

Ver.1.0

Diagonal 6.3 mm (Type 1 / 2.9) CMOS solid-state Image Sensor with Square Pixel for Color Cameras

Description

The IMX297LQR is a diagonal 6.3 mm (Type 1 / 2.9) CMOS active pixel type solid-state image sensor with a square pixel array and 0.40 M effective pixels. This chip features a global shutter with variable charge-integration time. This chip operates with analog 3.3 V, digital 1.2 V, and interface 1.8 V triple power supply, and has low power consumption. High sensitivity, low dark current and low PLS characteristics are achieved.
(Applications: Embedded Vision)

Features

- ◆ CMOS active pixel type dots
- ◆ Built-in timing adjustment circuit, H/V driver and serial communication circuit
- ◆ Global shutter function
- ◆ Input frequency
37.125 MHz / 74.25 MHz / 54 MHz
- ◆ Number of recommended recording pixels: 720 (H) × 540 (V) approx. 0.39 M pixels
 - Readout mode
 - All-pixel scan mode
 - ROI mode
 - Vertical / Horizontal - Normal / Inverted readout mode
- ◆ Readout rate
 - Maximum frame rate in
 - All-pixel scan mode: 10 bit: 120.8 frame/s
- ◆ 10-bit A/D converter
- ◆ CDS / PGA function
 - 0 dB to 24 dB: Analog Gain (0.1 dB step)
 - 24.1 dB to 48 dB: Analog Gain: 24 dB + Digital Gain: 0.1 dB to 24 dB (0.1 dB step)
- ◆ I/O interface
 - CSI-2 serial data output (1 Lane) RAW10 output
- ◆ Recommended lens F number: 2.8 or more (Close side)
- ◆ Recommended exit pupil distance: -100 mm to $-\infty$

Pregius

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Device Structure

| | | | | |
|--|--|-----------------------|-----------|--|
| ◆ CMOS image sensor | | | | |
| ◆ Image size | Diagonal 6.3 mm (Type 1 / 2.9) | Approx. 0.40 M pixels | All-pixel | |
| ◆ Total number of pixels | 728 (H) × 554 (V) | Approx. 0.40 M pixels | | |
| ◆ Number of effective pixels | 728 (H) × 544 (V) | Approx. 0.40 M pixels | | |
| ◆ Number of active pixels | 728 (H) × 544 (V) | Approx. 0.40 M pixels | | |
| ◆ Number of recommended recording pixels | 720 (H) × 540 (V) | Approx. 0.39 M pixels | All-pixel | |
| ◆ Unit cell size | 6.90 μm (H) × 6.90 μm (V) | | | |
| ◆ Optical black | Horizontal (H) direction: Front 0 pixel, rear 0 pixel Vertical (V) direction: Front 10 pixels, rear 0 pixel | | | |
| ◆ Package | 138 pin LGA | | | |

Image Sensor Characteristics

(Tj = 60 °C)

| Item | | Value | Remarks |
|--------------------|------|---------|---------------------|
| Sensitivity (F5.6) | Typ. | 4584 mV | 1/30 s accumulation |
| Saturation signal | Min. | 1001 mV | |

Basic Drive Mode

| Drive mode | Recommended number of recording pixels | Maximum frame rate [frame/s] | Output interface | ADC [bit] |
|------------|--|------------------------------|------------------|-----------|
| All pixel | 720 (H) × 540 (V) approx. 0.39 M pixels | 120.8 | CSI-2 | 10 |

