



# OG05B1B

## 5-megapixel product brief



### New 2.2-micron BSI Global Shutter Image Sensor for Industrial Machine Vision Applications

The new OG05B1B Global Shutter (GS) sensor features the industry's smallest 2.2  $\mu\text{m}$  backside illuminated (BSI) pixel for high resolution in a compact design, replacing the larger 2.5  $\mu\text{m}$  frontside-illuminated (FSI) GS sensors traditionally used in machine vision cameras. This high-resolution, small-format GS sensor provides the highest shutter efficiency available on the market with the ability to capture high-speed moving objects clearly and accurately at high frame rates, ideal for barcode scanners, robotics, and intelligent transportation systems. It also features high sensitivity, low noise and enhanced NIR quantum efficiency (QE) for industry-leading low-light performance.

The new OG05B1B is a 5-megapixel (MP) resolution CMOS GS sensor in a 1/2.53-inch optical format (OF). It has a fast frame rate of 60 fps and high shutter efficiency of 106 dB.

The image sensor features OMNIVISION's Nyxel® near-infrared (NIR) technology, which boosts QE to 700-1050 nm, enabling the capture of brighter images from farther away; PureCel®Plus-S stacked-die architecture for best-in-class image sensor performance; and CSP package technology for the smallest possible solution.

The OG05B1B supports 4-lane MIPI & DVP.

Find out more at [www.ovt.com](http://www.ovt.com).



# OG05B1B

## Ordering Information

- OG05B1B-A89A-001A-Z (b&w, lead-free)  
89-pin CSP
- OG05B1B-A89A-00MA-Z (b&w, lead-free)  
89-pin CSP packed in tray with 3 mm protective film (tab top right)

## Applications

- machine vision cameras
- logistics applications
- industrial bar code scanning
- robotics

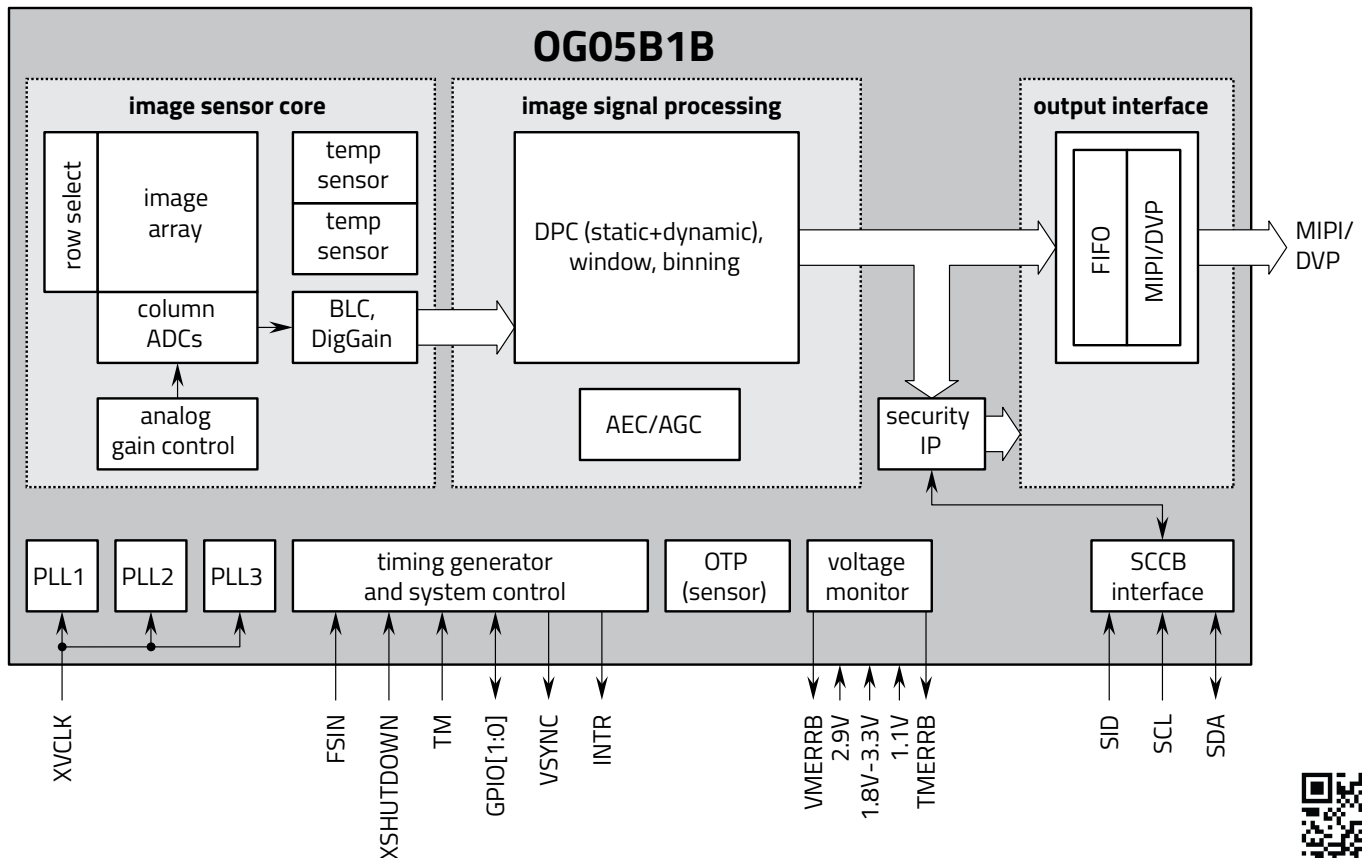
## Technical Specifications

- active array size:** 2592 x 1944
- maximum image transfer rate:**
  - 5MP (2592 x 1944): 60 fps
- power supply:**
  - analog: 2.8V
  - digital: 1.2V
  - I/O pads: 1.8V
- power requirements:**
  - active: 314 mW
  - XSHUTDOWN: 1 mW
- temperature range:**
  - operating: -30°C to +85°C junction temperature
- output interfaces:** up to 4-lane MIPI serial output and DVP parallel output
- lens size:** 1/2.53"
- lens chief ray angle:** 26° non-linear
- output formats:** 10-bit RAW
- pixel size:** 2.2 μm x 2.2 μm
- image area:** 5737.6 μm x 4312 μm

## Product Features

- support for image size:
  - 2592 x 1944 and any cropped size
- data format: RAW
- 2.2 μm x 2.2 μm pixel with PureCel®Plus-S, Global Shutter, and Nyxel® technologies
- image sensor processor functions:
  - defective pixel cancellation
  - automatic black level correction, etc.
- supports x-trigger, external frame synchronization capability
- high speed serial data transfer with MIPI CSI-2
- parallel 10-bit DVP output
- external frame synchronization capability
- SCCB for register programming
- embedded temperature sensor
- embedded supply voltage monitor
- one time programmable (OTP) memory
- supports ROI mode

## Functional Block Diagram



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4275 Burton Drive  
Santa Clara, CA 95054  
USA

Tel: + 1 408 567 3000  
Fax: + 1 408 567 3001  
www.ovt.com

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