

1/3-Inch CMOS Digital Image Sensor

AR0130CS Datasheet, Rev. 12

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Features

- Superior low-light performance both in VGA mode and HD mode
- Excellent Near IR performance
- HD video (720p60)
- On-chip AE and statistics engine
- Auto black level calibration
- Context switching
- Progressive Scan
- Supports 2:1 scaling
- Internal master clock generated by on-chip phase locked loop (PLL) oscillator.
- Parallel output

Applications

- Gaming systems
- Video surveillance
- 720p60 video applications

General Description

ON Semiconductor's AR0130 is a 1/3-inch CMOS digital image sensor with an active-pixel array of 1280H x 960V. It captures images with a rolling-shutter readout. It includes sophisticated camera functions such as auto exposure control, windowing, and both video and single frame modes. It is programmable through a simple two-wire serial interface. The AR0130 produces extraordinarily clear, sharp digital pictures, and its ability to capture both continuous video and single frames makes it the perfect choice for a wide range of applications, including gaming systems, surveillance, and HD video.

Table 1: Key Parameters

Parameter		Typical Value
Optical format		1/3-inch (6 mm)
Active pixels		1280 x 960 = 1.2 Mp
Pixel size		3.75 μ m
Color filter array		Monochrome, RGB Bayer
Shutter type		Electronic rolling shutter
Input clock range		6 – 50 MHz
Output clock maximum		74.25 MHz
Output	Parallel	12-bit
Max. Frame rates	1.2 Mp (full FOV)	45 fps
	720pHD (reduced FOV)	60 fps
	VGA (full FOV)	45 fps
	VGA (reduced FOV)	60 fps
800 x 800 (reduced FOV)		60 fps
Responsivity at 550 nm (Mono)		6.5 V/lux-sec
Responsivity at 550 nm (RGB green)		5.6 V/lux-sec
SNR _{MAX}		44 dB
Dynamic range		82 dB
Supply voltage	I/O	1.8 or 2.8 V
	Digital	1.8 V
	Analog	2.8 V
Power consumption		270 mW (1280x720 60 fps)
Operating temperature		–30°C to +70°C (ambient) –30°C to +80°C (junction)
Package option		Bare die, iLCC, PLCC