

Ver.1.0

Diagonal 9.04 mm (Type 1/1.8) CMOS Solid-state Image Sensor with Square Pixel for Color Cameras

## Description

The IMX347LQR is a diagonal 9.04 mm (Type 1/1.8) CMOS active pixel type solid-state image sensor with a square pixel array and 4.17 M effective pixels. This chip operates with analog 2.9 V, digital 1.2 V, and interface 1.8 V triple power supply, 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 mosaic filters. This chip features 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: 6 to 27 MHz / 37.125 MHz / 74.25 MHz
- ◆ Number of recommended recording pixels: 2688 (H) × 1520 (V) approx. 4.09 M pixels
- ◆ Readout mode
  - All-pixel scan mode
  - Window cropping mode
  - Vertical / Horizontal direction-normal / inverted readout mode
- ◆ Readout rate
  - Maximum frame rate in All-pixel scan mode 2688 (H) × 1520 (V) A/D 10-bit : 90 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
  - CSI-2 serial data output ( 2 Lane / 4 Lane, RAW10 / RAW12 output)
- ◆ Recommended exit pupil distance: -30 mm to  $-\infty$

## STARVIS

\* STARVIS is a registered trademark or trademark of Sony Group Corporation or its affiliates. The STARVIS is back-illuminated pixel technology used in CMOS image sensors for security camera applications. It features a sensitivity of 2000 mV or more per  $1 \mu\text{m}^2$  (color product, when imaging with a  $706 \text{ cd/m}^2$  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 1/1.8
◆ Total number of pixels	2781 (H) × 1632 (V) approx. 4.53 M pixels
◆ Number of effective pixels	2712 (H) × 1538 (V) approx. 4.17 M pixels
◆ Number of active pixels	2712 (H) × 1536 (V) approx. 4.17 M pixels
◆ Number of recommended recording pixels	2688 (H) × 1520 (V) approx. 4.09 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 13 pixels, rear 0 pixel
◆ Dummy	Horizontal (H) direction: Front 0 pixel, rear 0 pixel Vertical (V) direction: Front 0 pixel, rear 0 pixel
◆ Package	132 pin LGA

**Image Sensor Characteristics**

(Tj = 60 °C)

Item		Value	Remarks
Sensitivity (F5.6)	Typ.	11092 Digit	1/30 s accumulation 12 bit converted value
Saturation signal	Min.	3895 Digit	12 bit converted value

**Basic Drive Mode**

Drive mode	Recommended number of recording pixels	Maximum frame rate [frame/s]	Output interface	ADC [bit]
All pixel	2688 (H) × 1520 (V) approx. 4.09 M pixels	90	CSI-2	10

