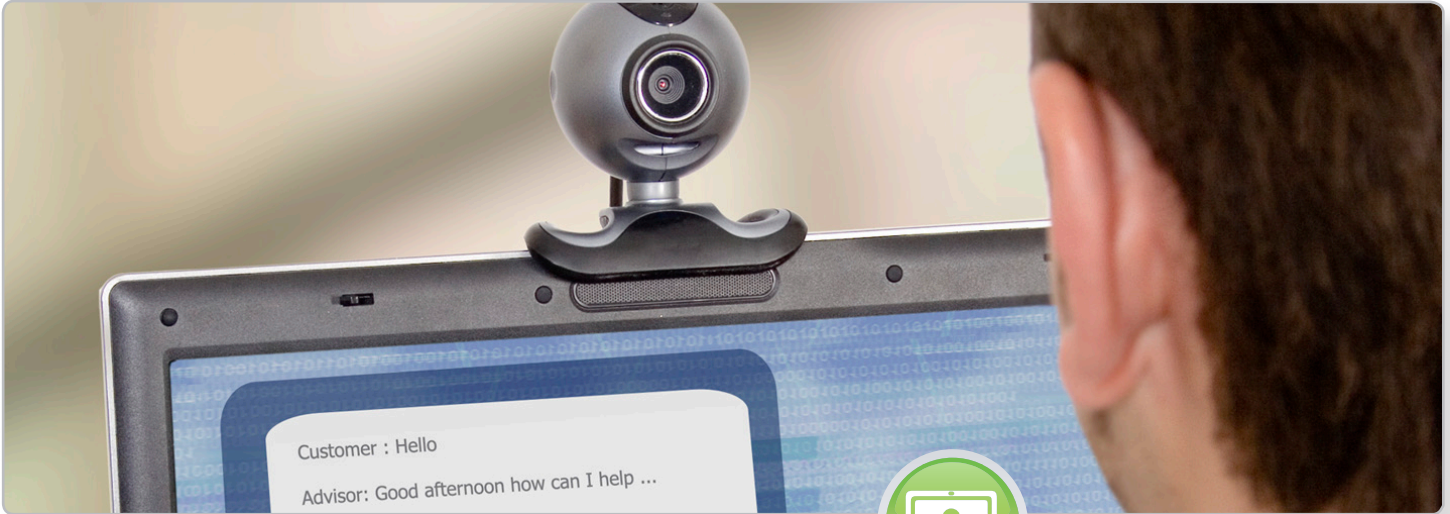# MT9V117

VGA
1/6-Inch
SOC Image Sensor
Die

High-End Performance, All-In-One Image Sensor Solution

1 Dynamic Response Pixel Technology

Offers superior image quality at both low light and high light conditions.

2 Weighted Auto Exposure

Programmable auto exposure enables optimized image processing in challenging indoor conditions.

3 Hue Rotation

Provides on-chip control of hue and color preferences.

4 High Speed

VGA 60 fps and up to 120 fps at lower resolutions enable advanced post-image processing and enhance various gaming applications.

5 Small Module Fit

Ideal for <3.5mm notebook camera module designs.

Applications

- PC and notebook cameras
- Desktop cameras
- Game consoles
- Consumer video communication
- Security cameras

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.

Aptina™

IMAGING

MT9V117

Features

- High-speed, ultra-high performance VGA system on a chip (SOC) CMOS sensor
- On-die image flow processor performs sophisticated processing, such as color recovery and correction, sharpening, and gamma and lens shading correction
- Automatic exposure, white balance and black level compensation, color saturation and aperture correction
- Independent AE and AWB control; average Y and weighted auto exposure
- Indoor AE mode to avoid flicker
- On-chip global hue control feature
- Built-in scaler to arbitrary size with continuous zoom and pan
- Image flip and mirror
- Programmable fade to black
- Adaptive noise reduction
- Fewer than 300ms boot-to-stream time

Specifications

Imaging Array
- Optical Format: 1/6-inch
- Active Array: 640(H) x 480(V)
- Imaging Area: 2.304mm(H) x 1.728mm(V)

Speed/Output
- Frame Rate: 60 fps @ full resolution
- Data Rate: 27 Mb/s (parallel)
- Master Clock: 54 MHz
- Digital Data Format: Raw Bayer, 8- and 10-bit, ITU-R BT656, YUV, 565RBG, 555RGB, and 444RGB

Sensitivity
- Pixel Size: 3.6μm x 3.6μm
- Pixel Dynamic Range: 81dB
- Responsivity: 4.2 V/lux-sec (550nm)

Power
- Supply: I/O: 1.7–1.95V or 2.5–3.1V
           Core: 1.8V
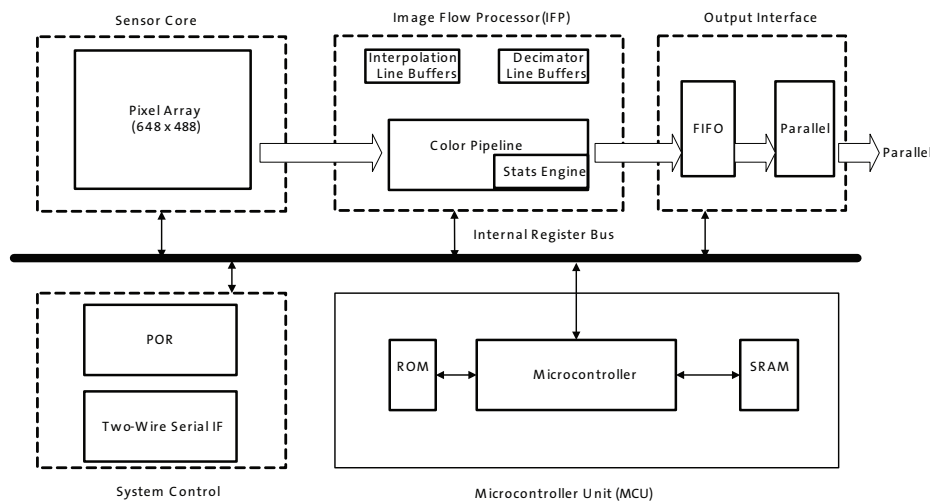   Analog: 2.8V
- Consumption: 129mW

Interface: Parallel

Temperature Range
- Operating: −30˚C to +70˚C
- Functional: −30˚C to +70˚C

Package: Die

Block Diagram

Sensor Core

Image Flow Processor(IFP)

Output Interface

Interpolation Line Buffers

Decimator Line Buffers

Pixel Array (648 x 488)

Color Pipeline

Stats Engine

FIFO

Parallel

Parallel

Internal Register Bus

POR

Two-Wire Serial IF

System Control

ROM

Microcontroller

SRAM

Microcontroller Unit (MCU)

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