Product Overview

PYTHON300: CMOS Image Sensor, 0.3 MP (VGA), Global Shutter

For complete documentation, see the data sheet.

The PYTHON 300 is a 1/4 inch VGA CMOS image sensor with a pixel array of 640 by 480 pixels.

The high sensitivity 4.8 μm x 4.8 μm pixels support low noise "pipelined" and "triggered" global shutter readout modes. Furthermore the correlated double sampling (CDS) support in global shutter mode results in reduced noise and increased dynamic range.

The sensor has on-chip programmable gain amplifiers and 10-bit A/D converters. The integration time and gain parameters can be reconfigured without any visible image artifact. Optionally the on-chip automatic exposure control loop (AEC) controls these parameters dynamically. The image's black level is either calibrated automatically or can be adjusted by adding a user programmable offset.

A high level of programmability using a four wire serial peripheral interface enables the user to read out specific regions of interest. Up to 8 regions can be programmed, achieving even higher frame rates. The image data interface consists of four LVDS lanes, facilitating frame rates up to 815 frames per second in Zero ROT mode. Each channel runs at 720 Mbps. A separate synchronization channel containing payload information is provided to facilitate the image reconstruction at the receiving end.

The PYTHON 300 is packaged in a 48-pin LCC package and is available in monochrome, color, and enhanced NIR versions both with and without protective tape.

Features

- IP-CDS global shutter technology
- True HW scalable family concept
- High configurability
- Fast adaptability
- Multiple windowing
- High Dynamic Range
- Higher frame rates

Benefits

- Enables global shutter imaging with single digit noise performance
- Easily adopt multiple resolutions (5 resolutions with single PCB)
- High flexibility to optimize sensor for customer application
- Fast switching between operating modes
- Speed increase from windowing in x- and y- direction
- Retain image detail in high-contrast scenes
- Faster image capturing capabilities

Applications

- Image Capture

End Products

- Machine Vision camera
- Industrial cameras and systems
- Medical Imaging systems
- Inspection systems (food, bottles, recycling labels)
- Motion Monitoring camera

Part Electrical Specifications

Product	Pricing ($/Unit)	Compliance	Status	Type	Megapixels	Frame Rate (fps)	Optical Format	Shutter Type	Pixel Size (µm)	Output Interface	Color	Package Type
NOIP1FN0300A-QTI		Pb-free / Halide free / non AEC-Q and PPAP	Active	CMOS	0.3	815	1/4 inch	Pipelined and Triggered Global	4.8 x 4.8	LVDS	NIR	LCC-48
NOIP1SE0300A-QTI		Pb-free / Halide free / non AEC-Q and PPAP	Active	CMOS	0.3	815	1/4 inch	Pipelined and Triggered Global	4.8 x 4.8	LVDS	Bayer Color	LCC-48
NOIP1SN0300A-QTI		Pb-free / Halide free / non AEC-Q and PPAP	Active	CMOS	0.3	815	1/4 inch	Pipelined and Triggered Global	4.8 x 4.8	LVDS	Mono	LCC-48

For more information please contact your local sales support at www.onsemi.com.

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