



256 linear image sensor with analog output

Advance information DELTA-LIS256AO

Features

- Number of active pixels: 256
- Pixel height: 150 μm
- Pixel pitch: 12 μm (2100 DPI)
- SPI configurable register set-up
- Visible and near IR sensitive photodiodes
- Electrical global shutter or rolling shutter functionality
- Up to 200 frames/s in read out
- Local V_t and temperature difference cancellation
- Integrating L-V conversion and sample hold functionality
- 3.3 V single supply operation (functionality down to 2 V)
- 50 mV to 3 V sample and hold analog output
- Very low power standby mode ($< 1 \mu\text{A}$)
- Integration time can be controlled by ReadOut DutyCycle
- Integration time can be controlled by external preset
- Analog output amplifier for driving capacitive loads
- Simple control almost similar to TSL1402 (serial mode)

Description

The DELTA Microelectronics 256 Linear Image Sensor (DELTA-LIS256AO) is a pixel line array sensor chip with analog serial read out. The line array is configurable by a SPI interface and can be set in different modes e.g. power saving mode, rolling shutter mode and direct photodiode output mode (without correlated double sampling).

This IP has been proven in silicon in standard CMOS 0.18 μm process and can easily be ported to other standard digital process. Using a standard 0.18 μm process it is easy to add all kinds of digital and/or analog circuitry e.g. CPU, RAM, ROM, ADC, NFC communication etc.

The control of DELTA-LIS256AO is very similar to e.g. TSL1402. Only a ReadOut signal and a Clk are needed for full functionality.

Pin name	Type	Description
VddA	Power	Analog supply 3.3 V
Clk	Digital In	Main Clk for digital control block and all analogue timing
ReadOut	Digital In	Control of sample, exposure and read out timing
EndOfScan	Digital Out	Indicates that all photodiodes have been read out
Preset	Digital In	Preset all photodiodes, ready to exposure
Config	Digital In	0 : Normal mode 1 : Configuration mode
VssA	Power	Analog ground
Video	AnalogOut	Analog voltage representation of sampled photodiode current

Application areas

- Optical linear sensors
- CCD substitute
- Barcode reader
- Position detection
- Encoders
- Distance measurement (triangulation)
- Spectroscopy

For further information please contact us

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Architecture overview of Opto-ASIC with a 256 linear sensor array

