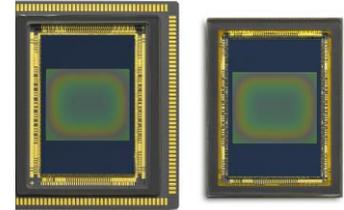


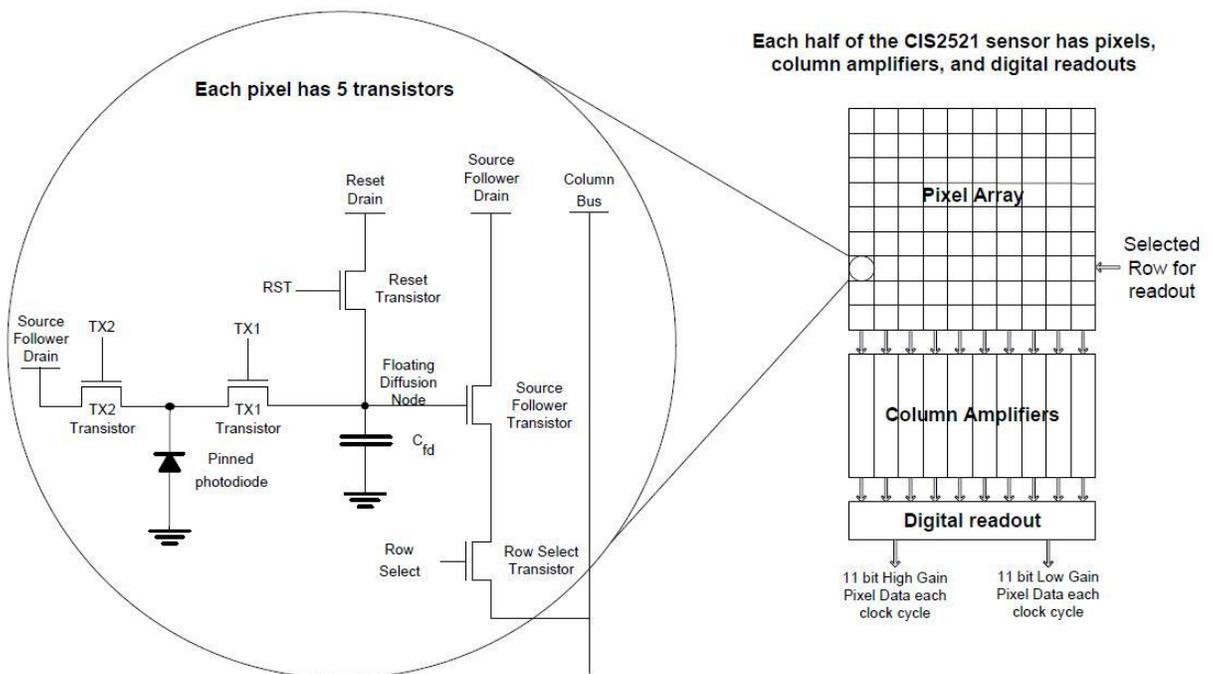
Fairchild Imaging CIS2521

5.5 Megapixel Ultra Low Noise CMOS Image Sensor

The Fairchild Imaging CIS2521 is a large format, ultra low-noise CMOS image sensor intended for applications requiring high quality imaging under extremely low light conditions. The device features an array of 5 transistor (5T) pixels on a $6.5\mu\text{m}$ 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 2 electrons RMS, Quantum Efficiency (QE) above 55% and very low dark current. 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 including: security/surveillance, industrial, prosumer videocam, and medical.

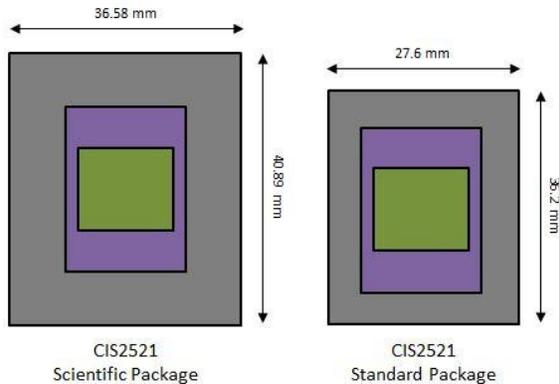


BLOCK DIAGRAM



FEATURES

- **Superior Low Light Image Quality**
- **> 83.5 dB Intra Scene Dynamic Range**
- **100 FPS at 5.5MP**
- **Rolling and Global Shutter**

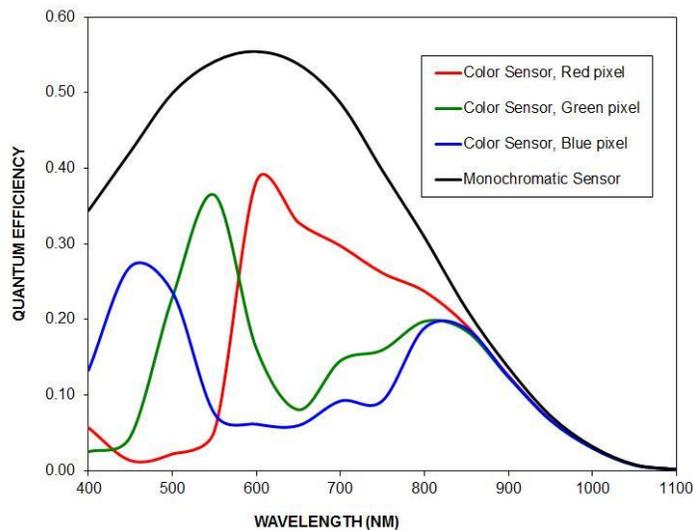


SPECIFICATIONS

| | |
|---------------------------|---------------------------------------|
| Optical format | 4/3" |
| Active array size | 2560 (H) x 2160 (V) |
| Pixel size | 6.5 μm x 6.5 μm |
| Active area | 16.6 mm x 14.0 mm |
| Chroma | RGB or monochrome |
| Shutter type | Rolling shutter, Global Shutter |
| Maximum frame rate | 100 fps (RS), 50 fps (GS) |
| ADC resolution | 22 bits (2 x 11-bit) |
| Read noise ¹ | < 2 e- RMS |
| Dynamic range | > 83.5 dB |
| Peak QE | > 55% |
| Full well capacity | > 30,000 e- |
| Dark current ² | < 35 e-/pixel/sec |
| Power consumption | < 2W at 100 fps |
| I/O interface | Digital: 1.8V LVCMOS and 1.8V HSTL |
| Supply voltages | -0.4V, 1.8V, 3.0V, 3.3V |
| Operating temp | - 40 to +55 °C |
| Package type | 168-pin CLCC |

¹Median value, high gain output (30x), ²At 20°C

QUANTUM EFFICIENCY



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