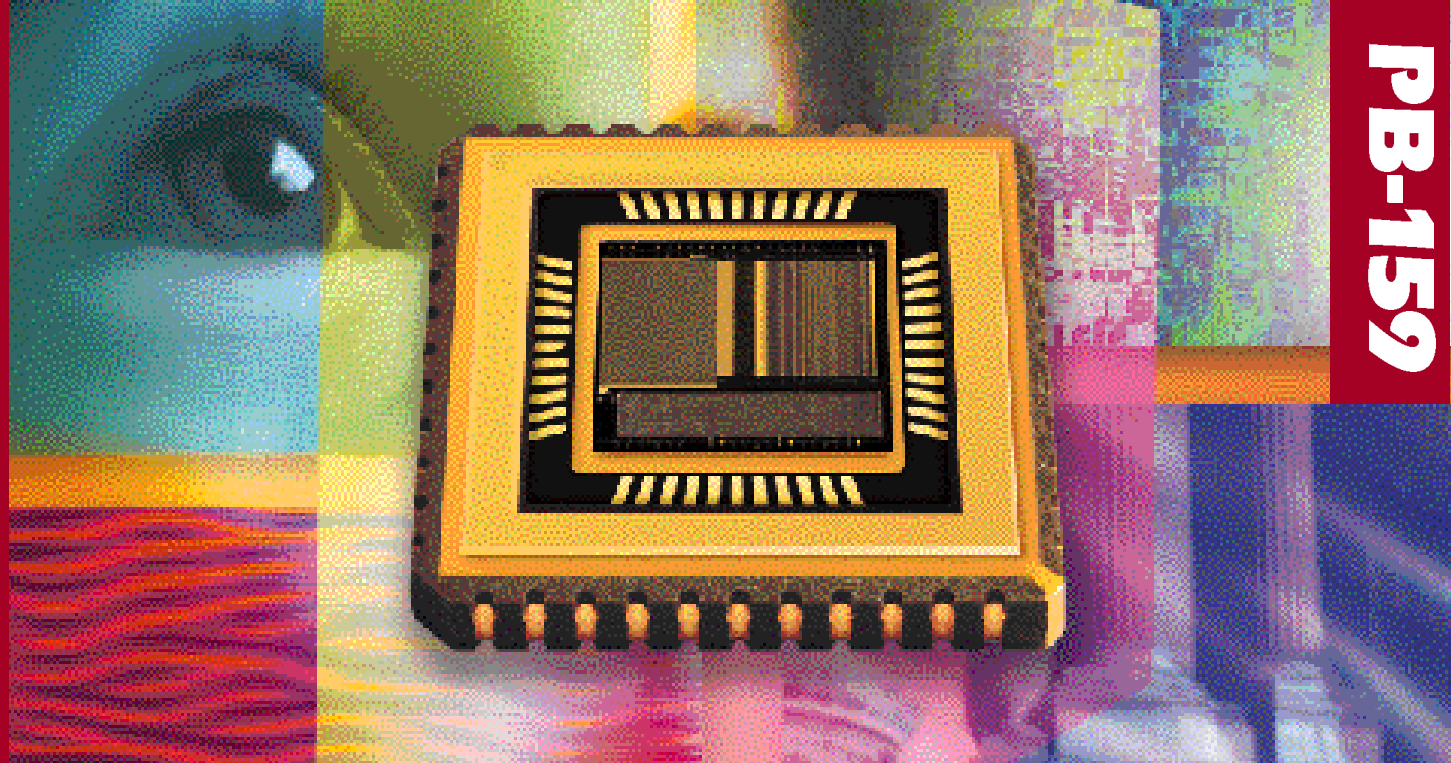
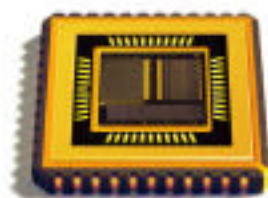




“Digital Camera On A Chip”



PHOTOBIT is the recognized world leader in high performance CMOS active pixel sensor (APS) electronic image capture technology.

