FAIRCHILD IMAGING
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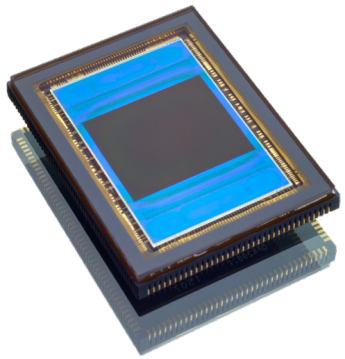
CIS2521

Ultra Low-Noise Image Sensor

5.5MP | sCMOS 2.0 Technology



The CIS2521 is a large format, ultra low-noise CMOS image sensor intended for applications requiring high-quality imaging under low-light conditions

The device features an array of five transistor (5T) pixels on a 6.5µm pitch with an active imaging area of 2560(H) x 2160(V) pixels. the CIS2521 delivers extreme low-light sensitivity with read noise less than 2e- Root Mean Square (RMS) in Rolling Shutter, less than 5e- RMS in Global Shutter, and Quantum Efficiency (QE) above 60 percent.

The sensor runs in Rolling and Global Shutter readout modes. the sensor has two ADC channels per column with one optimized for low light levels and the other optimized for high light levels, enabling high dynamic range data collection in a single image. The sensor supports user-programmable row start/stop control for region of interest (ROI) readout. the sensor is housed in a 168-pin LCC package. These features, combined with 5.5 megapixel resolution and 100 fps imaging rates, make the CIS2521 an imaging device ideally suited for a variety of low light-level camera applications.

Key features and benefits

- Rolling Shutter (RS) and Global Shutter (GS)
- Superior low light image quality
- 83.5dB intra scene dynamic range
- 100 fps at 5.5MP
- Technology Readiness Level 9 for Space Imaging

Applications

- Science
- Medical
- Industrial
- Professional Video
- High-end Security
- Space Domain

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Ideal for capturing scenes in extreme lighting conditions

Specifications

Sensor

Optical format	4/3"
Configurations	Monochrome or Bayer RGB
Active array	2560 (H) x 2160 (V)
Active area	16.6 mm x 14.0 mm
Active diagonal	21.77 mm
Frame rates	100 fps (RS), 50 fps (GS)
ADC resolution	22 bits (2 x 11-bit)

Pixel

Pixel size	6.5µm x 6.5 µm
Shutter types	Rolling Shutter and Global Shutter
Read noise[1]	<2 e- RMS (RS) <5 e- RMS (GS)
Dynamic range	>83.5 dB
Peak QE	>60%
Full Well Capacity	>30,000 e-
Dark Current[2]	<35 e-/ pixel/ sec

Interface

I/O Interface	Digital: 1.8V LVCMOS / 1.8V HSTL

Operating

Power consumption	<2W at 100 fps
Supply voltages	-0.4, 1.8V, 3.0V, 3.3V
Operating temp	-40°C to +55°C

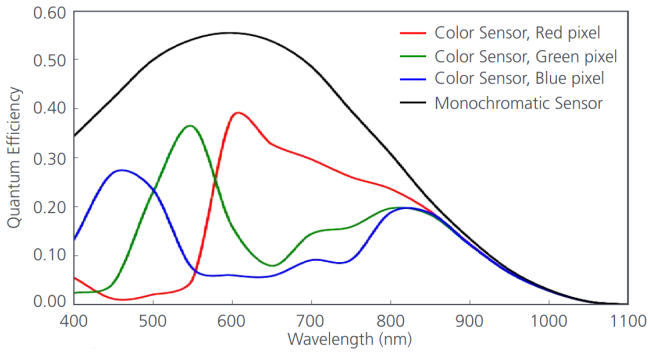
Packaging

Package	168 Pin CLCC

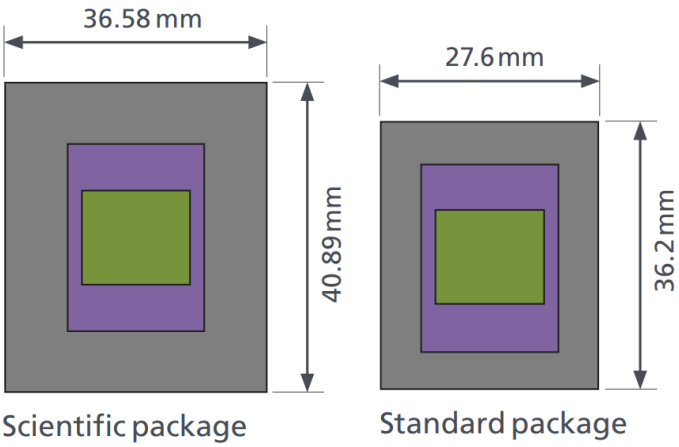
[1]Median value, high gain output (30x)

[2]At 20°C

QE Curve



Dimensions



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