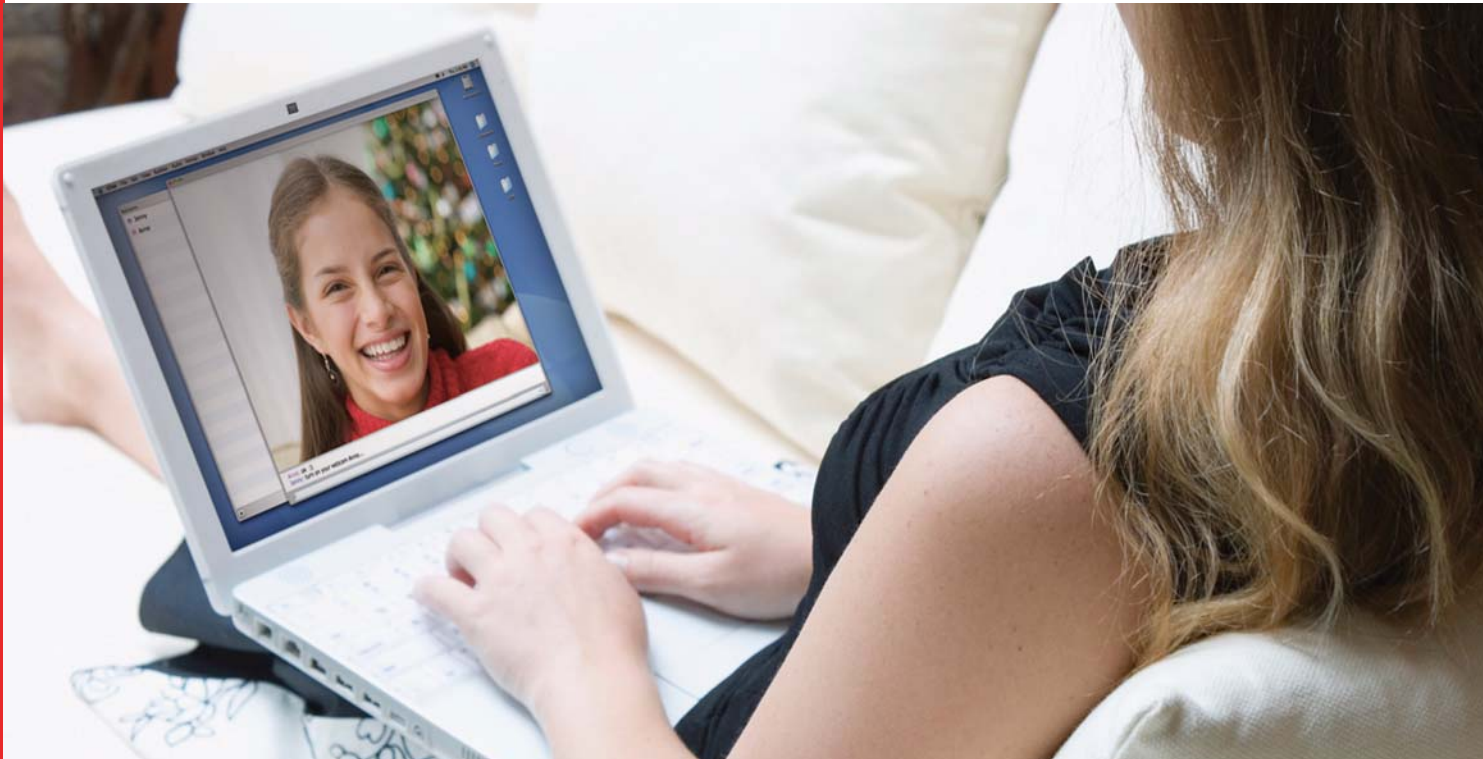


OV7740 VGA product brief



available in
a lead-free
package

ultra-high sensitivity CMOS image sensor

The OV7740 (color) CameraChip™ sensor is a low power, high sensitivity VGA CMOS image sensor that provides the full functionality of a single-chip VGA camera in a small footprint.

Using OmniVision's proprietary OmniPixel3-HS™ technology, the 1/5-inch OV7740 boasts a best-in-class low light sensitivity of 6800mV/(Lux-sec), making it ideal for integrated notebook cameras, as well as stand-alone PC webcams, security and gaming applications.

The OV7740 can operate at 60 frames per second (fps) in VGA resolution and 120 fps in QVGA resolution with complete user control over image quality, formatting and output data transfer. It supports a digital video parallel port, and provides full-frame, sub-sampled, windowed or scaled 8-bit/10-bit RAW RGB and 8-bit YUV images.

