

[Product Information]

IMX571BQR-J

Ver.1.0

Diagonal 28.3 mm (Type 1.8) CMOS Image Sensor with Square Pixel for Color Cameras

Description

The IMX571BQR-J is a diagonal 28.3 mm (Type 1.8) CMOS active pixel type image sensor with a square pixel array and 26.11 M effective pixels. This sensor incorporates maximum 36 dB PGA circuit and 16-bit A/D converter. 16-bit digital output makes it possible to readout the signals of 26.11 M effective pixels at high-speed of 6.84 frame/s in still picture mode. In addition, it realizes 12-bit digital output for high-speed 4K moving picture by window readout mode. (Applications: Surveillance cameras, FA cameras, Industrial cameras)

Features

- ◆ APS size CMOS active pixel type dots
- ◆ Input clock frequency 72 MHz
- ◆ All-pixel readout mode
Various readout modes (*)
- ◆ Rolling shutter function moving picture mode
- ◆ H driver, V driver and serial communication circuit on chip
- ◆ +36 dB gain in CDS/PGA on chip (when A/D 16-bit, 14-bit, 12-bit)
- ◆ Built-in 11-bit/12-bit/14-bit/16-bit A/D converter
- ◆ 8 Lane SLVS-EC output
- ◆ R, G, B primary color mosaic filter on chip
- ◆ Back-illuminated type

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

STARVIS

* STARVIS is a trademark of Sony Corporation. The STARVIS is back-illuminated pixel technology used in CMOS image sensors for surveillance camera applications. It features a sensitivity of 2000 mV or more per $1 \mu\text{m}^2$ (color product, when imaging with a 706 cd/m^2 light source, F5.6 in 1 s accumulation equivalent), and realizes high picture quality in the visible-light and near infrared light regions.

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Device Structure

◆ CMOS image sensor	
◆ Image size	Diagonal 28.3 mm (Type 1.8)
◆ Total number of pixels	6280 (H) × 4264 (V) approx. 26.78 M pixels
◆ Number of effective pixels	6252 (H) × 4176 (V) approx. 26.11 M pixels
◆ Number of active pixels	6244 (H) × 4168 (V) approx. 26.02 M pixels
◆ Chip size	27.780 mm (H) × 22.302 mm (V)
◆ Unit cell size	3.76 μm (H) × 3.76 μm (V)
◆ Optical black	Horizontal (H) direction: Front 16 pixels, Rear 0 pixel Vertical (V) direction: Front 22 pixels, Rear 0 pixel
◆ Package	184 pin LGA

Image Sensor Characteristics

(T_j = 60 °C)

Item		Value	Remarks
Sensitivity (F5.6)	Typ.	5630 LSB	1/30 s integration
Saturation signal	Min.	14168 LSB	Left for 0.4 s

Basic Drive Mode

Drive mode	Number of active pixels	Max frame rate [frame/s]	Word length [bit]
Readout mode 0	6244 (H) × 4168 (V) approx. 26.02 M pixels	48.42	10
Readout mode 1	6244 (H) × 4168 (V) approx. 26.02 M pixels	18.82	12
Readout mode 3	6244 (H) × 4168 (V) approx. 26.02 M pixels	24.15	10
Readout mode 5	3122 (H) × 2084 (V) approx. 6.51 M pixels	37.55	12
Readout mode 6	2080 (H) × 1388 (V) approx. 2.89 M pixels	111.84	12
Readout mode 7	2080 (H) × 1386 (V) approx. 2.88 M pixels	111.99	12
Readout mode 10	2080 (H) × 1388 (V) approx. 2.89 M pixels	55.52	12
Readout mode 11	2080 (H) × 1386 (V) approx. 2.88 M pixels	55.52	12
Readout mode 12	2080 (H) × 832 (V) approx. 1.73 M pixels	245.08	12
Readout mode 13	2080 (H) × 832 (V) approx. 1.73 M pixels	245.08	12
Readout mode 14	2080 (H) × 594 (V) approx. 1.24 M pixels	339.77	12
Readout mode 15	2080 (H) × 594 (V) approx. 1.24 M pixels	339.77	12
Readout mode 16	2080 (H) × 462 (V) approx. 0.96 M pixels	432.44	12
Readout mode 17	2080 (H) × 462 (V) approx. 0.96 M pixels	432.44	12
Readout mode 18	2080 (H) × 320 (V) approx. 0.67 M pixels	611.99	12
Readout mode 19	2080 (H) × 319 (V) approx. 0.66 M pixels	611.99	12
Readout mode 20	2080 (H) × 166 (V) approx. 0.35 M pixels	1113.31	12
Readout mode 21	2080 (H) × 164 (V) approx. 0.34 M pixels	1125.28	12