The company has developed CMOS APS imaging devices for a wide variety of applications using technology invented by the principals while at NASA's Jet Propulsion Laboratory.

Leading the Active Pixel Revolution



Photobit

tel: (818) 248-4393

e-mail: info@photobit.com

web: www.photobit.com

- High quality Active Pixel Sensor (APS)
- Photobit Truebit Noise Cancellation™ (TNC)
- All camera functions are on-chip
- Extremely low power usage
- 8 bit digital video output
- Fully programmable (I²C interface)
- Color or monochrome

PB-159

THE PHOTOBIT PB-159 is a CMOS APS imaging chip with extensive on-chip functionality, a simple digital interface, and extremely low power consumption. This image sensor is ideal for color or monochrome digital video imaging applications seeking high performance and complete camera-on-a-chip functionality.

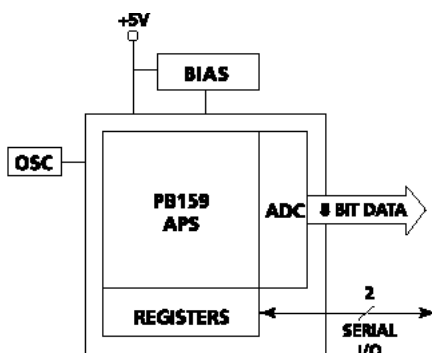
The image format is 512 columns by 384 rows with 7.9 micron square pixels. The PB-159 may be operated in a default mode, or in a fully programmable mode where frame size, exposure and other parameters are specified by the user through a simple serial interface.

The PB-159 uses on-chip analog-to-digital converter (ADC) technology and outputs a parallel digital byte per pixel. Frame and line valid signals are available on dedicated pins and are also encoded in the output data stream. The PB-159 is designed to interface with standard video encoders, image compression devices, and scan converters.

Features

At power up, the default state provides full frame (512x384 pixels) digital video at 30 frames per second with auto exposure enabled. Users may easily reprogram or override the auto exposure feature, as well as place the sensor in a low-power standby mode.

An I²C serial interface enables programming of the PB-159 control registers and settings, allowing custom applications to be easily created.



Device interface and operation is simple, requiring only a master clock, a power supply and DC bias signals, and a two wire serial interface.

The sensor outputs synchronization and data signals which easily interface with digital systems. Biases may be derived from the sensor power supply with simple voltage dividers.

Specifications

Array Format (4:3) 512Hx384V (196,608 pixels)

Pixel Size 7.9 μm x 7.9 μm

Optical Format 1/4 inch

Frame Rate 0 - 39 frames/sec

Data Rate (max) 14.3 Mbyte/sec

Power 50mW

Sensitivity 1 lux

Internal Dynamic Range 75dB (Intra-Scene)

Supply Voltage 5V

Supply Current 10mA (nominal)

Op. Temp. Range 0°C - 50°C

Output 8 bit color digital video (SRGB)

Shutter Electronic Rolling Snap (ERS)

CDS On chip

ADC On chip 8 bit column parallel

Auto Exposure On chip with manual user override

Package 44 pin LCC (type 2)

Timing and Control On-chip controller

Programmable Controls A rich set of user registers includes:

- Window size and location
- Exposure parameters
- Auto exposure parameters
- ADC reference
- On command ADC calibration
- ADC test mode
- Frame rate
- Readable chip registers

Leading the Active Pixel Revolution



Photobit

tel: (818) 248-4393

e-mail: info@photobit.com

web: www.photobit.com

PHOTOBIT is the recognized world leader in high performance CMOS active pixel sensor (APS) electronic image capture technology. Photobit also provides custom image sensor design services to meet a wide variety of imaging challenges with innovative, high performance solutions for the global marketplace.