

Product Features

- high sensitivity for low-light operation
- ultra low power and low cost
- automatic image control functions:
 - automatic exposure control (AEC)
 - automatic gain control (AGC)
 - automatic white balance (AWB)
 - automatic band filter (ABF)
 - automatic black level calibration (ABLC)
- programmable controls:
 - frame rate
 - AEC/AGC 16-zone size/position/weight control
 - mirror and flip
 - cropping and windowing
- image quality controls:
 - lens correction
 - defective pixel canceling
- output support for raw RGB supports image sizes:
 - WXGA (1280x800)
 - HD 720p (1280x720)
 - VGA (640x480)
- support for horizontal and vertical sub-sampling
- support for black sun cancellation
- support for internal and external frame cancellation
- standard serial camera control bus (SCCB) interface
- digital video port (DVP) parallel output interface
- embedded one-time programmable (OTP) memory
- on-chip phase lock loop (PLL)
- built-in 1.5V regulator for core

OV9712



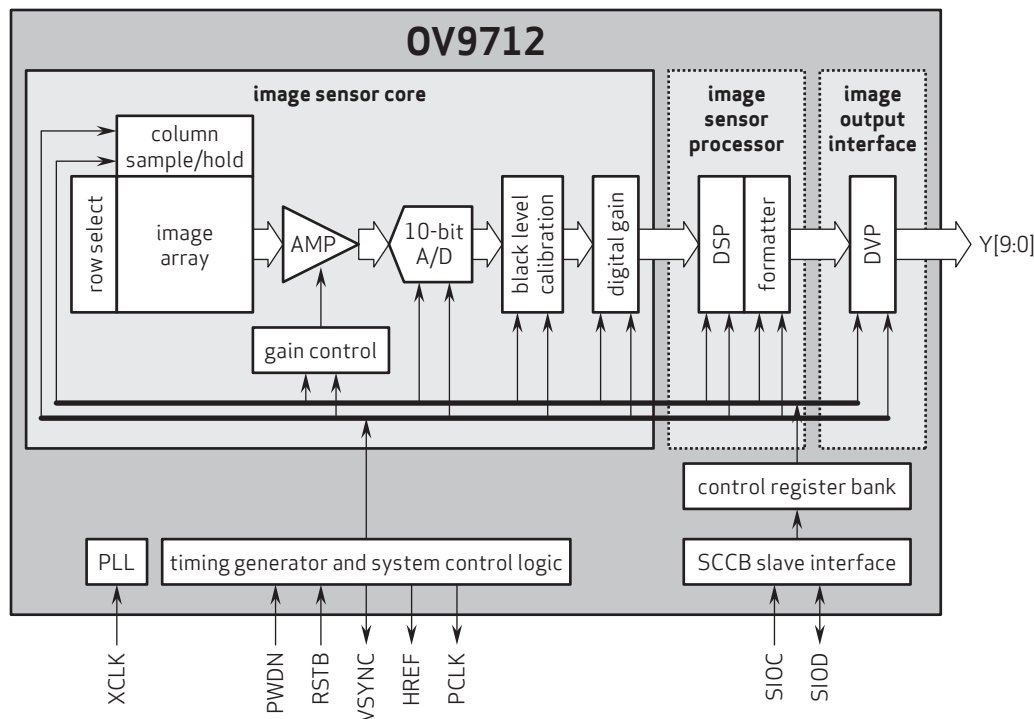
Ordering Information

- **OV09712-V28A**
(color, lead-free, 28-pin CSP2)
- **OV09712-G04A**
(color, chip probing, 200 μm backgrinding, reconstructed wafer)

Product Specifications

- **active array size:** 1280 x 800
- **power supply:**
 - core: 1.5 VDC $\pm 5\%$
 - analog: 3.0 - 3.6 V
 - I/O: 1.7 - 3.6 V
- **power requirements:**
 - active: 110 mW
 - standby: 50 μA
- **temperature range:**
 - operating: -30°C to 70°C
 - stable image: 0°C to 50°C
- **output formats:** 10-bit RAW RGB data
- **lens size:** 1/4"
- **lens chief ray angle:** 25° non-linear
- **input clock frequency:** 6 - 27 MHz
- **dynamic range:** 69 dB
- **maximum image transfer rate:**
 - WXGA (1280x800): 30 fps
 - HD 720p (1280x720): 30 fps
 - VGA (640x480): 60 fps
- **sensitivity:** 3300 mV/(lux-sec)
- **S/N ratio:** 39 dB
- **maximum exposure interval:** $826 \times t_{\text{ROW}}$
- **pixel size:** $3 \mu\text{m} \times 3 \mu\text{m}$
- **well capacity:** 13 $\text{K}e^{-}$
- **dark current:** 20 mV/s @ 60°C
- **image area:** $3888 \mu\text{m} \times 2430 \mu\text{m}$
- **package/die dimensions:**
 - CSP2: $5415 \mu\text{m} \times 4415 \mu\text{m}$
 - COB: $5430 \mu\text{m} \times 4430 \mu\text{m}$

Functional Block Diagram



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