

MT9D113



2-Megapixel  
1/5-Inch  
CMOS Image Sensor  
Die

## Capture High-Quality Images Anytime With This Cost-Effective 2Mp SOC

- 1 Renowned Image Quality**  
Good low-light sensitivity and an advanced SOC pipeline provide excellent image quality.
- 2 Low-Cost 2Mp Implementation**  
The MT9D113 is a compelling cost-down solution for 1/4-inch 2Mp parts or an easy upgrade path for VGA or 1.3Mp.
- 3 High-Speed Video Modes**  
Differentiate your designs with high frame rate video speeds: 15 fps (full resolution) and 30 fps (video mode).
- 4 Advanced Feature Set**  
Leading-edge features like OTP memory enable you to design-in new functionality and enable greater manufacturing flexibility.
- 5 Flexibility to Reduce BOM Cost**  
With support for both parallel and serial MIPI interfaces, choose the best fit for your design. Serial MIPI allows for fewer pins, which reduces design time and cost.

## Applications

- Cellular phones
- PC cameras
- PDAs



## 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® technology for excellent image quality
- 1/5-inch optical format
- Enables 6.5mm<sup>2</sup> module size (compared to 8.5mm<sup>2</sup> module size for MT9D112)
- Individual module ID support through OTP memory
- Surface fit lens correction (LC) to compensate for lens/small pixel vignetting and corner color variations
- Many automatic and programmable functions, including exposure, white balance, black level offset correction, flicker detection and avoidance, color saturation control, defect identification and correction, aperture correction, lens shading correction zoom, windowing, and GPIO
- High video frame rates with moderate pixel clock frequency to minimize baseband reception interference
- 2 x 2 pixel binning to improve low-light image quality
- Support for external LED or xenon flash
- On-chip phase-lock loop (PLL) to minimize the number of system clocks
- Low-power modes to prolong battery life
- Fail-safe I/Os with programmable output slew rate
- Industry-standard two-wire serial interface
- 8-bit parallel or MIPI serial interfaces for image data

## Specifications

### Imaging Array

- Optical Format: 1/5-inch
- Active Array: 1600(H) x 1200(V) (4:3 ratio)
- Imaging Area: 2.8mm(H) x 2.1mm(V)

### Speed/Output

- Frame Rate: 15 fps at full resolution  
30 fps video mode (800H x 600V)
- Data Rate: 80 MB/s parallel  
640 Mb/s and 85 MHz (MIPI)
- Master Clock: PLL generated up to 85 MHz
- Data Format: Parallel or MIPI (serial)

### Sensitivity

- Pixel Size: 1.75µm x 1.75µm
- Dynamic Range: >60dB
- Responsivity: 0.3 V/lux-sec (550nm)

### Power

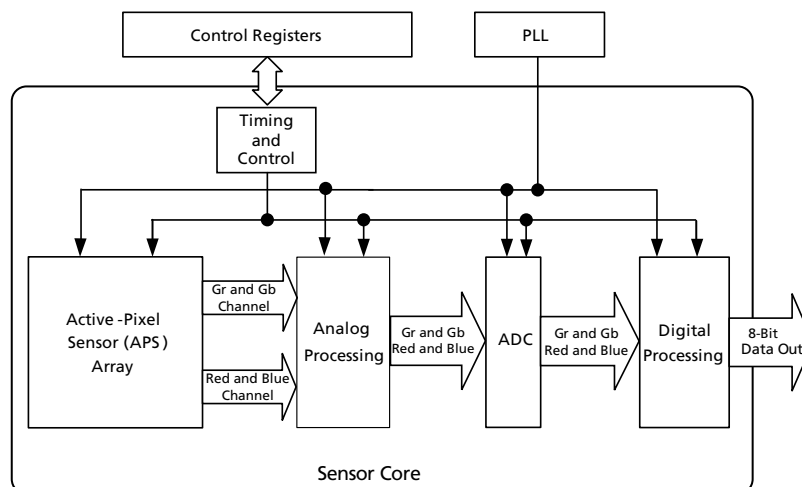
- Supply: Analog: 2.8V  
Digital: 1.8V  
I/O: 1.7–2.8V  
OTP: 8V
- Consumption: 370mW at 1.8V I/O

### Temperature Range

- Operating: –30°C to +70°C

Package: Die

## Sensor Core Block Diagram



[aptina.com](http://aptina.com)

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