

LI7050SA

9.12mm Diagonal 2.12MP High Sensitivity FHD CMOS Sensor on PKG with 4.1µm Square Pixels at 60fps

DESCRIPTION

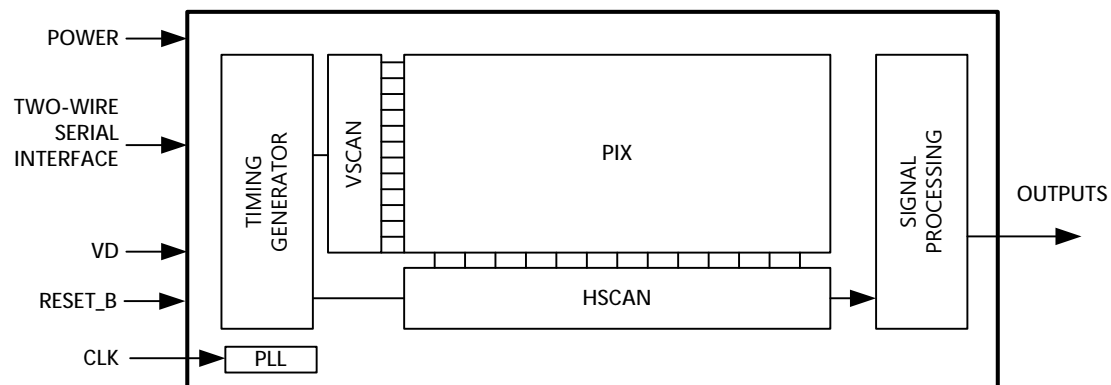
The LI7050SA is a 1/1.8 inch size (diagonal 9.12 mm) color CMOS solid-state image sensor with 2.12M effective pixels in a square pixel array.

This sensor is capable of full area readout at 60 fps and realizes high-sensitivity FHD movie recording.

FEATURES

- LI7050SAC: Color sensor
- Rolling shutter
- Recording screen size: 7.94 mm x 4.49 mm
- Number of effective pixels: 1936 x 1096 (Horizontal x Vertical)
- Pixel size: 4.1 µm x 4.1 µm
- Number of output channels: Data 4 lanes, Clock 1 lane
- Output format: 576 Mbps in MIPI-CSI2 output 60 fps @12 bit (RAW12)
- Main clock frequency: 24MHz (recommended)
- Full area readout: 60fps
- Selectable region of interest feature
- Analog gains 0 dB, 6 dB, 12 dB, 18 dB
- Serial communication
- High sensitivity
- Sensitivity (Green) : 54,000 e/lx/sec
- Saturation : 24,000 e
- Dark random noise : 1.1 e rms @room temperature
- Dark current : 22 e/sec @60°C (package reverse side)
- Power consumption: 320 mW (Typ.) @Full area readout at 60 fps
- Power supply voltages: 3.3V, 1.8V, 1.2V
- 94 pin ceramic LGA
- Package size: 16.88 mm x 13.27 mm x 2.74 mm

FUNCTIONAL BLOCK DIAGRAM



	250MP		120MP			5MP Global shutter						1/1.8" 2.1MP HDR	1" 12MP		
	LI8020SAC	LI8020SAM	120MXSC	120MXSM	120MXSI	LI5010SAC	LI5010SAM	LI5010SAI	LI5020SAC	LI5020SAM	LI5020SAI	LI7050SAC	LI7030SAC		
Filter Type	RGB	Monochrome	RGB	Monochrome	RGB-NIR	RGB	Monochrome	RGB-NIR	RGB	Monochrome	RGB-NIR	RGB	RGB		
Sensitivity (e-/lx/sec)	4,600 (Green)	11,000	10,000 (Green)	20,000	10,000 (Green)	30,000 (Green)	47,000	30,000 (Green)	30,000 (Green)	54,000	30,000 (Green)	55,000 (Green)	22,000		
Dark Random Noise	3.8 erms @ 12dB		2.3e rms @ gain x8, Room Temperature			2.6e rms @ Analog gain x1			2.6e rms @ Analog gain x1			1.1e rms @ room temperature	2.6e rms @ 4K3K, 24fps(12bit)		
Saturation	5,400 [e] (@6dB)		10,000 [e] (@gain x0.5)			12,000e – Dynamic Range Priority Mode (@ Analog gain 0 dB)			12,000e – Dynamic Range Priority Mode (@ Analog gain 0 dB)			30,000 [e] (@gainx1)		25,000 [e]	
						7,000e – Frame Rate Priority Mode (@ Analog gain 0 dB)			7,000e – Frame Rate Priority Mode (@ Analog gain 0 dB)						
Resolution (megapixels)	250		122			5			5			2.12	12		
Effective Pixels (Horizontal xVertical)	19568 x 12588		13272 x 9176			2592 x 2056			2592 x 2056			1936 x 1096	4004 x 3000		
Sensor Size	APS-H (29.35mm x 18.88mm)		APS-H (29.22mm x 20.20mm)			Approx. 2/3 inch (8.8mm x 7.0mm)			Approx. 2/3 inch (8.8mm x 7.0mm)			1/1.8 inch (7.94mm x 4.49mm)	1 inch (12.8mm x 9.6mm)		
Pixel Size	1.5µm x 1.5µm		2.2µm x 2.2µm			3.4µm x 3.4µm			3.4µm x 3.4µm			4.1 µ m x 4.1 µ m	3.2µm x 3.2µm		
Maximum Frame Rate	5 fps		9.4 fps			60fps – Dynamic Range Priority Mode			60fps – Dynamic Range Priority Mode			60fps	4K3K video at 24 fps (12bit)		
						120fps – Frame Rate Priority Mode			120fps – Frame Rate Priority Mode			30 fps (HDR)	4K2K video at 60 fps (10bit)		
Shutter Type	Rolling		Rolling			Global electronic shutter function			Global electronic shutter function			Rolling	Rolling		
I/F	LVDS		LVDS			LVDS			LVDS			MIPI CSI-2	LVDS		
Power Consumption (Type)	2.0W (under recommended operating conditions)		2.5 W (under recommended operating conditions)			500mW (all pixels @ 120 fps)			510mW (all pixels @ 120 fps) 440mW (all pixels @ 42 fps)Low Power mode			320mW (all pixels @ 60 fps)	540 mW @4K2K readout, 60fps (10bit)		

The contents of this specification are subject to change without notice