

Diagonal 17.6 mm (Type 1.1) CMOS solid-state Image Sensor with Square Pixel for Color Cameras

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## Description

The IMX425LQJ is a diagonal 17.6 mm (Type 1.1) CMOS active pixel type solid-state image sensor with a square pixel array and 1.78 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)

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## 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: 1604 (H) × 1100 (V) approx. 1.76 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: 8 bit: 662.1 frame/s, 10 bit: 565.1 frame/s, 12 bit: 481.4 frame/s
- ◆ 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 (2 ch / 4 ch / 8 ch switching) output (594 / 297 Mbps per ch)
  - SLVS - EC (1 Lane / 2 Lane / 4 Lane / 8 Lane switching) output (2.376 / 1.188 Gbps per Lane)
- ◆ 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 17.6 mm (Type 1.1)	Approx. 1.78 M pixels	All-pixel
◆ Total number of pixels	1608 (H) × 1136 (V)	Approx. 1.83 M pixels	
◆ Number of effective pixels	1608 (H) × 1104 (V)	Approx. 1.78 M pixels	
◆ Number of active pixels	1608 (H) × 1104 (V)	Approx. 1.78 M pixels	
◆ Number of recommended recording pixels	1604 (H) × 1100 (V)	Approx. 1.76 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 (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	1604 (H) × 1100 (V) approx. 1.76 M pixels	257.5	SLVS 8 ch	8
		662.1	SLVS – EC 8 Lane	
		213.5	SLVS 8 ch	10
		565.1	SLVS – EC 8 Lane	
		180.6	SLVS 8 ch	12
		481.4	SLVS – EC 8 Lane	

