



[Product Brief]

Ver.1.0

IMX219

Diagonal 4.60mm (Type 1/4.0) 8M Pixel CMOS Image Sensor with Square Pixel for Color Cameras

Description

IMX219 is a diagonal 4.60mm (Type 1/4.0) CMOS active pixel type image sensor with a square pixel array and 8.08M effective pixels. This chip operates with three power supplies, analogue 2.8V, digital 1.2 V, and IF 1.8 V, and has low power consumption. High sensitivity, low dark current, and no smear are achieved through the adoption of R, G, and B primary color pigment mosaic filters. This chip features an electronic shutter with variable charge-storage time.

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 CMOS image sensor Exmor R™

2-wire serial communication circuit on chip

CSI2 serial data output (selection of 4lane/2lane)

Timing generator, H and V driver circuits on chip

CDS/PGA on chip

10-bit A/D converter on chip

Automatic optical black (OB) clamp circuit on chip

PLL on chip (rectangular wave)

High sensitivity, low dark current, no smear

Excellent anti-blooming characteristics

Variable-speed shutter function (1 H units)

R, G, B primary color pigment mosaic filters on chip

Max. 30frame/s in all-pixel scan mode

Pixel rate: 280 [Mpixel/s] (All-pixels mode)

180 frame/s @720p with 2x2 analog (special) binning, 60 frame/s @1080p with V-crop

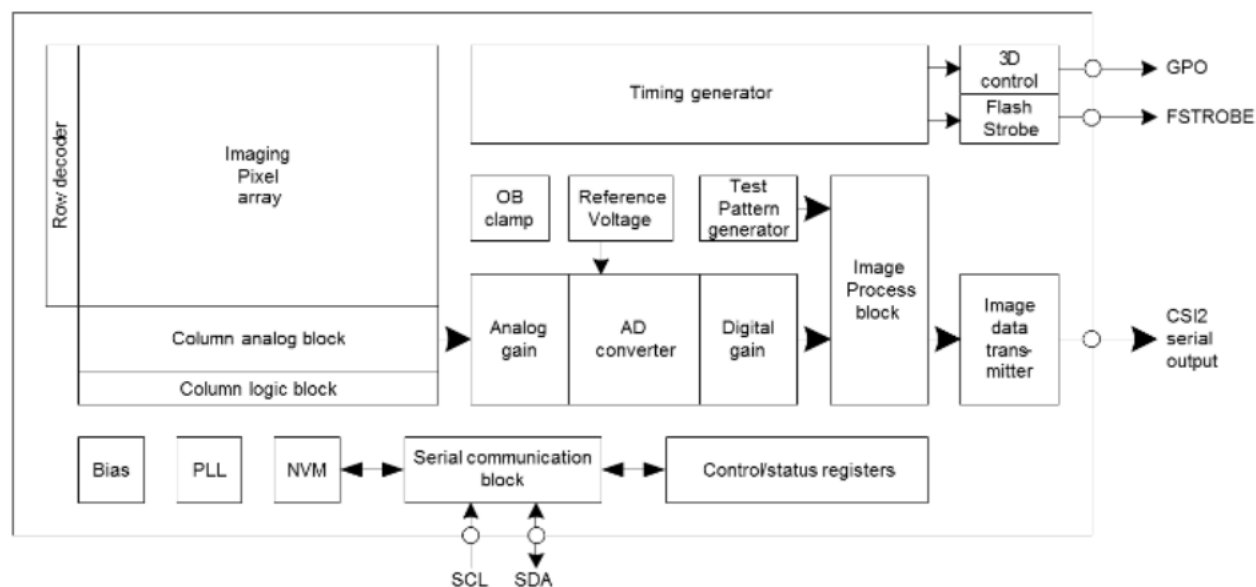
100 frames @ 720p with EXR and/or (special) binning; 60 frames @ 1080p with V crop
Data rate: Max. 755Mbps/lane (@4lane), 912Mbps/Lane(@2lane)

Device Structure

CMOS image sensor	
Image size	: Diagonal 4.60mm (Type 1/4.0)
Total number of pixels	: 3296(H) × 2512(V) approx. 8.28M pixels
Number of effective pixels	: 3296(H) × 2480(V) approx. 8.17M pixels
Number of active pixels	: 3280(H) × 2464(V) approx. 8.08M pixels
Chip size	: 5.095mm (H) × 4.930mm (V) (w/ Scribe)
Unit cell size	: 1.12 μ m (H) × 1.12 μ m (V)
Substrate material	: Silicon

Functional Description

Block diagram





* Exmor R is a trademark of Sony Corporation. The Exmor R is a Sony's CMOS image sensor with significantly enhanced imaging characteristics including sensitivity and low noise by changing fundamental structure of Exmor™ pixel adopted column parallel A/D converter to back-illuminated type.

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Application circuits shown, if any, are typical examples illustrating the operation of the devices. Sony cannot assume responsibility for any problems arising out of the use of these circuits.