Product Brief

ICM105T

VGA CMOS Image Sensor

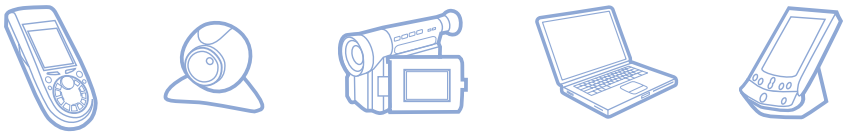
Key Benefits

- **High sensitivity VGA image**
  - 640x480 format
  - Supports 1/4" lens
  - Automatic optical black compensation
  - Dead pixel removal
  - Correlated double sampling
- **Low BOM cost**
  - On-chip 9-bit ADCs
  - SIF input interface
  - Operates at 2.8 V or 3.3 V (Analog)
- **Low power consumption**
  - 25 mA (@ 30 fps, 24 MHz)
  - 14 mA (@ 15 fps, 12 MHz)
- **Flexible features**
  - Electronic exposure control ADCs
  - Video and digital still camera modes
  - Horizontal and vertical images

Easily Integrated VGA CMOS Sensor

The ICM105T gives handset and mobile consumer electronics makers a decided cost advantage in integrating small form-factor digital imaging functionality. The ICM105T captures quality VGA images with high sensitivity and lower power consumption. The high level of integration can speed up design times and lower the total bill of materials to implement digital imaging functionality in cellphones and a wide range of other electronic products.

Application



Sensor Overview

The ICM105T is a single-chip digital color-imaging device incorporating a 640x480 sensor array. The ICM105T delivers from 1 to 30 frames per second in a progressive manner. Correlated double sampling is performed by the internal ADC and timing circuitry. Gain for raw data can be adjusted separately for each Bayer pattern pixel. The 8-bit raw data output can be fed to other DSP, color processing, or compression chips.

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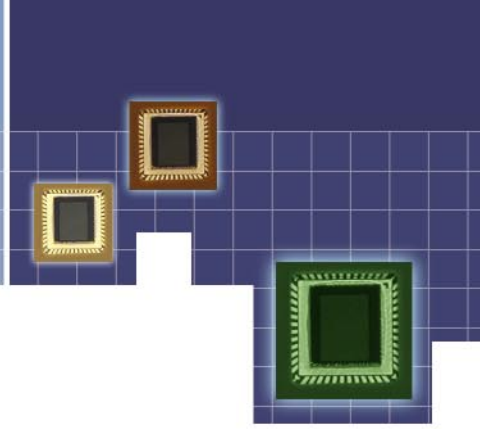
The Leader in CMOS Image Sensors



ICM105T

Preliminary Specifications

Number of Pixels:	640x480, VGA
Number of Physical Pixels:	318,500; (650x490)
Frame Rate:	30/20/15/12/10/6/5/4/3/2/1 fps
Sub-sampling:	quarter (1/4) and quarter-quarter (1/16) VGA resolutions
Optical size:	1/4-inch
Pixel Size:	4.9 µm x 4.9 µm
Sensor Area:	3.14 mm x 2.35 mm
Main Clock Frequency:	24 MHz
Exposure Time:	64 µs (@ 30 fps, 1 line, 24 MHz) ~ 126 s (@ 1 fps, 65,535 lines, 24 MHz)
Sensitivity:	0.7V/lux-sec (555 nm) (sensitive to infrared illumination sources)
Dynamic Range:	48 dB (digital); 55 dB (analog)
RGB Gain:	register setting range from 1/256 to 64 for individual Bayer pattern pixels
Power Supply:	2.8 V or 3.3 V (Analog) and 2.5 V (Digital)
Power Requirement:	25 mA (@ 30 fps, 24 MHz), 14 mA (@ 15 fps, 12 MHz)
Availability:	Raw Wafer, PLCC, CSP

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