

Diagonal 6.46 mm (Type 1/2.8) CMOS Solid-state Image Sensor with Square Pixel for Multispectral Imaging

Description

The IMX454LXR is a diagonal 6.46mm (Type 1/2.8) CMOS active pixel type solid-state image sensor with a square pixel array and 2.13 M effective pixels. Multispectral Imaging can be achieved with dedicated signal processing. This chip operates with analog 2.9 V, digital 1.2 V, and interface 1.8 V triple power supply, and has low power consumption. This chip features an electronic shutter with variable charge-integration time.
(Applications: FA cameras, Embedded vision systems)

Features

- ◆ CMOS active pixel type dots
- ◆ Built-in timing adjustment circuit, H/V driver and serial communication circuit
- ◆ Rolling shutter function
- ◆ Input frequency 74.25 MHz / 37.125 MHz
- ◆ Number of recommended recording pixels: 1920 (H) × 1080 (V) approx. 2.07 M pixels
- ◆ Readout mode
 - All-pixel scan mode, 720p-HD readout mode, Window cropping mode
 - Vertical / Horizontal direction-normal / Inverted readout mode
- ◆ Readout rate
 - Maximum frame rate in Full HD 1080p mode 120 frame / s
- ◆ Wide dynamic range (WDR) function
 - Multiple exposure WDR, Digital overlap WDR
- ◆ Variable-speed shutter function (resolution 1 H units)
- ◆ 10-bit / 12-bit A/D converter
- ◆ CDS / PGA function
 - 0 dB to 30 dB: Analog Gain 30 dB (0.3 dB step)
 - 30.3 dB to 72 dB: Analog Gain 30 dB + Digital Gain 0.3 dB to 42 dB (0.3 dB step)
- ◆ Supports I/O interface
 - Low voltage LVDS (150m Vp-p) serial (2 ch / 4 ch / 8 ch switching) DDR output
 - CSI-2 serial data output (2 Lane / 4 Lane, RAW10 / RAW12 output)

Device Structure

◆ CMOS image sensor		
◆ Total number of pixels	1945 (H) × 1109 (V)	Approx. 2.16 M pixels
◆ Number of effective pixels	1945 (H) × 1097 (V)	Approx. 2.13 M pixels
◆ Number of active pixels	1937 (H) × 1097 (V)	Approx. 2.12 M pixels
◆ Number of recommended recording pixels	1920 (H) × 1080 (V)	Approx. 2.07 M pixels
◆ Unit cell size	2.9 μm (H) × 2.9 μm (V)	
◆ Package	114 pin LGA	12.0 mm (H) × 9.3 mm (V)

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