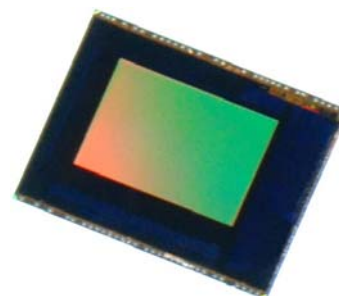


CMOS image sensor

2Megapixel 1.75μm

T4K28

1/5 inch 2Mpixels 1.75μm CMOS image sensor with ISP



The Toshiba T4K28 is a color sensor chip which includes area color image sensor embedded with image signal processor (ISP).

In the sensor area 1200 vertical and 1600 horizontal signal pixels, and the image size meets with 1/5 inch optical Format. Use of the CMOS process enables low power consumption operations. It also provides excellent color reproduction through its primary color filter, and embedded image signal processor without CPU enables small and simple camera system. So it is fit to use as an image input device for phone cameras.

■ Features

Applications

- ▶ Mobile phones and Smart phones

Features

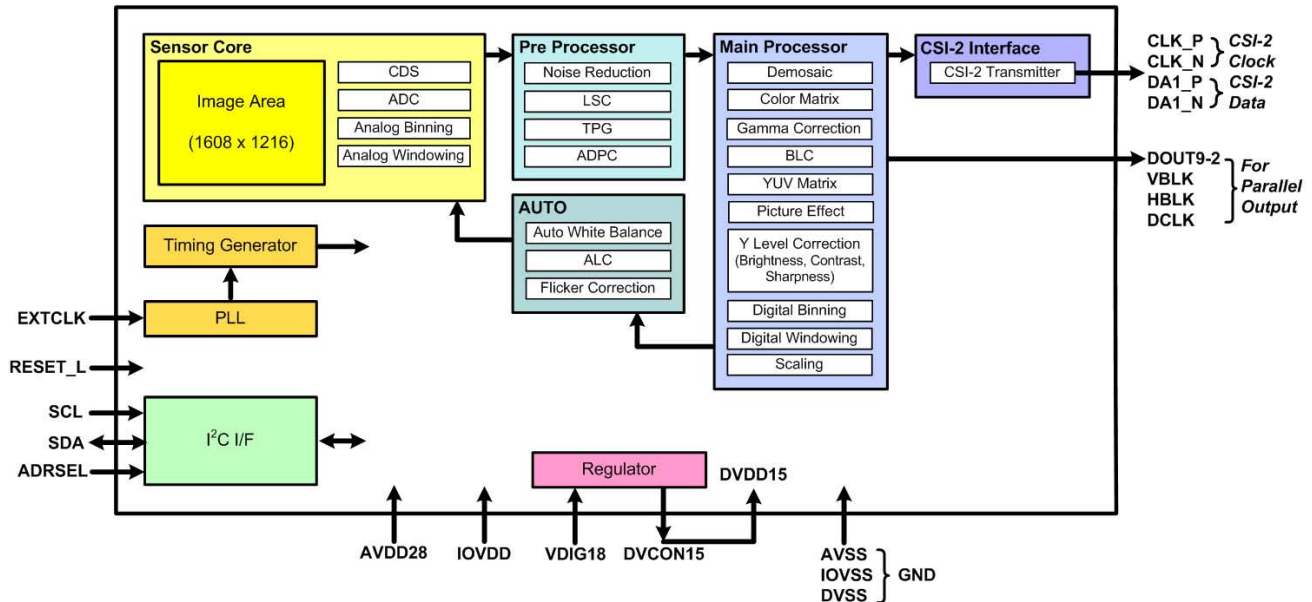
- ▶ 1/5" 2M resolution (1.75μm)
- ▶ SoC
- ▶ Progressive scan
- ▶ I²C interface
- ▶ CSI-2 1lane
- ▶ 8bits parallel output
- ▶ Binning:
Vertical 1/2
- ▶ Built-in phase lock loop (PLL)
- ▶ Window of interest (windowing to any arbitrary size fixed center)
- ▶ Image sizer (programmable decimation for image down sizing)
- ▶ Digital zoom
- ▶ Picture flip (horizontal flip and vertical flip)

- ▶ Picture effects (monochrome, negative, sepia, antique, sketch, emboss)
- ▶ Auto luminance control (= auto exposure)
- ▶ Auto white balance
- ▶ Auto defect pixel correction
- ▶ Auto flicker detection and correction
- ▶ Gamma correction (programmable gamma table) and dynamic gamma correction
- ▶ Lens shading correction
- ▶ Noise reduction
- ▶ Edge enhancement
- ▶ Color manager
- ▶ Standby mode, Power down mode for low power consumption
- ▶ Built-in regulator (1.8V to 1.5V)

Specifications

- ▶ Optical format: 1/5"
- ▶ Pixel size: 1.75μm × 1.75μm
- ▶ Output pixels: 1600(H) × 1200(V) (1.92Megapixel)
- ▶ Data formats: YUV422
- ▶ Frame rate:
15fps @full resolution
30fps @720p
60fps @VGA
- ▶ Power supply:
Analog=2.6 to 3.0V
Digital=1.7 to 1.9V
I/O=1.7 to 3.0V
- ▶ Operating temperature:
-20 to +60°C
- ▶ Storage temperature:
-40 to +85°C

System Block Diagram



» For further information about Toshiba Sensors, please visit
<http://www.semicon.toshiba.co.jp/eng/product/sensor/index.html>

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