

ONE CAMERA DESIGN FOR A FAMILY OF CCD IMAGE SENSORS

THE KODAK TRUESENSE 5.5-MICRON INTERLINE TRANSFER CCD PORTFOLIO – PGA PACKAGES

DESCRIPTION

With the KODAK TRUESENSE 5.5-micron Interline Transfer CCD Portfolio, a single camera design can be used to support a full family of image sensors. Each product in the family is available in a PGA package that shares pin-out and electrical definitions with other members of the portfolio, and has a reserved pin that can be read by the camera to identify the specific sensor being used. Camera designers now have true “Plug and Play” interoperability that simplifies camera development and shortens time to market for a portfolio of cameras.

All members of the family share the same high-performance, progressive scan CCD pixel design, providing outstanding image quality with low noise, low smear, and electronic (global) shutter. Products are available in Monochrome, Bayer Color, and KODAK TRUESENSE Color Filter Pattern configurations, and several sensors in the family are also available in a common CLCC package.

FEATURES

- Resolutions from 1 to 29 megapixels
- “Plug and Play” sensors allow a single camera design to support the entire product family
- Device ID pin lets camera identify the specific sensor plugged into camera board
- Common pixel design provides outstanding imaging performance across product portfolio
- Bayer Color Pattern, KODAK TRUESENSE Color Filter Pattern, and Monochrome configurations

APPLICATIONS

- Industrial Imaging and Inspection
- Security, Surveillance, and Intelligent Traffic Systems
- Medical Imaging



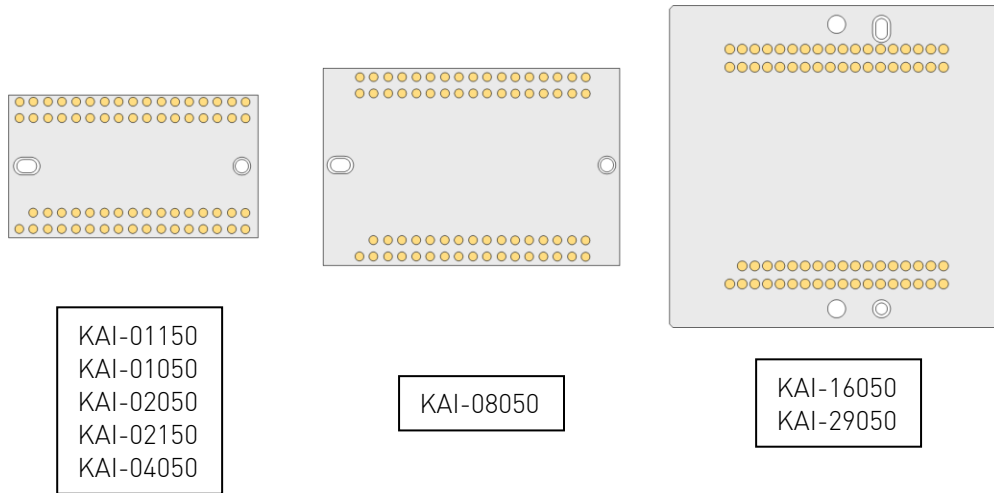
Parameter	Typical Value
Architecture	Interline CCD; Progressive Scan
Available Resolutions	720p (1280 x 720) 1 MPix (1024 x 1024) 2 MPix (1600 x 1200) 1080p (1920 x 1080) 4 MPix (2336 x 1752) 8 MPix (3296 x 2472) 16 MPix (4896 x 3264) 29 MPix (6576 x 4384)
Pixel Size	5.5 μm (H) x 5.5 μm (V)
Number of Outputs	1, 2, or 4
Charge Capacity	20,000 electrons
Output Sensitivity	34 μV/e ⁻
Quantum Efficiency	R, G, B (620, 540, 470 nm) 31%, 42%, 43% Pan (500 nm) 50%
Base ISO	Monochrome 330 Bayer Color 150 KODAK TRUESENSE Color 330
Read Noise (f= 40MHz)	12 electrons rms
Photodiode Dark Current	7 electrons / s
VCCD Dark Current	140 electrons / s
Dark Current Doubling Temp	Photodiode 7 °C VCCD 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 (32 MHz for KAI-29050)
Package	68 pin PGA (72 pin for KAI-29050 and KAI-16050)
Cover Glass	AR Coated, 2 Sides

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

PGA CONFIGURATION INFORMATION

Product	Resolution	Optical Format	Max Frame Rate (fps)	CFA Options			PGA Package Dimensions (mm)	Device ID Value (Ω)
				Bayer Color	KODAK TRUESENSE	Mono		
KAI-01150	720p [1280 x 720]	1/2"	138	✓	✓	✓	20.1 x 33.0	5k
KAI-01050	1 MPix [1024 x 1024]	1/2"	120	✓		✓		∞
KAI-02050	2 MPix [1600 x 1200]	2/3"	68	✓		✓		108k
KAI-02150	1080p [1920 x 1080]	2/3"	60	✓	✓	✓		55k
KAI-04050	4 MPix [2336 x 1752]	1"	32	✓	✓	✓		25k
KAI-08050	8 MPix [3296 x 2472]	4/3 [22 mm diag]	16	✓	✓	✓	29.0 x 40.0	10k
KAI-16050	16 MPix [4896 x 3264]	APS-H	8	✓	✓	✓	45.3 x 47.2	180k
KAI-29050	29 MPix [6575 x 4384]	35 mm	4	✓	✓	✓	45.3 x 47.2	300k

PACKAGE SCHEMATICS



Product literature and full data sheets are available at www.kodak.com/go/imagers.

Please address all inquiries and purchase orders to:

Image Sensor Solutions
Eastman Kodak Company
Rochester, New York 14650-2010

Phone: (585) 722-4385
Fax: (585) 477-4947
E-mail: imagers@kodak.com