

MT9J003



10-Megapixel  
1/2.3-Inch  
CMOS Digital Image Sensor  
Full HD Support  
48-Pin iLCC

## A High-Speed, Low-Power Sensor for DSC Designs

### 1 High Image Quality

Produced on Aptina's most advanced pixel technology, this high-resolution, compact sensor is perfect for DSC/DVC designs.

### 2 High-Speed Performance

Supports full HD—1080p at 60 fps—which is unmatched by CCDs and supports 15 fps at full resolution.

### 3 HiSPi™ Differential Signalling

Four-lane serial high-speed pixel interface (HiSPi) differential signalling (sub-LVDS) supports up to 2.8 Gb/s, which enables full HD.

### 4 Low Power Consumption

Low power advantages of CMOS technology extend the life of a DSC/DVC battery.

### 5 New Binning and Summing

Reduces artifacts created by normal binning operations.

## Applications

- Digital still cameras
- Digital video cameras



## How to Buy

Production and sample quantities of Aptina products may be ordered through qualified distributors. See our Web site for details. You may also request access to NDA data sheets and other technical documentation by visiting our Web site.



## Features

- DigitalClarity® CMOS imaging technology
- Simple two-wire serial interface
- Auto black level calibration
- Support for external mechanical shutter
- Support for external LED or xenon flash
- High frame rate preview mode with arbitrary downsize scaling from maximum resolution
- Programmable controls: gain, horizontal and vertical blanking, auto black level offset correction, frame size/rate, exposure, left-right and top-bottom image reversal, window size, and panning
- Data interfaces: parallel or four-lane serial high-speed pixel interface (HiSPi™) differential signalling (sub-LVDS)
- On-die phase-lock loop (PLL) oscillator
- Bayer pattern downsize scaler
- Integrated position-based color and lens shading correction
- One-time programmable (OTP) memory for storing module information

## Specifications

### Imaging Array

- Optical Format: 1/2.3-inch
- Active Array: 3856(H) x 2764(V) (entire sensor)  
3664(H) x 2748(V) (4:3 still mode)  
3840(H) x 2160(V) (16:9 video mode)
- Imaging Area: 6.119mm(H) x 4.589mm(V)

### Speed/Output

- Frame Rate: 15 fps (HiSPi serial I/F)  
7.5 fps (parallel I/F)
- Data Rate: 2.8 Gb/s (HiSPi serial I/F)  
80 Mp/s (parallel I/F)
- Master Clock: 6–48 MHz
- Data Format: 12-bit RAW

### Sensitivity

- Pixel Size: 1.67μm x 1.67μm
- Dynamic Range: 65.2dB
- Responsivity: 0.31 V/lux-sec (550nm)

### Power

- Supply: Analog: 2.4–3.1V (2.8V nominal)  
Digital: 1.7–1.9V (1.8V nominal)  
I/O: 1.7–1.9V (1.8V nominal) or  
2.4–3.1V (2.8V nominal)  
HiSPi Tx: 0.4–0.8V (0.4V or 0.8V nominal)
- Consumption: 638mW @ full resolution

### Optics

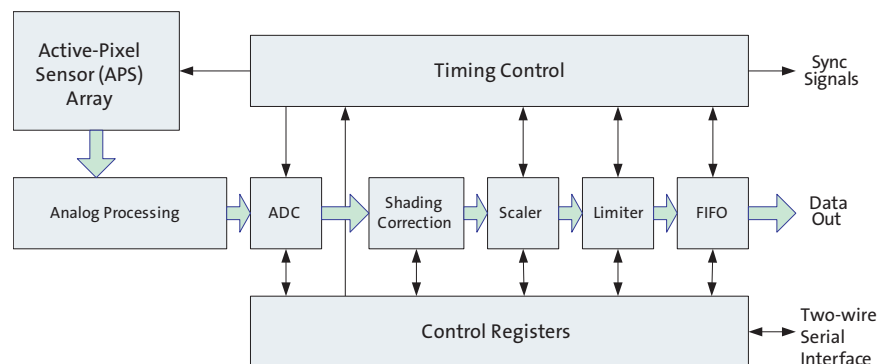
- CRA: 0 degree

### Temperature Range

- Operating: –30°C to +70°C

**Package:** 10mm x 10mm 48-pin iLCC

## Block Diagram



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