



## Product Overview

### VITA2000: CMOS Image Sensor, Global Shutter, 2.3 Megapixel

For complete documentation, see the data sheet

#### Product Description

The VITA 2000 is a 2/3 inch Widescreen Ultra eXtended Graphics Array (WUXGA) CMOS image sensor configurable in HD format (1920 x 1080) or 4:3 format (1600 X 1200). The high sensitivity 4.8  $\mu\text{m}$  x 4.8  $\mu\text{m}$  pixels support pipelined and triggered global shutter readout modes and can also be operated in a low noise rolling shutter mode. In rolling shutter mode, the sensor supports correlated double sampling readout, reducing noise and increasing the 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 of the V1-SN/SE part consists of four LVDS lanes, facilitating frame rates up to 92 frames per second. Each channel runs at 620 Mbps. A separate synchronization channel containing payload information is provided to facilitate the image reconstruction at the receive end. The V2-SN-SE part provides a parallel CMOS output interface at reduced frame rate.

The VITA 2000 is packaged in a 52-pin LCC package and is available in a monochrome and color version. Contact your local ON Semiconductor office for more information.

#### Features

- True family concept
- Multiple shutter modes
- High Configurability
- Fast adaptability
- Multiple windowing
- High dynamic range

#### Benefits

- Ease of adaption over multiple resolutions
- Global and rolling, in master or slave mode
- Easily tailored to application requirement
- Fast change between operating modes
- Speed increase from windowing in x and y direction
- Capturing high dynamic scenes with no loss to image quality

#### Applications

- Machine Vision
- Motion monitoring

#### End Products

- Security systems
- Intelligent traffic systems
- Medical imaging equipment

#### Part Electrical Specifications

Product	Compliance	Status	Type	Megapixels	Frame Rate (fps)	Optical Format	Shutter Type	Pixel Size ( $\mu\text{m}$ )	Output Interface	Color	Package Type
NOIV1SE2000A-QDC	Pb-free Halide free	Active	CMOS	2	92	2/3 inch	Pipelined Global, Rolling with CDS	4.8 x 4.8	LVDS	Color	LCC-52
NOIV1SN2000A-QDC	Pb-free Halide free	Active	CMOS	2	92	2/3 inch	Pipelined Global, Rolling with CDS	4.8 x 4.8	LVDS	Mono	LCC-52
NOIV2SE2000A-QDC	Pb-free Halide free	Active	CMOS	2	23	2/3 inch	Pipelined Global, Rolling with CDS	4.8 x 4.8	Parallel	Color	LCC-52
NOIV2SN2000A-QDC	Pb-free Halide free	Active	CMOS	2	23	2/3 inch	Pipelined Global, Rolling with CDS	4.8 x 4.8	Parallel	Mono	LCC-52

For more information please contact your local sales support at [www.onsemi.com](http://www.onsemi.com)

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