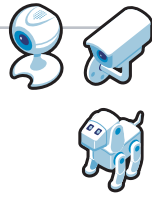
All required image processing functions including exposure control, gamma, white balance, color saturation, hue control, defective pixel canceling, noise canceling, etc., are programmable through the serial camera control bus (SCCB) interface.

In addition, the OV7740 uses proprietary technology to improve image quality by reducing or eliminating common lighting/electrical sources of image contamination, such as fixed pattern noise and smearing, to produce a clean and fully stable color image.

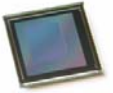
For storage purposes, the OV7740 also includes one-time programmable (OTP) memory.

applications

- PC multimedia
- security/surveillance
- toys/games



OV7740



ordering information

- **OV7740-A32A**
(color, lead-free, 32-pin CSP3)
- **OV7740-G00A**
(color, chip probing, no backgrinding)

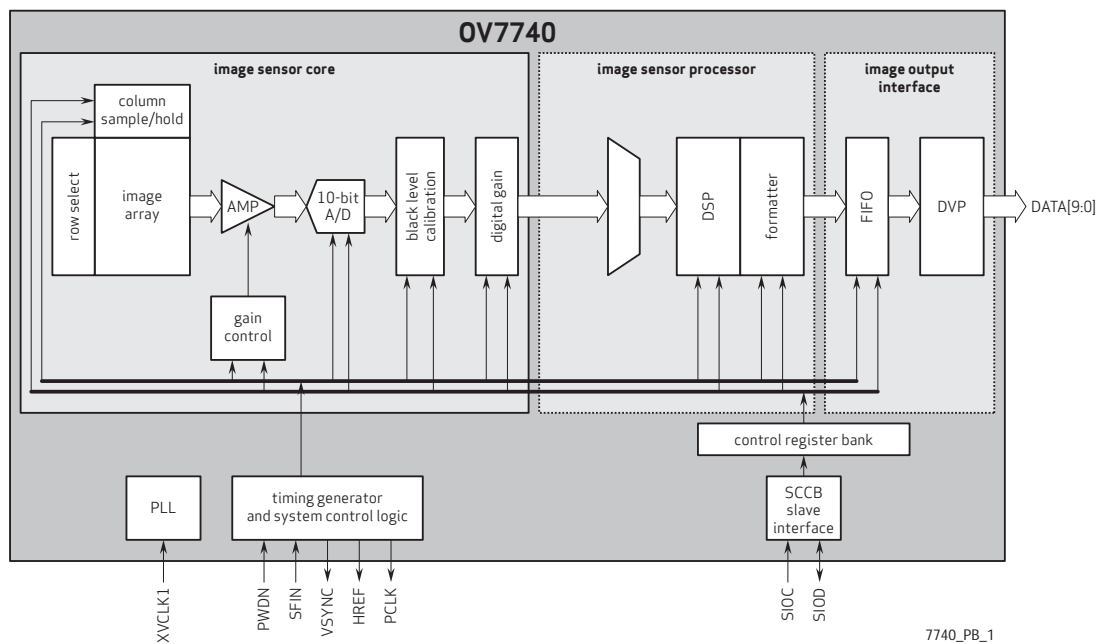
product features

- support for output formats: RAW RGB and YUV
- support for image sizes: VGA, QVGA, CIF and any size smaller
- support for black sun cancellation
- support for internal and external frame synchronization
- standard SCCB serial interface
- digital video port (DVP) parallel output interface
- embedded one-time programmable (OTP) memory
- on-chip phase lock loop (PLL)
- embedded 1.5 V regulator for core

product specifications

- **array size:** 656 x 488
- **power supply:**
 - core: 1.5VDC \pm 5%
 - analog: 3.3V \pm 5%
 - I/O: 1.7 - 3.47V
- **temperature range:**
 - operating: -30°C to 70°C
 - stable image: 0°C to 50°C
- **output format:**
 - 8-/10-bit raw RGB data
 - 8-bit YUV
- **lens size:** 1/5"
- **input clock frequency:** 6 - 27 MHz
- **max image transfer rate:**
 - VGA (640x480): 60 fps
 - QVGA (320 x 240): 120 fps
- **sensitivity:** 6800 mV/(Lux-sec)
- **maximum exposure interval:** 502 x t_{ROW}
- **pixel size:** 4.2 μ m x 4.2 μ m
- **image area:** 2755.2 μ m x 2049.6 μ m
- **package/die dimensions:**
 - CSP3: 4185 μ m x 4345 μ m
 - COB: 4200 μ m x 4360 μ m

functional block diagram



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