



# 1.3-Megapixel, 1/5-Inch CMOS Image Sensor

Thinner, Sleeker Mobile Designs with Superior Image Quality

## Features

- SMIA compatible
- Superior low-light performance
- Simple two-wire serial interface
- Auto black level calibration
- High frame rate preview mode with arbitrary downsize scaling from maximum resolution
- Programmable controls: gain, frame size/rate, exposure, left-right and top-bottom image reversal, window size, and panning
- Low dark current
- On-chip phase-locked loop (PLL) oscillator
- Bayer pattern downsize scaler
- Support for external LED or xenon flash

## Applications

- Cellular phones
- Digital still cameras
- PC cameras
- PDAs

## Best-in-Class Quality; Tiny Footprint

Aptina adds another gem to its pioneering image sensor portfolio with the release of the MT9M019—a mobile CMOS sensor that delivers high-quality images from a miniscule package. Designed with ultra-compact, 2.2 $\mu$ m pixels, the MT9M019 has a footprint of just 1/5 inch, but captures full 1.3-megapixel (1280 x 1024) images. This critical design factor makes the sensor ideal for mobile and PC camera applications where neither product design nor imaging performance can be sacrificed.

The sensor features a simple two-wire serial interface

and is compatible with the standard mobile imaging architecture (SMIA), so integrating the MT9M019 with a mobile phone camera module couldn't be simpler.

The MT9M019 uses Aptina's industry-leading pixel technology to create stunning picture quality with excellent color, low noise, and high resolution. And the sensor's very low power consumption supports hours of uninterrupted video capture.

## Fast Frame Rates for Seamless Video

Webcams and camera phones demand fast frame rates for crisp, clear video. The MT9M019 captures 30 frames per second (fps) at full 1.3-megapixel resolution and 60 fps at VGA resolution (640 x 480), creating high-quality, seamless video. Another key feature for webcam and camera phone applications is high dynamic range, which ensures a high-quality picture or video across variable lighting conditions. The MT9M019's superior low-light sensitivity enables it to capture images in conditions as low as 1 lux—a capability that should exceed all application requirements.

## 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.

## Specifications

|                          |                            |                 |  |
|--------------------------|----------------------------|-----------------|--|
| • Optical Format:        | 1/5-inch                   | • Master Clock: | 64 MHz                                       |
| • Imaging Area:          | 2.83mm x 2.27mm            | • Frame Rate:   | 640 x 480 at 60 fps<br>1280 x 1024 at 30 fps |
| • Active Format (Array): | 1288H x 1032V              | • ADC:          | 10-bit, on-chip (61dB)                       |
| • Pixel Size:            | 2.2 $\mu$ m x 2.2 $\mu$ m  | • Package:      | Bare die                                     |
| • Color Filter Array:    | RGB Bayer pattern          |                 |  |
| • Shutter:               | Electronic rolling shutter |                 |  |
| • Maximum Data Rate:     | 64 Mp/s                    |                 |  |