Kodak
Image Sensor Solutions

PRODUCT SUMMARY

KODAK KAI-02050 IMAGE SENSOR

1600 (H) X 1200 (V) PROGRESSIVE SCAN INTERLINE CCD IMAGE SENSOR

DESCRIPTION

The KODAK KAI-02050 Image Sensor is a 2-megapixel CCD in a 2/3" (11 mm diagonal) optical format. Based on the KODAK TRUESENSE 5.5 micron Interline Transfer CCD Platform, the sensor features broad dynamic range, excellent imaging performance, and a flexible readout architecture that enables use of 1, 2, or 4 outputs for full resolution readout up to 68 frames per second. A vertical overflow drain structure suppresses image blooming and enables electronic shuttering for precise exposure control. Other features include low dark current, negligible lag, and low smear.

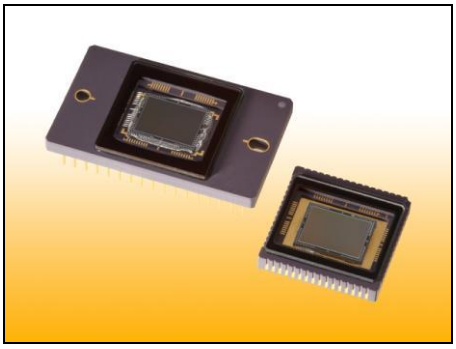
The sensor shares common pin-out and electrical configurations with other devices based on the KODAK TRUESENSE 5.5 micron Interline Transfer CCD Platform, allowing a single camera design to support multiple members of this sensor family.

FEATURES

- Color or Monochrome configurations
- Progressive scan readout
- Flexible readout architecture
- High frame rate
- High sensitivity
- Low noise architecture
- Excellent smear performance
- Package pin reserved for device identification

APPLICATIONS

- Industrial Imaging
- Medical Imaging
- Security



Parameter	Typical Value
Architecture	Interline CCD; Progressive Scan
Total Number of Pixels	1684 (H) x 1264 (V)
Number of Effective Pixels	1640 (H) x 1240 (V)
Number of Active Pixels	1600 (H) x 1200 (V)
Pixel Size	5.5 µm (H) x 5.5 µm (V)
Active Image Size	8.8mm (H) x 6.6mm (V) 11.0mm (diagonal) 2/3" optical format
Aspect Ratio	4:3
Number of Outputs	1, 2, or 4
Charge Capacity	20,000 electrons
Output Sensitivity	34 µV/e^-
Quantum Efficiency KAI-02050-ABA KAI-02050-CBA	 50 % (500 nm) 31%, 42%, 43% (620, 540, 470 nm)
Read Noise (f= 40MHz)	12 electrons rms
Dark Current Photodiode VCCD	 7 electrons/s 140 electrons/s
Dark Current Doubling Temp Photodiode VCCD	 7 °C 9 °C
Dynamic Range	64 dB
Charge Transfer Efficiency	0.999999
Blooming Suppression	> 300 X
Smear	-100 dB
Image Lag	< 10 electrons
Maximum Pixel Clock Speed	40 MHz
Maximum Frame Rates Quad Output Dual Output Single Output	 68 fps 34 fps 18 fps
Package	68 pin PGA 64 pin CLCC
Cover Glass	AR Coated, 2 Sides

All parameters are specified at T = 40° C unless otherwise noted.

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ORDERING INFORMATION

Catalog Number	Product Name	Description	Marking Code
4H2031	KAI-02050-AAA-JR-BA	Monochrome, No Microlens, PGA Package, Taped Clear Cover Glass with AR coating (both sides), Standard Grade	KAI-02050-AAA Serial Number
4H2032	KAI-02050-AAA-JR-AE	Monochrome, No Microlens, PGA Package, Taped Clear Cover Glass with AR coating (both sides), Engineering Grade	
4H2033	KAI-02050-ABA-JD-BA	Monochrome, Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Standard Grade	KAI-02050-ABA Serial Number
4H2034	KAI-02050-ABA-JD-AE	Monochrome, Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Engineering Grade	
4H2035	KAI-02050-ABA-JR-BA	Monochrome, Telecentric Microlens, PGA Package, Taped Clear Cover Glass with AR coating (both sides), Standard Grade	
4H2036	KAI-02050-ABA-JR-AE	Monochrome, Telecentric Microlens, PGA Package, Taped Clear Cover Glass with AR coating (both sides), Engineering Grade	
4H2150	KAI-02050-ABA-FD-BA	Monochrome, Telecentric Microlens, CLCC Package, Sealed Clear Cover Glass with AR coating (both sides), Standard Grade	
4H2151	KAI-02050-ABA-FD-AE	Monochrome, Telecentric Microlens, CLCC Package, Sealed Clear Cover Glass with AR coating (both sides), Engineering Grade	
4H2037	KAI-02050-CBA-JD-BA	Color (Bayer RGB), Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Standard Grade	KAI-02050-CBA Serial Number
4H2038	KAI-02050-CBA-JD-AE	Color (Bayer RGB), Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Engineering Grade	
4H2152	KAI-02050-CBA-FD-BA	Color (Bayer RGB), Telecentric Microlens, CLCC Package, Sealed Clear Cover Glass with AR coating (both sides), Standard Grade	
4H2153	KAI-02050-CBA-FD-AE	Color (Bayer RGB), Telecentric Microlens, CLCC Package, Sealed Clear Cover Glass with AR coating (both sides), Engineering Grade	

See ISS Application Note "Product Naming Convention" (MTD/PS-0892) for a full description of naming convention used for KODAK image sensors.

For all reference documentation, please visit our Web Site at www.kodak.com/go/imagers.

Please address all inquiries and purchase orders to:

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