

SUMMARY SPECIFICATION

KODAK KAC-5000 IMAGE SENSOR

2592(H) X 1944(V) CMOS RAW COLOR IMAGE SENSOR

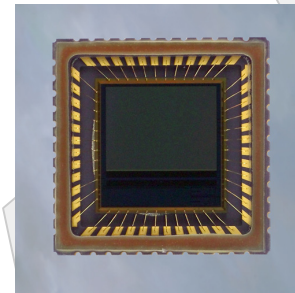
DESCRIPTION

The KAC-5000 is a fully integrated, high performance 1/1.8" format 5.0 Megapixel CMOS image sensor designed for digital still camera and digital video applications. Incorporating Kodak PIXELUX technology, including the use of pinned photodiodes and a four-transistor shared-pixel (4T4S) architecture, the sensor offers outstanding image quality while providing unique binning modes of operation for increased sensitivity.

By combining advanced CMOS pixel design with high-performing and low-power mixed signal circuits, the KAC-5000 provides high sensitivity with low noise, making it an ideal choice for demanding battery-powered and slim profile applications.

FEATURES

- Kodak PIXELUX technology, including pinned photodiodes and 4T4S architecture, for superior imaging performance
- Selectable charge-domain binning for increased sensitivity under low-light operation.
- Thin copper metal manufacturing process for improved optical angle response and high quantum efficiency
- Subsampling and region of interest windowing modes for custom readouts
- Flexible programming via I²C compatible serial interface, with dedicated strobe flash sync
- Progressive programmable scan, electronic rolling shutter, digital video output with Flip and Mirror output options
- Single master clock: 10 to 36 MHz operation



Parameter	Value
Architecture	4T4S pixel CMOS
Number of Active Pixels	2592 (H) x 1944 (V) (5.0 Mpix)
Digital Video Output	10 bit parallel Bayer Raw
Pixel Size	2.7 μm (H) x 2.7 μm (V)
Optical Size	7.00 mm (H) 5.24 mm (V) 8.75 mm (diagonal) 1/1.8" optical format
Quantum Efficiency	(480 nm, 540 nm, 590 nm) 35%, 41%, 39%
Scan mode	Progressive scan
Shutter modes	Continuous & Single Frame Rolling Shutter
Readout Noise	30 e ⁻
Dynamic Range	52 dB
Readout rate	10-36 MSPS
Maximum Frame Rate	6 fps @ QXGA / 30 fps @ VGA
Programmable Gain	Global or White Balance: 4x, or up to 8x using additional 2x digital gain
Power supply	I/Os 3.3V ±5% Analog 3.3V ±5% Core 1.8V ±5%
Power Dissipation	<150 mW dynamic <500 μW standby
Operating Temperature	-10°C to 60°C
Package Type	48 pin CLCC

All parameters specified at T = 40°C, 36 MHz