



LTN4625A sCMOS 12MP Image Sensor

OVERVIEW

The Fairchild Imaging LTN4625A is a lightning fast 12MP sCMOS image sensor in an APS-C optical format, supporting 240 frames per second at 12MP resolution.

This sensor is designed to support the demanding imaging needs of machine vision, high-end security/surveillance and scientific applications. The device features an array of 5T pixels on a 5.5µm pitch with an active imaging area of 4608 (H) x 2592 (V) pixels.

The LTN4625A sensor can operate in rolling shutter, global shutter, and global reset mode. Under controlled lighting conditions where global reset is appropriate, it performs like global shutter while delivering performance benefits of rolling shutter. In this mode, the part will deliver <math><1.5e^{-}</math> read noise and >40,000e⁻ full-well capacity at 240 fps. Furthermore it has no motion distortion, which is a typical issue in rolling shutter mode.

KEY FEATURES

Rolling Shutter (RS), Global Reset (GR), and Global Shutter (GS)

Lightning fast speed

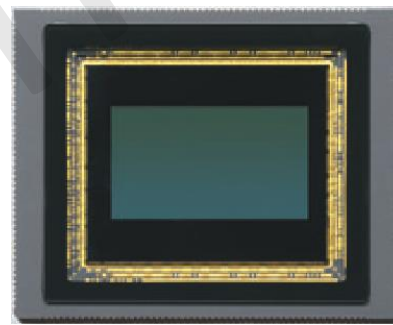
- 240 fps at 12MP, 600 fps at Full HD (RS/GR)
- 120 fps at 12MP (GS)

Exceptional low readout noise

- <math><1.5 e^{-}</math> RMS (RS/GR), <math><5 e^{-}</math> RMS (GS)

Intra-Scene Wide Dynamic Range

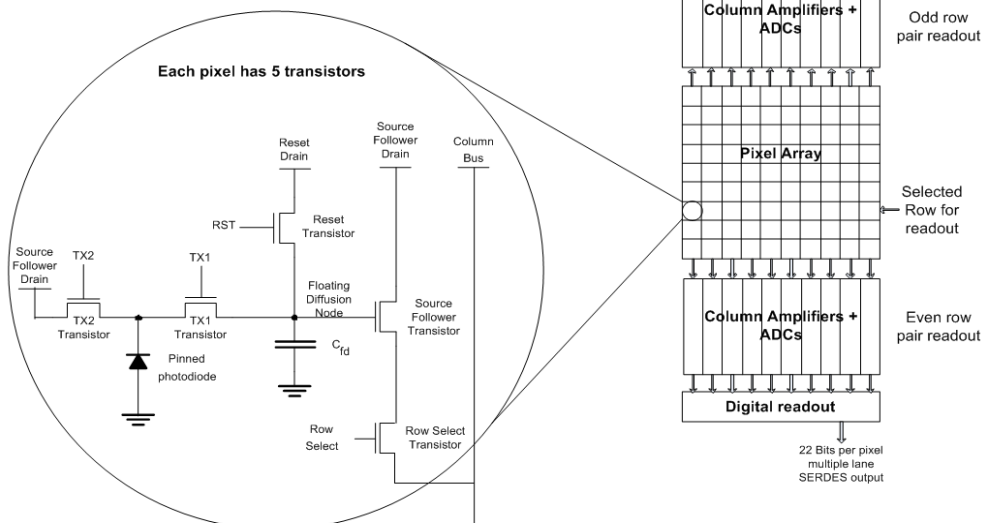
- > 88 dB single frame (RS/GR), > 77 dB (GS)



BLOCK DIAGRAM

LTN4625A sCMOS Image Sensor

- Patented pixel and sensor architecture
- Dual column amplifier and ADC architecture
- Support anti-blooming

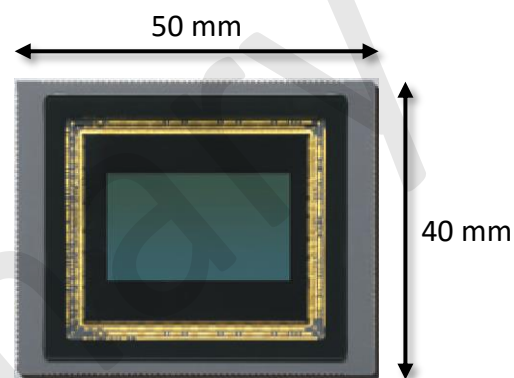




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GENERAL SPECIFICATIONS (Preliminary)

Items	Parameters
Optical format	APS-C
Active array size	4608 (H) x 2592 (V)
Pixel size	5.5 μm x 5.5 μm
Active area	25.3 mm x 14.3 mm
Diagonal of active area	29.06 mm
Chroma	RGB and Monochrome
Shutter type	Rolling Shutter (RS), Global Reset (GR), and Global Shutter (GS)
Max. frame rate	240 fps at 12MP (RS/GR) 120 fps at 12MP (GS)
ADC resolution	22 bits (2 x 11-bit)
Read noise	< 1.5 e- RMS at 240 fps (RS/GR) < 5 e- RMS at 120 fps (GS)
Dynamic range	> 88 dB single frame (RS/GR) > 77 dB single frame (GS)
Full well capacity	> 40,000 e- (RS/GR)
Dark current	< 15 e-/pixel/sec at 20 °C (RS/GR)
Power consumption	~6.4W at 240 fps full resolution
I/O interface	Digital: 32 SERDES (3.125GHz per lane)
Supply voltage	-0.4V, 1.2V, 1.8V, 3.0V, 3.3V
Operating temp	-40 °C to + 55 °C (at junction)
Package type	194-pin CLCC



LTN4625A
Standard CLCC Package

PRODUCT EVALUATION KIT (PEK)

The Fairchild Imaging LTN4625A USB3 PEK provides a very powerful and user-friendly system which enables users to fully evaluate the capabilities of sCMOS performance advantages which include: superior low-light performance, high dynamic range, and high frame rates.

The LTN4625A USB3 PEK contains:

- Evaluation camera with LTN4625A sensor (color or mono)
- 17-inch Laptop PC with powerful GPU ISP
- Software (GUI)
- PEK quick startup guide and user manual document

Availability:

- Please contact our Sales Department (cams.sales@baesystems.com)



CONTACT

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