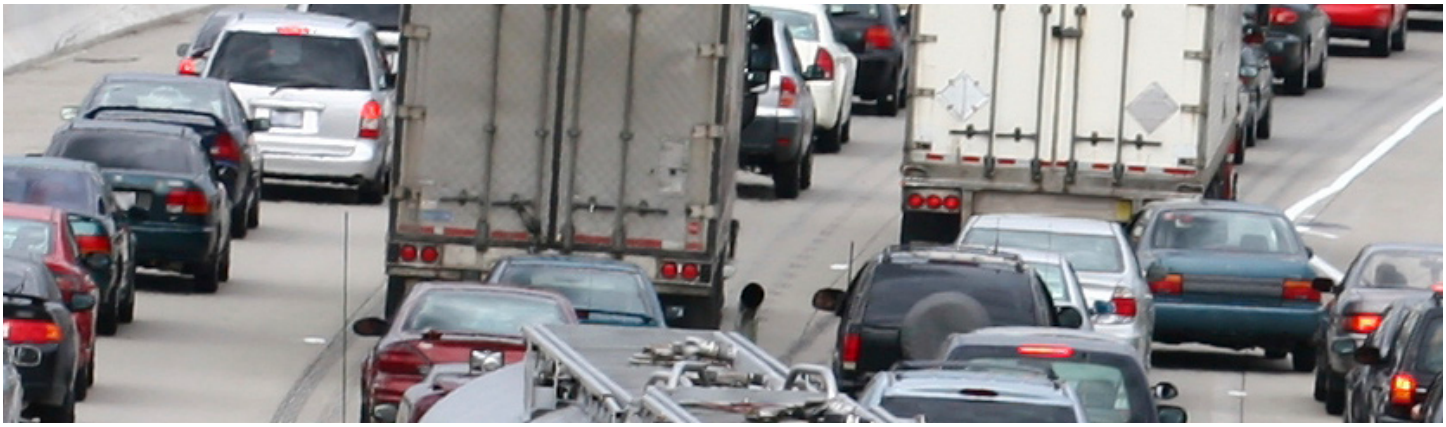


1/3-Inch, Wide VGA CMOS Image Sensor

Equip Your Security Camera to Capture Details in High-Contrast Scenes or Low-Light Conditions, at High or Low Temperatures

Features

- Wide VGA format, 752H x 480V
- 1/3-inch optical format
- 6µm x 6µm pixel size
- Monochrome or color: near-IR enhanced performance for use with non-visible NIR illumination
- Progressive or interlaced readout modes
- 2x2 and 4x4 binning at full 60 fps resolution
- Global shutter photodiode pixels; simultaneous integration and readout
- Simple two-wire serial interface
- On-chip, 10-bit analog to digital converter (ADC), column-parallel with option to operate in 12-bit to 10-bit companding mode
- Support for four unique serial control register IDs to control multiple imagers on the same bus

Wide Dynamic Range Imager

The focus for security cameras has shifted from low light sensitivity to wide dynamic range. The ability to adjust for the high contrast of both light and dark in the same frame is particularly important for cameras that operate in uncontrolled lighting conditions. Aptina's 1/3-inch wide-VGA CMOS image sensor with up to 100dB dynamic range enables cameras to capture scenes containing both low light levels (down to sub-0.1 lux) and direct sunlight for clear identification of scenes and stills on email or through remote viewing.

With its broad temperature range and enhanced near infrared sensititivity, the MT9V032 performs superbly under low-light conditions and in extremely low to very high temperature. The MT9V032 functions brilliantly at –30°C to +70°C, while its sister part, the MT9V022, operates within an even wider, –40°C to +85°C temperature range. Both devices can withstand storage temperatures up to +125°C.

Best-in-Class Performance

This wide-VGA CMOS active-pixel digital image sensor with global shutter also features Aptina's low-noise CMOS imaging technology that achieves CCD image quality (based on signal-to-noise ratio and low-light sensitivity) while maintaining the inherent size, cost, and integration advantages of CMOS.

The MT9V032 also incorporates sophisticated camera functions on-chip, such as 2x2 and 4x4 binning to improve sensitivity when operating at smaller resolutions, as well as windowing, and column and row mirroring. The device is programmable through a simple two-wire serial interface.

Aptina's MT9V032 CMOS image sensor provides the best of both worlds: best-in-class performance and low-cost video for home and commercial security system applications—especially those that use cameras in the uncontrolled lighting conditions of real-world environments.

Applications

- 802.11 wireless network cameras
- Power line modem cameras
- IP cameras
- uPNP AVs
- WiFi, UWB cameras
- Small office monitoring
- Traffic camera

The Right Manufacturer for Designers Who Expect More

With Aptina, you get design expertise plus the advantages that come with in-house fabrication. Because

Aptina™ IMAGING

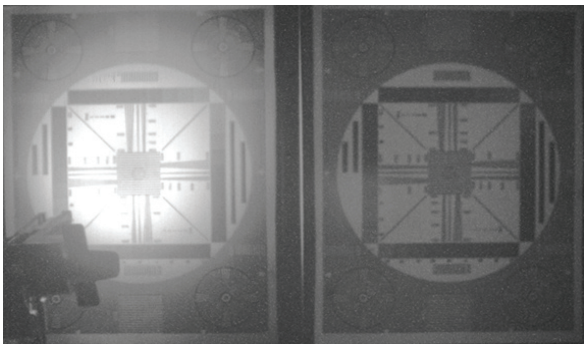
we control the parts we manufacture, we can be that much more responsive to our customers' needs. And because we have manufacturing, design, and sales and marketing facilities throughout the world, we're able to better serve you wherever you do business. To find out more about how Aptina's MT9V032 can streamline your designs and improve your customers' security systems, call us at +1 208-368-3900 or visit us on the Web at www.aptina.com

Specifications

Pixel Size:	6µm x 6µm
Array Format (active):	752H x 480V
Imaging Area:	4.51mm x 2.88mm
Color Filter Array:	Monochrome or RGB Bayer color filters
Optical Format:	1/3-inch
Frame Rate:	60 fps @ 750H x 480V; higher frame rates at lower resolutions
Dynamic Range:	55–100dB
Shutter:	Simultaneous integrate and readout global shutter
Data Format:	Parallel/LVDS (serial), selectable, 10 to 12 bits
Window Size:	Programmable to any size (e.g., QVGA, CIF, QCIF, etc.)
Scan Mode:	Progressive or interlaced
Automatic and Programmable Functions:	Regionally weighted exposure, black level offset correction, horizontal blanking, vertical blanking, lighting control, left-right and top-bottom image reversal, windowing, regional gain, image decimation
ADC:	10-, 12-bit selectable
Data Rate:	26.6 megapixels per second (master clock, 26 MHz)
Responsivity:	4.8 V/lux-sec (550nm)
Minimum Detectable Light:	sub-0.1 lux (mono), 5 lux (color)
Lag:	0.5%, 0%–100% of full well
Dark Current:	<10% of saturation signal at +85°C
Spectral Range:	450–1,050nm
Quantum Efficiency:	>35% (@ 850nm)
Conversion Gain:	30 uV/e-
Pixel Read Noise:	<25e-
Supply Voltage:	3.0–3.6V (3.3V nominal)
Power Consumption:	<320mW (@ 60 fps), <120µW standby
Operating Temp. Range:	–30°C to +70°C (standard) –40°C to +85°C (automotive)
Storage Temp. Range:	–55°C to +125°C
Package:	48-pin CLCC, die

Single-Frame Capture for Two Resolution Targets at Two Different Light Levels

30,000 lux 2 lux



aptina.com

Aptina™ IMAGING