

## [Product Information]

# IMX204-0KQC

Ver.1.0

Diagonal 9.33 mm (Type 1/1.7) CMOS Image Sensor with Square Pixel for Color Cameras

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### Description

The IMX204-0KQC is a diagonal 9.33 mm (Type 1/1.7) CMOS image sensor with a color square pixel array and approximately 20.68 M effective pixels. 12-bit digital output makes it possible to output the signals of approximately 20.68 M effective pixels with high definition for shooting still picture. It also has multiple stream output function that can output the two drive modes at the same time. Furthermore, it realizes 12-bit digital output for shooting high-speed and high-definition moving pictures by horizontal and vertical addition and subsampling. Realizing high-sensitivity, low dark current, this sensor also has an electronic shutter function with variable storage time. In addition, this product is designed for use in consumer use digital still camera and consumer use camcorder. When using this for another application, Sony Semiconductor Solutions Corporation does not guarantee the quality and reliability of product. Therefore, don't use this for applications other than consumer use digital still camera and consumer use camcorder.

In addition, individual specification change cannot be supported because this is a standard product.

Consult your Sony Semiconductor Solutions Corporation sales representative if you have any questions.

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### Features

- ◆ CMOS active pixel type pixels
- ◆ Input clock frequency 72 MHz
- ◆ SLVS-EC Interface
- ◆ All-pixel readout mode
  - Various readout modes (\*)
- ◆ Multiple stream output
- ◆ Compressed output
- ◆ Horizontal arbitrary cropping
- ◆ High-sensitivity, low dark current, no smear, excellent anti-blooming characteristics
- ◆ Variable-speed shutter function (minimum unit: 1 horizontal sync signal period (1XHS))
- ◆ Low power consumption
- ◆ H driver, V driver and serial communication circuit on chip
- ◆ CDS/PGA on chip. Gain +27 dB (step pitch 0.1 dB)
- ◆ 10-bit/12-bit A/D conversion on chip
- ◆ R, G, B primary color mosaic filters on chip
- ◆ All-pixel simultaneous reset supported (used with mechanical shutter)
- ◆ 94-pin small low-profile ceramic package

\* Please refer to the datasheet for binning/subsampling details of readout modes.

Sony reserves the right to change products and specifications without prior notice.

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**Device Structure**

- ◆ CMOS image sensor
- ◆ Image size Diagonal 9.33 mm (Type 1/1.7)
- ◆ Total number of pixels 5352 (H) × 3950 (V) approx. 21.14 M pixels
- ◆ Number of effective pixels 5256 (H) × 3934 (V) approx. 20.68 M pixels
- ◆ Number of active pixels 5208 (H) × 3924 (V) approx. 20.44 M pixels diagonal 9.33 mm
- ◆ Number of recommended recording pixels 5184 (H) × 3888 (V) approx. 20.16 M pixels aspect ratio 4:3
- ◆ Chip size 9.44 mm (H) × 6.97 mm (V)
- ◆ Unit cell size 1.43 μm (H) × 1.43 μm (V)
- ◆ Optical black Horizontal (H) direction: Front 48 pixels, Rear 0 pixel  
Vertical (V) direction: Front 16 pixels, Rear 0 pixel
- ◆ Package 94 pin LGA

**Image Sensor Characteristics**

(Tj = 60 °C)

Item		Value	Remarks
Sensitivity (F5.6)	Typ.	969 digit	1/30 s integration
Saturation signal	Min.	2855 digit	

**Basic Drive Mode**

Drive mode	Number of recording pixels	Max frame rate [frame/s]	Output data bit length [bit]
Readout mode 0	5184 (H) × 3888 (V) approx. 20.16 M pixels	29.97	12
Readout mode 0N	5184 (H) × 3888 (V) approx. 20.16 M pixels	29.97	12
Readout mode 1	5184 (H) × 3888 (V) approx. 20.16 M pixels	59.94	10
Readout mode 1N	5184 (H) × 3888 (V) approx. 20.16 M pixels	59.94	10
Readout mode 1A	5184 (H) × 3888 (V) approx. 20.16 M pixels	59.94	10
Readout mode 1AN	5184 (H) × 3888 (V) approx. 20.16 M pixels	59.94	10
Readout mode 2	5184 (H) × 2916 (V) approx. 15.12 M pixels	59.94	10
Readout mode 2A	5184 (H) × 2916 (V) approx. 15.12 M pixels	119.88	10
Readout mode 3	2592 (H) × 1458 (V) approx. 3.78 M pixels	59.94	12
Readout mode 3A	2592 (H) × 1458 (V) approx. 3.78 M pixels	119.88	12
Readout mode 4	1728 (H) × 1296 (V) approx. 2.24 M pixels	59.94	12
Readout mode 5	2592 (H) × 1458 (V) approx. 3.78 M pixels	239.76	12
Readout mode 6	1728 (H) × 972 (V) approx. 1.68 M pixels	239.76	12
Readout mode 7	1728 (H) × 486 (V) approx. 0.84 M pixels	239.76	12
Readout mode 8	1728 (H) × 486 (V) approx. 0.84 M pixels	29.97	12
Readout mode 9	1728 (H) × 202 (V) approx. 0.35 M pixels	549.45	12