[Product Information]

IMX433LLJ

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 −∞

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.

Sony reserves the right to change products and specifications without prior notice.

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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)

<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>
</tr>
</tbody>
</table>

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>166.5</td>
<td>SLVS 2 ch</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>243.0</td>
<td>SLVS – EC 1 Lane</td>
<td></td>
</tr>
</tbody>
</table>
[Product Information]

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 −∞

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.

Sony reserves the right to change products and specifications without prior notice.

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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)

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity (F5.6)</td>
<td>4910 mV</td>
<td>1/30 s accumulation</td>
</tr>
<tr>
<td>Saturation signal</td>
<td>1001 mV</td>
<td></td>
</tr>
</tbody>
</table>

Basic Drive Mode

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<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>
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<td>SLVS 2 ch</td>
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<td></td>
<td></td>
<td>243.0</td>
<td>SLVS – EC 1 Lane</td>
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