SONY

[Product Information]

Ver.1.3

IMX327LQR/LQR1

Diagonal 6.46 mm (Type 1/2.8) CMOS Solid-state Image Sensor with Square Pixel for Color Cameras

Description

The IMX327LQR/LQR1 are diagonal 6.46 mm (Type 1/2.8) CMOS active pixel type solid-state image sensors with a square pixel array and 2.13 M effective pixels. These chips operate with analog 2.9 V, digital 1.2 V, and interface 1.8 V triple power supply, and have low power consumption. High sensitivity, low dark current and no smear are achieved through the adoption of R, G and B primary color mosaic filters. These chips feature an electronic shutter with variable charge-integration time.
(Applications: Surveillance cameras, FA cameras, Industrial cameras)

Features

- ◆ CMOS active pixel type dots
- ◆ Built-in timing adjustment circuit, H/V driver and serial communication circuit
- ◆ Input frequency: 74.25 MHz / 37.125 MHz
- ◆ Number of recommended recording pixels: 1920 (H) × 1080 (V) approx. 2.07 M pixel
- ◆ Readout mode
  All-pixel scan mode
  720p-HD readout mode
  Window cropping mode
  Vertical / Horizontal direction-normal / inverted readout mode
- ◆ Readout rate
  Maximum frame rate in Full HD 1080p mode: 60 frame / s
- ◆ High dynamic range (HDR) function
  Multiple exposure HDR
  Digital overlap HDR
- ◆ Variable-speed shutter function (resolution 1H units)
- ◆ 10-bit / 12-bit A/D converter
- ◆ CDS / PGA function
  0 dB to 29.4 dB: Analog Gain 29.4 dB (step pitch 0.3 dB)
  29.7 dB to 71.4 dB: Analog Gain 29.4 dB + Digital Gain 0.3 to 42 dB (step pitch 0.3 dB)
- ◆ Supports I/O switching
  Low voltage LVDS (150 m Vp-p) serial (2 ch / 4 ch switching) DDR output
  CSI-2 serial data output (2 Lane / 4 Lane, RAW10 / RAW12 output)
- ◆ Recommended exit pupil distance: –30 mm to –∞
- ◆ Anti-reflective coating glass (IMX327LQR1), Non anti-reflective coating glass (IMX327LQR)

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 μm^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	Type 1/2.8
◆Total number of pixels	1945 (H) × 1109 (V) approx. 2.16 M pixels
◆Number of effective pixels	1945 (H) × 1097 (V) approx. 2.13 M pixels
◆Number of active pixels	1937 (H) × 1097 (V) approx. 2.12 M pixels
◆Number of recommended recording pixels	1920 (H) × 1080 (V) approx. 2.07 M pixels
◆Unit cell size	2.9 µm (H) × 2.9 µm (V)
◆Optical black	Horizontal (H) direction: Front 0 pixel, rear 0 pixel Vertical (V) direction: Front 10 pixels, rear 0 pixel
◆Dummy	Horizontal (H) direction: Front 0 pixel, rear 3 pixels Vertical (V) direction: Front 0 pixel, rear 0 pixel
◆Package	110 pin LGA

Image Sensor Characteristics

(Tj = 60 °C)

Item		Value	Remarks
Sensitivity (F5.6)	Typ.	10741 Digit (IMX327LQR) 11390 Digit (IMX327LQR1)	1/30s accumulation 12 bit converted value
Saturation signal	Min.	3855 Digit	12 bit converted value

Basic Drive Mode

Drive mode	Recommended number of recording pixels	Maximum frame rate [frame/s]	Output interface	ADC [bit]
Full HD 1080p	1920 (H) × 1080 (V) approx. 2.07M pixels	60	LVDS CSI-2	10/12
HD 720p	1280 (H) × 720 (V) approx. 0.92M pixels	60	LVDS CSI-2	10/12