640H x 480V, Ultra Low-Power, CMOS Digital Image Sensor

Features

- DigitalClarity® CMOS imaging technology
- Ultra low-power, low-cost CMOS image sensor
- VGA-quality image resolution (640H x 480V)
- 1/4-inch optical format
- Superior low-light performance
- Up to 30 frames per second (fps) progressive scan for high-quality video
- Image decimation to arbitrary size with smooth, continuous zoom and pan
- Programmable gain, frame rate, left-right and up-down image reversal, windowing, and panning
- Automatic black level offset correction
- On-chip, 10-bit analog-to-digital converter (ADC)
- Two-wire serial interface
- 10-bit parallel data output

The Smart Choice

With revolutionary CMOS active-pixel technology, Micron's ultra low-power MT9V011 image sensor combines superb VGA resolution with many advantages not available in standard charged-coupled devices (CCDs).

It outputs high-quality, progressive-scan images at up to 30 fps while extending battery life much longer than its CCD competitors, making it the smart choice for cellular phones, PDAs, dual-mode PC cameras, and many other consumer and industrial applications.

Board Space. The Finite Frontier.

The MT9V011's sophisticated camera functions, including windowing, row mirroring, left-right and up-down frame reversal, electronic rolling shutter (ERS), and column mirroring have been integrated directly onto the chip, reducing the number of additional parts normally needed by CCDs and minimizing the device's form factor and the board space needed by the application.

Its variable functions (also included directly on the chip) like programmable gain, frame rate, and exposure control, can be operated in their default modes or programmed by the end-user through a simple two-wire serial interface.

Faster Times-To-Market

Another powerful advantage of Micron's CMOS technology is how fast and easy it is to implement in cameras. Designers are not only able to devise smaller, higher-performance applications that consume less power, but are able to get them on store shelves faster than those who insist on using CCDs.

Applications

- Cellular phones
- PDAs
- PC cameras
- Other battery-powered products

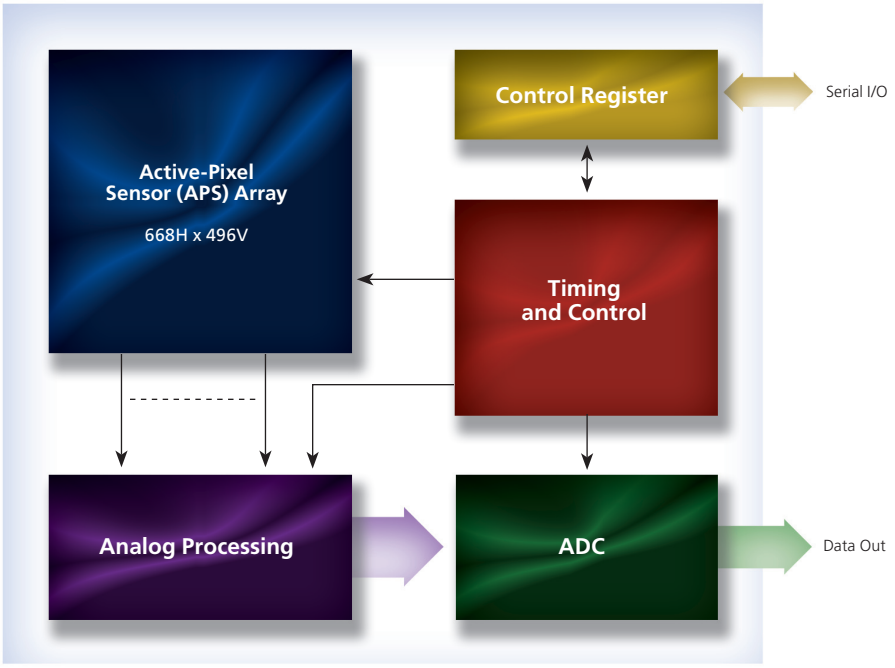
Get the Complete Picture

For more information or to order the MT9V011, call your Micron® Imaging representative or visit Micron's Web site at ***www.micron.com/imaging***.

Specifications

- **Pixel Size:** 5.6µm x 5.6µm
- **Array Format (active):** 640H x 480V
- **Imaging Area:** 3.584mm x 2.688mm
- **Color Filter Array:** RGB Bayer color filters
- **Optical Format:** 1/4 inch (4:3)
- **Frame Rate:** 30 fps @ 640H x 480V, ≤60 fps @ 352H x 288V, ≤90 fps @ 320H x 240V
- **Scan Mode:** Progressive
- **Shutter:** Electronic rolling shutter (ERS)
- **Window Size:** Programmable to VGA, QVGA, CIF, and QCIF
- **Programmable Controls:** Gain, frame rate, ADC reference, left-right and up-down image reversal
- **ADC:** 10-bit, on-chip
- **Data Rate:** 13.5 megapixels per second (master clock, 27 MHz)
- **Responsivity:** 1.9 V/lux-sec (550nm)
- **Signal-to-Noise Ratio:** 45dB (MAX)
- **Dynamic Range:** 60dB
- **Maximum Analog Gain:** 16
- **Supply Voltage:** 2.8V ±0.25V
- **Power Consumption:** 70mW (@ 30 fps)
- **Operating Temp. Range:** -20˚C to +60˚C
- **Package:** 28-pin LLCC or Die

Block Diagram



www.micron.com

Products are warranted only to meet Micron's production data sheet specifications. Products and specifications are subject to change without notice.