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SONY

[Product Brief]

Ver.1.0

IMX298

Diagonal 6.521 mm (Type 1/2.8) 16Mega-Pixel CMOS Image Sensor with Square Pixel for Color Cameras

Description

IMX298 is a diagonal 6.521 mm (Type 1/2.8) 16 Mega-pixel CMOS active pixel type stacked image sensor with a square pixel array. It adopts Exmor RS™ technology to achieve high speed image capturing by column parallel A/D converter circuits and high sensitivity and low noise image (comparing with conventional CMOS image sensor) through the backside illuminated imaging pixel structure. R, G, and B pigment primary color mosaic filter is employed. By introducing spatially multiplexed exposure technology, high dynamic range still pictures and movies are achievable. It equips an electronic shutter with variable integration time. It operates with three power supply voltages: analog 2.5 V, digital 1.1 V and 1.8 V for input/output interface and achieves low power consumption.
In addition, this product is designed for use in cellular phone and tablet pc. When using this for another application, Sony does not guarantee the quality and reliability of product. Therefore, don't use this for applications other than cellular phone and tablet pc. Consult your Sony sales representative if you have any questions.

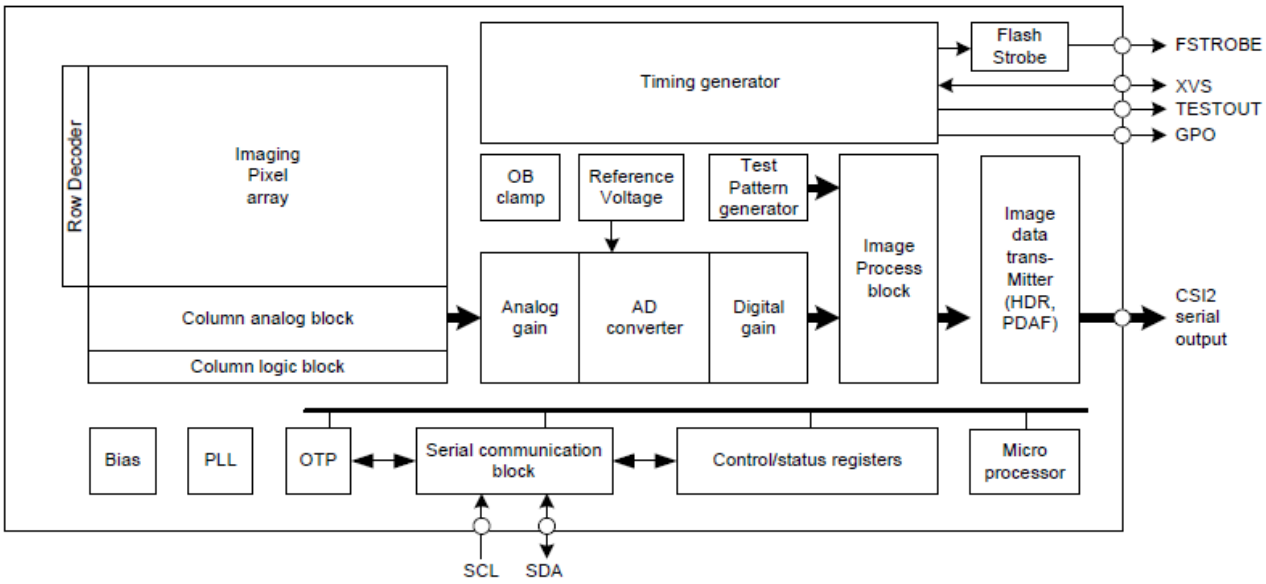
Functions and Features

- ◆Back-illuminated and stacked CMOS image sensor Exmor RS
- ◆Phase Detection Auto Focus (PDAF)
- ◆Single Frame High Dynamic Range (HDR) with equivalent full pixels
- ◆High signal to noise ratio (SNR)
- ◆Full resolution @30 frame/s (Normal / HDR). 4K2K @30 frame/s (Normal / HDR) 1080p @60 frame/s (Normal / HDR)
- ◆Output video format of RAW10/8, COMP8
- ◆Pixel binning readout and H/V sub-sampling function
- ◆Advanced Noise Reduction (Chroma noise reduction and RAW noise reduction)
- ◆Independent flipping and mirroring
- ◆CSI-2 serial data output (MIPI 2lane/4lane, Max. 1.5 Gbps/lane, D-PHY spec. ver. 1.1 compliant)
- ◆2-wire serial communication
- ◆Two PLLs for independent clock generation for pixel control and data output interface
- ◆Dynamic Defect Pixel Correction
- ◆Power-on reset function
- ◆Dual sensor synchronization operation
- ◆9 K bit of OTP ROM for users
- ◆Built-in temperature sensor

Device Structure

- ◆CMOS image sensor
- ◆Image size : Diagonal 6.521 mm (Type 1/2.8)
- ◆Total number of pixels : 4720 (H) × 3600 (V) approx. 16.99 M pixels
- ◆Number of effective pixels : 4672 (H) × 3520 (V) approx. 16.44 M pixels
- ◆Number of active pixels : 4656 (H) × 3496 (V) approx. 16.28 M pixels
- ◆Chip size : 6.433 mm (H) × 4.921 mm (V)
- ◆Unit cell size : 1.12 μm (H) × 1.12 μm (V)
- ◆Substrate material : Silicon

System block diagram



Exmor RS

* Exmor RS is a trademark of Sony Corporation. The Exmor RS is a Sony's CMOS image sensor with high-resolution, high-performance and compact size by replacing a supporting substrate in Exmor R™ which changed fundamental structure of Exmor™ pixel adopted column parallel A/D converter to back-illuminated type, with layered chips formed signal processing circuits.