

[Product Brief]

Ver.1.0

IMX188

Diagonal 2.16 mm (Type 1/8.32) 1.07M Pixel CMOS Image Sensor with Square Pixel for Color Cameras

Description

The IMX188 is a diagonal 2.16 mm (Type 1/8.32) back-illuminated type CMOS image sensor with a square pixel array and approx. 1.07 M active pixels. Adoption of column parallel A/D converter realized high-speed processing and changing fundamental structure to back-illuminated type enhanced imaging characteristics including sensitivity and low noise. R, G, and B pigment primary color mosaic filter is employed. High sensitivity, low dark current features are achieved. It equips an electronic shutter with variable integration time. It operates with three power supply voltages: analog 2.7 V, digital 1.2 V and 1.8 V for input/output interface and achieves low power consumption. In addition, this product is designed for use in pc camera, tablet pc, cellular phone and consumer use network camera. 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 pc camera, tablet pc, cellular phone and consumer use network camera. Consult your Sony sales representative if you have any questions.

Function and Features

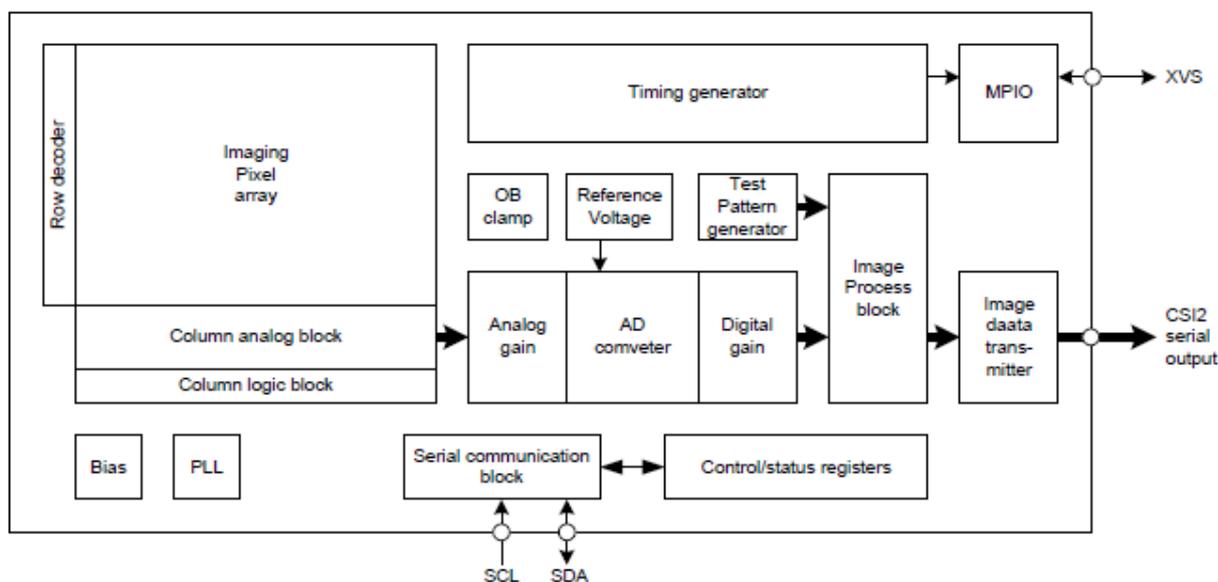
- ◆ Back-illuminated CMOS image sensor Exmor R™
- ◆ 2-wire serial communication circuit on chip
- ◆ CSI2 serial data output (1 Lane) on chip
- ◆ Timing generator, H and V driver circuits on chip
- ◆ CDS/PGA on chip
- ◆ 10-bit A/D converter on chip
- ◆ Automatic optical black (OB) clamp circuit on chip
- ◆ PLL on chip (rectangular wave/sine wave)
- ◆ High sensitivity, low dark current, no smear, excellent anti-blooming characteristics
- ◆ Variable-speed shutter function (Minimum unit: One horizontal sync signal period)
- ◆ R, G, B primary color pigment mosaic filters on chip
- ◆ Max. 66.5 frame/s in all-pixel scan mode
- ◆ Pixel rate: 81.0 MHz (all pixels, 1 Lane, 60 frame/s)
- ◆ Supports 720/60 p drive *NOTE
- ◆ Up/down and/or right/left inversion function
- ◆ Pixel subsampling readout function
- ◆ Image cutout function
- ◆ Power-on reset function
- ◆ Power-on sequence free

NOTE) ease ask about the details of a required register.

Device Structure

- ◆ CMOS image sensor
- ◆ Image size : Diagonal 2.16 mm (Type 1/8.32)
- ◆ Total number of pixels : 1328 (H) × 864 (V) approx. 1.15 M pixels
- ◆ Number of effective pixels : 1328 (H) × 832 (V) approx. 1.10 M pixels
- ◆ Number of active pixels : 1312 (H) × 816 (V) approx. 1.07 M pixels
- ◆ Chip size : 3.285 mm (H) × 2.549 mm (V)
- ◆ Unit cell size : 1.4 μm (H) × 1.4 μm (V)
- ◆ Substrate material : Silicon

Block diagram



Exmor R

* 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.