

[Product Information]

IMX433LLJ

Ver.1.2

Diagonal 9.2 mm (Type 1 / 1.7) CMOS solid-state Image Sensor with Square Pixel for Monochrome Cameras

Description

The IMX433LLJ is a diagonal 9.2 mm (Type 1 / 1.7) CMOS active pixel type solid-state image sensor with a square pixel array and 0.51 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: FA cameras, ITS cameras)

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: 812 (H) × 620 (V) approx. 0.50 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: 12 bit: 243.0 frame/s
- ◆ 12-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
 - SLVS (2 ch) output (594 / 297 Mbps per ch)
 - SLVS - EC (1 Lane) output (2.376 / 1.188 Gbps)
- ◆ Recommended lens F number: 2.8 or more (Close side)
- ◆ Recommended exit pupil distance: -100 mm to $-\infty$

Pregius

* Pregius is a trademark of Sony Corporation. The Pregius is global shutter pixel technology for active pixel-type CMOS image sensors that use Sony's low-noise CCD structure, and realizes high picture quality.

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Device Structure

◆ CMOS image sensor				
◆ Image size	Diagonal 9.2 mm (Type 1 / 1.7)	Approx. 0.51 M pixels	All-pixel	
◆ Total number of pixels	816 (H) × 656 (V)	Approx. 0.54 M pixels		
◆ Number of effective pixels	816 (H) × 624 (V)	Approx. 0.51 M pixels		
◆ Number of active pixels	816 (H) × 624 (V)	Approx. 0.51 M pixels		
◆ Number of recommended recording pixels	812 (H) × 620 (V)	Approx. 0.50 M pixels	All-pixel	
◆ Unit cell size	9.0 μm (H) × 9.0 μm (V)			
◆ Optical black	Horizontal (H) direction: Front 0 pixel, rear 0 pixel Vertical (V) direction: Front 32 pixels, rear 0 pixel			
◆ Package	226 pin LGA			

Image Sensor Characteristics

(Tj = 60 °C)

Item		Value	Remarks
Sensitivity (F8)	Typ.	4050 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	812 (H) × 620 (V) approx. 0.50 M pixels	166.5	SLVS 2 ch	12
		243.0	SLVS – EC 1 Lane	

[Product Information]

Ver.1.2

IMX433LQJ

Diagonal 9.2 mm (Type 1 / 1.7) CMOS solid-state Image Sensor with Square Pixel for Color Cameras

Description

The IMX433LQJ is a diagonal 9.2 mm (Type 1 / 1.7) CMOS active pixel type solid-state image sensor with a square pixel array and 0.51 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: FA cameras, ITS cameras)

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: 812 (H) × 620 (V) approx. 0.50 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: 12 bit: 243.0 frame/s
- ◆ 12-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
 - SLVS (2 ch) output (594 / 297 Mbps per ch)
 - SLVS - EC (1 Lane) output (2.376 / 1.188 Gbps)
- ◆ 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 9.2 mm (Type 1 / 1.7)	Approx. 0.51 M pixels	All-pixel	
◆ Total number of pixels	816 (H) × 656 (V)	Approx. 0.54 M pixels		
◆ Number of effective pixels	816 (H) × 624 (V)	Approx. 0.51 M pixels		
◆ Number of active pixels	816 (H) × 624 (V)	Approx. 0.51 M pixels		
◆ Number of recommended recording pixels	812 (H) × 620 (V)	Approx. 0.50 M pixels	All-pixel	
◆ Unit cell size	9.0 μm (H) × 9.0 μm (V)			
◆ Optical black	Horizontal (H) direction: Front 0 pixel, rear 0 pixel Vertical (V) direction: Front 32 pixels, rear 0 pixel			
◆ Package	226 pin LGA			

Image Sensor Characteristics

(T_j = 60 °C)

Item		Value	Remarks
Sensitivity (F5.6)	Typ.	4910 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	812 (H) × 620 (V) approx. 0.50 M pixels	166.5	SLVS 2 ch	12
		243.0	SLVS – EC 1 Lane	