

Diagonal 14.0 mm (Type 1/1.1) CMOS solid-state Image Sensor with Square Pixel for Monochrome Cameras

Description

The IMX535-AAMJ/IMX535-AAMJ1-RG is a diagonal 14.0 mm (Type 1/1.1) CMOS active pixel type solid-state image sensor with a square pixel array and 12.41 M effective pixels. This chip features a global shutter with variable charge-integration time. This chip operates with analog 3.3 V, 2.9 V, digital 1.1 V, and interface 1.8 V quadruple power supply. High sensitivity and low dark current characteristics are achieved.
(Applications: FA cameras, ITS cameras)

The IMX535-AAMJ1-RG is a removable seal glass model of the IMX535-AAMJ.

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: 4096 (H) × 3000 (V) approx. 12.28 M pixels
- ◆ Readout mode
 - All-pixel scan mode
 - Vertical / Horizontal 1/2 Subsampling mode
 - 2 × 2 FD binning mode
 - ROI mode
 - Vertical / Horizontal - Normal / Inverted readout mode
- ◆ Readout rate
 - Maximum frame rate in
 - All-pixel scan mode: 8 bit 184.6 frame/s, 10 bit 183.9 frame/s, 12 bit 120.9 frame/s
- ◆ Pulse Output Function
 - The monitor output for Exposure period
 - Programmable pulse output
- ◆ 8-bit / 10-bit / 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 (4 ch / 8 ch switching) output (594 / 297 / 891 / 445.5 Mbps per ch)
 - SLVS - EC (1 Lane / 2 Lane / 4 Lane / 8 Lane) output (4.752 / 2.376 / 1.188 Gbps per Lane)
- ◆ Recommended lens F number: 2.8 or more (Close side)

Pregius S

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Device Structure

◆ CMOS image sensor		
◆ Image size	Diagonal 14.0 mm (Type 1/1.1)	Approx. 12.41 M pixels All-pixel
◆ Total number of pixels	4128 (H) × 3072 (V)	Approx. 12.68 M pixels
◆ Number of effective pixels	4128 (H) × 3008 (V)	Approx. 12.41 M pixels
◆ Number of active pixels	4128 (H) × 3008 (V)	Approx. 12.41 M pixels
◆ Number of recommended recording pixels	4096 (H) × 3000 (V)	Approx. 12.28 M pixels All-pixel
◆ Unit cell size	2.74 μm (H) × 2.74 μm (V)	
◆ Optical black	Horizontal (H) direction: Front 0 pixel, rear 0 pixel Vertical (V) direction: Front 64 pixels, rear 0 pixel	
◆ Package	230 pin LGA	20.0 mm (H) × 16.8 mm (V)

Image Sensor Characteristics

(Tj = 60 °C)

Item		Value	Remarks
Sensitivity (F5.6)	Typ.	14510 Digit/lx/s	
Saturation signal	Min.	4094 Digit	

Basic Drive Mode

Drive mode	Recommended number of recording pixels	Maximum frame rate [frame/s]	Output interface	ADC [bit]
All pixel	4096 (H) × 3000 (V) approx. 12.28 M pixels	60	SLVS 8 ch	8
		184	SLVS – EC 8 Lane	
		49	SLVS 8 ch	10
		183	SLVS – EC 8 Lane	
		41	SLVS 8 ch	12
		120	SLVS – EC 8 Lane	
Vertical / Horizontal 1/2 subsampling	2048 (H) × 1500 (V) approx. 3.07 M pixels	205	SLVS 8 ch	8
		616	SLVS – EC 8 Lane	
		170	SLVS 8 ch	10
		592	SLVS – EC 8 Lane	
		145	SLVS 8 ch	12
		430	SLVS – EC 8 Lane	
2 × 2 FD binning mode	2048 (H) × 1500 (V) approx. 3.07 M pixels	205	SLVS 8 ch	8
		616	SLVS – EC 8 Lane	
		170	SLVS 8 ch	10
		592	SLVS – EC 8 Lane	
		145	SLVS 8 ch	12
		430	SLVS – EC 8 Lane	

