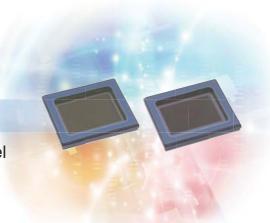


IMX183CLK-J/CQJ-J

Diagonal 15.86 mm (Type 1) Approx. 20.48M-Effective Pixel Monochrome/Color CMOS Image Sensor



High-Speed and High-Picture-Quality Rolling Shutter-Type Back-Illuminated CMOS Image Sensors with Multi Pixel

In the industrial application field, needs are increasing for faster products with higher pixel counts and for rolling shutter functions. To meet these needs, Sony Semiconductor Solutions Corporation has developed both color (IMX-183CQJ-J) and monochrome (IMX183CLK-J) products uses

a high sensitivity back-illuminated structure 2.4 µm square unit pixel. The optical size is Type 1 to enable use of a C-mount lens. In addition, these products are equipped with a variety of functions such as 4K video mode, a global reset function and a vertical arbitrary cropping function.

- Supports 20.48M-pixel readout at 21.98 frame/s in 12-bit mode
- Supports a global reset function
- Supports 4K video mode (4096H × 2160V, 10-bit mode, 59.94 frame/s)
- Supports a variety of readout modes such as 10-bit high-speed all-pixel readout, 12-bit high-resolution readout, and vertical arbitrary cropping
- High-sensitivity back-illuminated structure 2.4 μm square unit pixel with a proven record in products for security camera and industrial applications

Supports 20.48M-pixel readout at 21.98 frame/s in 12-bit mode

High-resolution 12-bit digital output of the signals for 20.48M pixels (aspect ratio 3:2) realizes high-speed readout at 21.98 frame/s. This image sensor enables even higher resolution

imaging of finer objects at high frame rates in excess of 20 frame/s, while still maintaining high picture quality.

Supports 4K video mode (4096H × 2160V, 10-bit mode, 59.94 frame/s)

10-bit digital output of the signals for approx. 9.03M-effective pixels (aspect ratio approx. 17:9) realizes high-speed output

at 59.94 frame/s and also enables video imaging.

Supports various readout modes

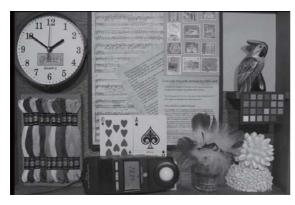
The IMX183CQJ-J/CLK-J series supports various readout modes including the above-noted high-resolution 12-bit all-pixel output, 10-bit all-pixel output that enables even faster readout, and high-speed 4K video output, as well as

vertical arbitrary cropping output mode (cropping size restrictions apply) and a high-speed readout mode that uses the binning function (Table 3).

High-sensitivity back-illuminated structure 2.4 μ m square unit pixel with a proven record in products for security camera and industrial applications

The IMX183CQJ-J/CLK-J series uses a high-sensitivity back-illuminated structure 2.4 µm square unit pixel with a

proven record in the IMX178LLJ/LQJ*1 (for security camera and industrial applications).







IMX183CQJ-J 33ms accumulation

<Table 1> Device Structure

| Item | | IMX183CLK-J/CQJ-J | |
|---------------------------------------|------------|---|--|
| Output image size | | Diagonal 15.86 mm (Type 1) aspect ratio 3:2 | |
| Number of effective pixels | | 5544 (H) × 3694 (V) approx. 20.48M pixels | |
| Unit cell size | | 2.4 μm (H) × 2.4 μm (V) | |
| Optical blacks | Horizontal | Front: 48 pixels, rear: 0 pixels | |
| | Vertical | Front: 16 pixels, rear: 0 pixels | |
| Input drive frequency | | 72 MHz | |
| Output Interface | | Sub-LVDS (576 Mbps / ch, Max.10 ch) *1 | |
| Package | | 118-pin LGA | |
| Supply voltage V _{DD} (Typ.) | | 2.9 V / 1.8 V / 1.2 V | |

^{*1} Sensor slave mode only.

<Table 2> Image Sensor Characteristics

| Item | | Value | Remarks |
|--------------------------|-------------|--------|--------------------|
| Sensitivity (monochrome) | Тур. [F8] | 388 mV | 1/30s accumulation |
| G Sensitivity (color) | Typ. [F5.6] | 461 mV | 1/30s accumulation |
| Saturation signal | Min. | 942 mV | Tj = 60 °C |

<Table 3> Basic Drive Mode

| Drive mode | Recommended number of recording pixels | Frame rate [frame/s] | ADC [bit] |
|---|--|----------------------|-----------|
| All-pixel scan (12 bit) *1 | 5472 (H) × 3648 (V) | 21.98 | 12 |
| All-pixel scan (10 bit) *1 | 5472 (H) × 3648 (V) | 24.98 | 10 |
| Type 1/1.4 approx.9.03M-Pixel (approx. 17:9) (10 bit) | 4096 (H) × 2160 (V) | 59.94 | 10 |
| Vertical Arbitrary Cropping (10 bit) *2 | 5472 (H) × 1802 (V) to 5472 (H) × 3648 (V) | 24.98 over | 10 |

^{*1} These modes can be used together with the global reset function.

This product is designed for consumer use applications, so the quality and reliability of the product are also the consumer use application range. This quality and reliability range should be kept in mind when using this product for other than consumer use applications.

^{*2} In vertical arbitrary cropping area from type 1 approx. 20.48M pixels (3:2) all-pixel scan area is readout with 10-bit output.

 $^{^{\}star}$ Sony Semiconductor Solutions Corporation reserves the right to change products and specifications without prior notice.

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