[Product Information] IMX426LLJ

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

Description

The IMX426LLJ 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: 8 bit: 1594.7 frame/s, 10 bit: 1449.7 frame/s, 12 bit: 941.4 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) 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 −∞

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

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity (F8)</td>
<td>Typ.</td>
<td>4050 mV</td>
</tr>
<tr>
<td>Saturation signal</td>
<td>Min.</td>
<td>1001 mV</td>
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</table>

(Tj = 60 °C)

Basic Drive Mode

<table>
<thead>
<tr>
<th>Drive mode</th>
<th>Recommended number of recording pixels</th>
<th>Maximum frame rate [frame/s]</th>
<th>Output interface</th>
<th>ADC [bit]</th>
</tr>
</thead>
<tbody>
<tr>
<td>All pixel</td>
<td>812 (H) × 620 (V) approx. 0.50 M pixels</td>
<td>752.8</td>
<td>SLVS 8 ch</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1594.7</td>
<td>SLVS – EC 8 Lane</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>622.7</td>
<td>SLVS 8 ch</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1449.7</td>
<td>SLVS – EC 8 Lane</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>542.7</td>
<td>SLVS 8 ch</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>941.4</td>
<td>SLVS – EC 8 Lane</td>
<td></td>
</tr>
</tbody>
</table>
**[Product Information]**

**IMX426LQJ**

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

**Description**

The IMX426LQJ 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: 8 bit: 1594.7 frame/s, 10 bit: 1449.7 frame/s, 12 bit: 941.4 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) 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 –∞

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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

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<tr>
<td>Sensitivity (F5.6)</td>
<td>Typ.</td>
<td>4910 mV</td>
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<tr>
<td>Saturation signal</td>
<td>Min.</td>
<td>1001 mV</td>
</tr>
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<td></td>
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<td>SLVS 8 ch</td>
<td>10</td>
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