OV2715 full HD (1080p) product brief

OmniVision's True 1080p High Definition (HD) Video Image Sensor

lead free

available in
a lead-free
package

The OV2715 is a native 1080p high definition (HD) CMOS image sensor designed specifically to deliver HD video to security/surveillance applications. Built with OmniVision's proprietary OmniPixel3-HS™ technology, the 1/2.7-inch OV2715 addresses the low-light performance requirements of both IP cameras and HDcctv.

The OV2715 is one of the first no-compromise full 1080p HD sensors available on the market with a display resolution of 1920 x 1080 pixels while operating at 30 frames per second. The sensor delivers low-light sensitivity of 3300 mV/lux-sec and a peak dynamic range of 69 dB. This enables cameras to operate in virtually every lighting condition from bright daylight to nearly complete darkness, a critical capability for security and surveillance cameras.

The sensor provides full frame, sub-sampled or windowed 10-bit images in RAW RGB format via the digital video port with complete user control over image quality. It incorporates advanced image processing functions, including exposure control, gain control, white balance, lens correction and defective pixel correction, and is fully programmable through the serial camera control bus (SCCB) interface.

Offering a zero degree chief ray angle, the OV2715 allows for the clearest possible picture and best-in-class image quality. The OV2715 is capable of operating within a temperature range of -30°C to +85°C, enabling its implementation in indoor and outdoor security and surveillance applications.

Find out more at www.ovt.com.

OmniVision.

Applications

- Security and Surveillance Cameras

Product Features

- support for image sizes:
  - 1080p @ 30 fps
  - cropped 720p @ 60 fps
  - VGA @ 120 fps

- programmable controls: gain, exposure, frame rate, image size, horizontal mirror, vertical flip, cropping, windowing, and panning

- automatic image control functions:
  - automatic exposure (AEC)
  - automatic gain control (AGC)
  - automatic white balance (AWB)
  - automatic black level calibration (ABLC)

- serial camera control bus (SCCB)

- lens correction (LENC)

- defect pixel correction (DPC)

- support for digital video port (DVP) parallel output interface

- integrated auto focus filter

- support for 10-bit RAW RGB output format

- support for black sun cancellation

- embedded one-time programmable (OTP) memory

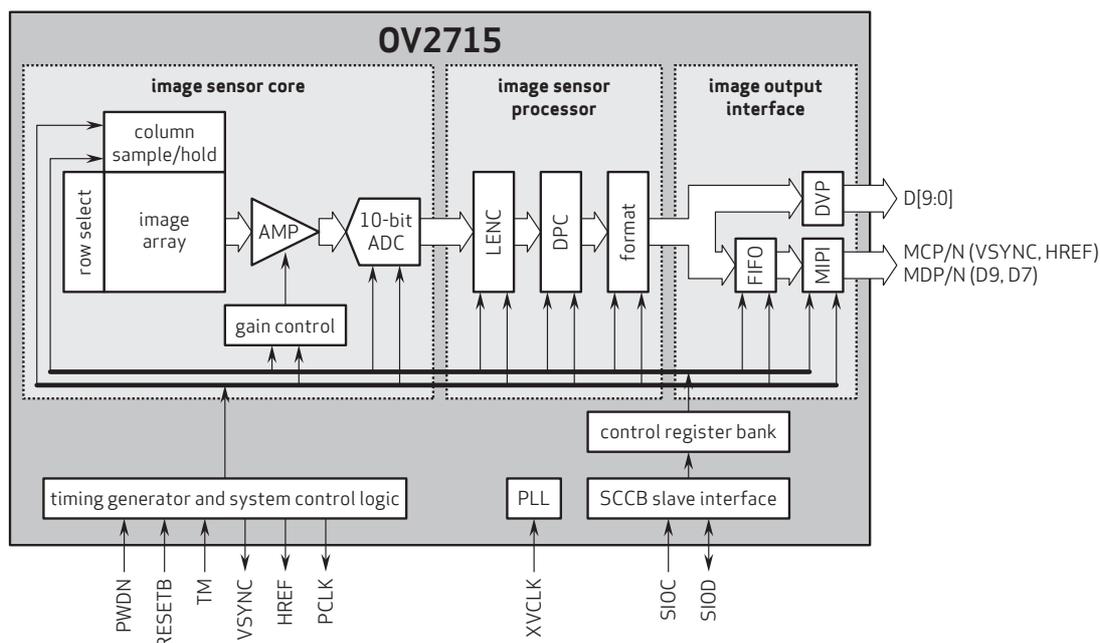- on-chip phase lock loop (PLL)

- built-in 1.5 V regulator for core

Ordering Information

- OV02715-A68A
  (color, lead-free, 68-pin CSP3)

- OV02715-A68A-PC
  (color, lead-free, 68-pin CSP3 with protective film)

- OV02715-A68A-RC
  (color, lead-free, 68-pin CSP3 with protective film, packed in tape and reel)

Product Specifications

- **active array size:** 1920 x 1080

- **power supply:**
  - **analog:** 3.0 - 3.6 V (3.3 V typical)
  - **core:** 1.425 - 1.575 V (1.5 V typical)
  - **I/O:** 1.7 - 3.6 V (1.8 V typical)

- **power requirements:**
  - **active:** 350 mW
  - **power down:** 70 µA

- **temperature range:**
  - **operating:** -30°C to 85°C junction temperature
  - **stable image:** 0°C to 65°C junction temperature

- **output interfaces:** 10-bit parallel/ one lane MIPI

- **output formats:** 10-bit RAW RGB data

- **lens size:** 1/2.7"

- **lens chief ray angle:** 0°

- **input clock frequency:** 6 - 27 MHz

- **scan mode:** progressive

- **maximum image transfer rate:**
  - **1080p:** 30 fps
  - **cropped 720p:** 60 fps
  - **VGA:** 120 fps
  - **QVGA:** 240 fps

- **sensitivity:** 3300 mV/lux-sec

- **shutter:** rolling shutter

- **max S/N ratio:** 39 dB

- **dynamic range:** 69 dB @ 8x gain

- **maximum exposure interval:** 1096 tline

- **pixel size:** 3 µm x 3 µm

- **image area:** 5856 µm x 3276 µm

- **package dimensions:** 7465 µm x 5865 µm

Functional Block Diagram