OV12895 12MP product brief

12-Megapixel PureCel®Plus-S Sensor
for High-End Consumer Drones and Action Cameras

lead free

available in a lead-free package

OmniVision's OV12895 is a high-speed PureCel®Plus-S image sensor that brings 4K2K video and 12-megapixel images to consumer-grade drones, surveillance systems, and 360-degree action cameras. Leveraging a 1.55-micron pixel, the OV12895 captures stunning still images using 10-bit or optional 12-bit readout architecture that provides high-bit depth snapshots.

The OV12895 is built on OmniVision's PureCel®Plus-S stacked-die architecture, featuring backside illumination for ultra-high resolution and crisp, vibrant images across all light levels. The stacked-die structure allows for additional sensor functionality while enabling smaller die sizes compared to non-stacked sensors.

The OV12895 captures ultra-high-resolution 4K2K video at 60 frames per second (fps) and full high-definition (FHD) 1080p videos at 240 fps with full field of view, enabling high-quality slow-motion video capture.

Available in the widely used 1/2.3-inch optical format, the OV12895's low chief ray angle of 5 degrees is suitable for mature lens ecosystems. The sensor currently is available in both RW and CLGA package formats.

Find out more at www.ovt.com.

OmniVision®

Applications

- Consumer-grade Drones
- Surveillance Systems
- 360-degree Action Cameras

OV12895

Product Features

- 1.55 μm x 1.55 μm pixel
- optical size of 1/2.3"
- 5° CRA
- enhanced dual camera support
- high-speed architecture for fast frames per second (fps)
- programmable controls for:
  - gain
  - exposure
  - frame rate
  - image size
  - horizontal mirror
  - vertical flip
  - cropping
  - panning
  - windowing
- support for image sizes:
  - 12MP (4096x3072)
  - 4K2K (3840x2160)
  - 1080p (1920x1080), and more
- two-wire serial bus control (SCCB)
- strobe output to control flash
- total embedded one-time programmable (OTP) memory: 4096 bytes, 64 bytes for customer use, remaining bytes for internal use
- two on-chip phase lock loops (PLLs)
- image quality controls for:
  - defect pixel correction
  - automatic black level calibration
  - lens shading correction
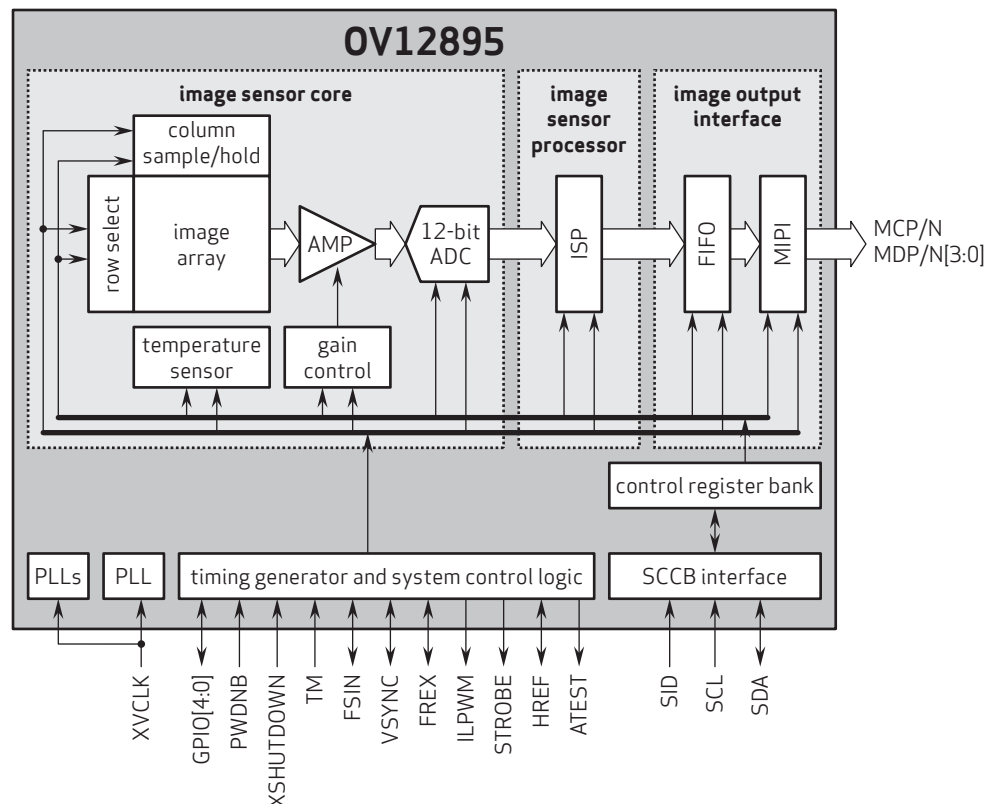 - alternate row HDR
- built-in temperature sensor
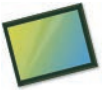
Technical Specifications

- active array size: 4096 x 3072
- maximum image transfer rate:
  - 12MP (12-bit) (4:3): 30 fps
  - 12MP (10-bit) (4:3): 45 fps
  - 4K2K (16:9): 60 fps
  - 1080p HD (crop+bin): 240 fps
- power supply:
  - core: 1.2V
  - analog: 2.8V
  - I/O: 1.8V
- power requirements:
  - active: 320 mW @ full-res, 30 fps, 12-bit
  - XSHUTDOWN: <10 μW
- temperature range:
  - operating: -30°C to +85°C junction temperature
  - stable image: 0°C to +60°C junction temperature
- output formats: 10/12-bit RGB RAW, DPCM 10-8 compression
- lens size: 1/2.3"
- lens chief ray angle: 5° linear
- scan mode: progressive
- pixel size: 1.55 μm x 1.55 μm
- image area: 6398.4 μm x 4811.2 μm

Functional Block Diagram

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