



## Product Overview

### VITA16K: CMOS Image Sensor, Global Shutter, 16 Megapixel

For complete documentation, see the data sheet

#### Product Description

The VITA 16K is a 4096 x 4096 CMOS image sensor delivering high resolution images at frame rates up to 120 frames per second. The high sensitivity 4.5  $\mu\text{m}$  x 4.5  $\mu\text{m}$  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 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 32 regions can be programmed, achieving even higher frame rates.

The image data interface consists of 32 LVDS lanes. Each channel runs at 680 Mbps. A separate synchronization channel containing payload information is provided to facilitate the image reconstruction at the receive end.

The VITA 16K is packaged in a ceramic 355 pin PGA package and is available in a monochrome and color version.

Features	Benefits
<ul style="list-style-type: none"> <li>• True family concept</li> <li>• Multiple shutter modes</li> <li>• High configurability</li> <li>• Fast adaptability</li> <li>• Multiple windowing</li> <li>• Higher frame rates</li> </ul>	<ul style="list-style-type: none"> <li>• Ease of adaption over multiple resolutions; Pin compatible to VITA12k and VITA25k</li> <li>• Global and rolling, in master and slave mode</li> <li>• Easily tailored to application requirement</li> <li>• Fast change between operating modes</li> <li>• Speed increase from windowing in x and y direction</li> <li>• Faster image capture capabilities with just 16 or 32 data channels</li> </ul>

Applications	End Products
<ul style="list-style-type: none"> <li>• Industrial vision</li> <li>• Motion analysis</li> <li>• Surveillance</li> <li>• Biomedical inspection</li> </ul>	<ul style="list-style-type: none"> <li>• High-end machine vision cameras and systems</li> <li>• High-end surveillance systems</li> <li>• Microscopy systems</li> </ul>

#### Part Electrical Specifications

Product	Compliance	Status	Type	Megapixels	Frame Rate (fps)	Optical Format	Shutter Type	Pixel Size ( $\mu\text{m}$ )	Color	Package Type
NOIV1SE016KA-GDI	Pb-free Halide free	NEW	CMOS	16	120	35 mm	Pipelined Global, Rolling with CDS	4.5 x 4.5	Color	CPGA-355
NOIV1SN016KA-GDI	Pb-free Halide free	NEW	CMOS	16	120	35 mm	Pipelined Global, Rolling with CDS	4.5 x 4.5	Mono	CPGA-355

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

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