5-Megapixel 1/2.5-Inch CMOS Image Sensor Die

5-Megapixel, 1/2.5-Inch CMOS Digital Image Sensor

Features

- 15 frames per second (fps) at full resolution
- 1,080p at 30 fps with windowing
- 720p at 30 fps in binning mode
- MIPI- and CCP2-compliant, sub-low-voltage differentia signaling (sub-LVDS)
- Two-wire serial interface
- Low-power, progressive scan CMOS image sensor
- On-chip, 12-bit analog-to-digital converter (ADC)
- Viewfinder and snapshot modes
- Programmable gain and exposure control
- Global reset
- Binning for enhanced viewing experience
- Phase-locked loop (PLL) for versatile clock in scheme

Applications

- Cellular phones
- Digital still cameras
- HDTV video cameras

Overview

If you're ready to take your camera phone or digital still camera design to the next level, we have an image sensor that will help you do it. The MT9P011 squeezes a 5-megapixel resolution into a 1/2.5-inch optical format while enabling 15 fps at full resolution and 1,080 progressive scan at 30 fps in binning mode. Whether it's used to capture continuous video or single frames—even in extreme low-light conditions—an MT9P011equipped phone or digital still camera will deliver sharp, crystalclear images.

In addition to high-resolution image capture, this imager integrates an on-chip 10-bit parallel or serial (1-lane MIPI and CCP2-compliant) interface. Those features, together with all of the usual advantages CMOS image sensors provide—design simplicity, reduced chip count, low integration costs, and fast time to market—make the MT9P011 an ideal solution for ultrathin mobile applications.

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.

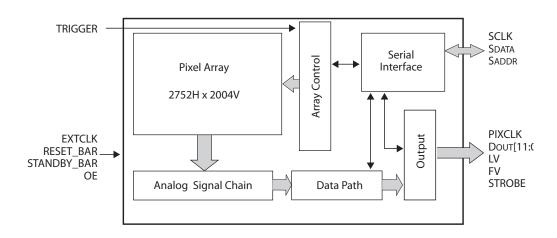


MT9P011

Specifications

• Pixel Size:	2.2μm x 2.2μm	Master Clock:	96 MHz
 Array Format (Active): 	2592H x 1944V	 Maximum Data Rate: 	96 megapixels per second
 Imaging Area: Color Filter Array: 	5.70mm x 4.28mm RGB Bayer color filters	 Programmable Controls: 	Gain, frame rate, exposure time, horizontal and vertical blanking, image mirroring
Optical Format:	1/2.5 inch	• ADC:	12-bit, on-chip
• Frame Rates:	15 fps at full resolution, 30 fps at 1,080p (1920H x 1080V)	• CRA:	22° and 27°
	by windowing, 30 fps at 720p (1280H x 720V) by binning	• Gain:	Analog: 1–8 (step size: 0.25) Digital: 1–16 (step size: 0.125)
	<i>,</i>	Dynamic Range:	70dB
 Scan Mode: 	Progressive	 Responsivity: 	1.4 V/lux-sec (550nm)
Shutter:	Electronic rolling shutter (ERS), global reset release (GRR)	 Maximum Signal- to-Noise Ratio: 	38dB
Window Size:	Programmable to any size	 Supply 	Analog: 2.6V–3.1V (2.8V nominal)
Exposure Time:	10µs–32s; bulb (external timer, snapshot only)	Voltage:	Digital: 1.7V–1.9V (1.8V nominal) I/O: 1.8V–3.1V
Operating Modes:	ERS continuous video, ERS snapshot, ERS bulb, GRR snapshot, GRR bulb	 Power Consumption: 	381mW at full resolution
• Input Clock	6–27 MHz	 Operating Temp: 	-30°C to +70°C
 Input Clock: 		Package:	Die, 48-pin iLCC

SOC Block Diagram



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