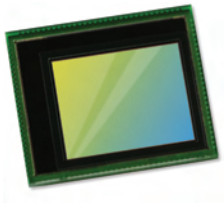


OG02B1B 2MP product brief

High-Resolution, Cost-Effective Global Shutter Image Sensors for Machine Vision Applications

lead free

available in a lead-free package

OmniVision's OG02B1B (monochrome) and OG02B10 (color) are global shutter image sensors designed to cost-effectively enable a wide range of consumer and industrial machine vision applications such as AR/VR headsets and accessories, industrial automation, robotics, agricultural drones and 3D modeling. These sensors provide designers with best-in-class resolution and the option for full-color imaging, and both have a 15 degree chief ray angle (CRA) to support wide field-of-view lens designs. This combination of color imaging and CRA is excellent for applications such as agricultural drones that must capture high-resolution color images for crop and field monitoring.

Available in a 1/2.9 inch optical format, the OG02B1B and OG02B10 capture 2 megapixel or 1600 x 1300 resolution images and video at 60 frames per second (fps) using advanced 3 x 3 micron OmniPixel®3-GS pixel technology. This global shutter technology eliminates motion artifacts and blurring, and dramatically improves low-light sensitivity. Additionally, both sensors' excellent near infrared (NIR) sensitivity at 850 nm and 940 nm helps reduce device power consumption to extend battery life.

Find out more at www.ovt.com.

OmniVision

OG02B1B

Applications

- Augmented and Virtual Reality
- Drones
- 3D Imaging
- Machine Vision
- Industrial Bar Code Scanning
- Industrial Automation

Ordering Information

- **OG02B1B-G04A-Z**
  (b&w, chip probing, 200 µm backgrinding, reconstructed wafer with good die)

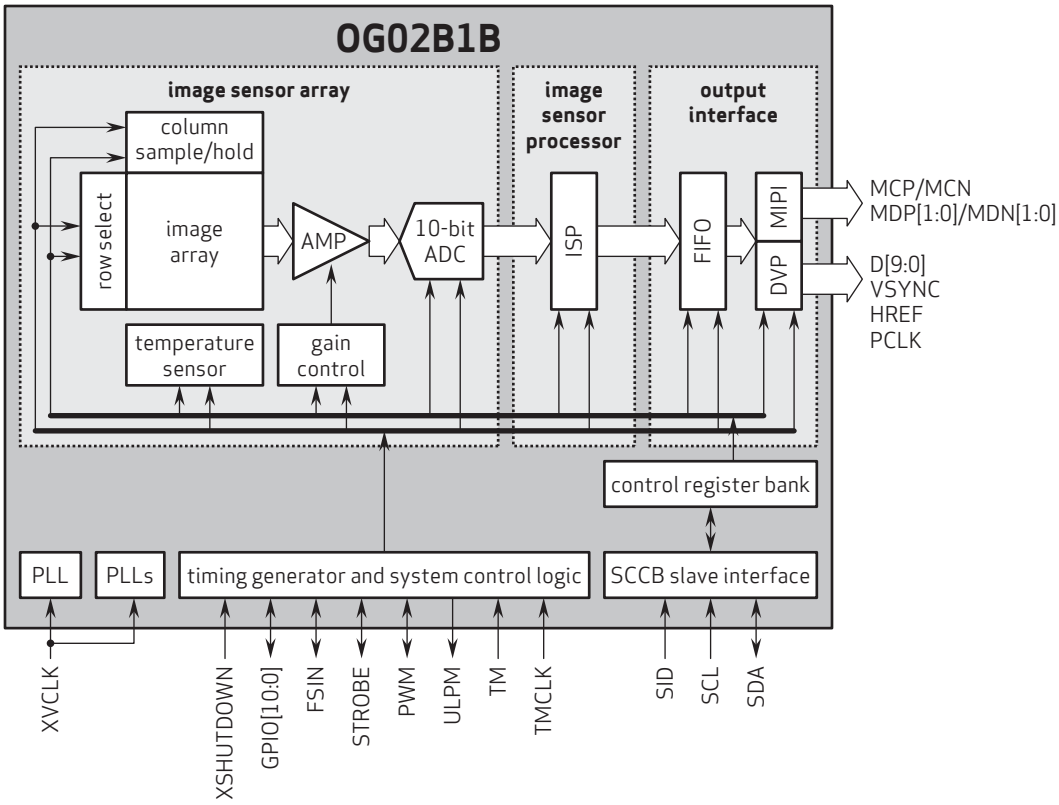
Product Features

- 3 µm x 3 µm pixel with OmniPixel®3-GS technology
- automatic black level calibration (ABLC)
- programmable controls for:
  - frame rate
  - mirror and flip
  - cropping
  - windowing
- support output formats: 8/10-bit RAW
- fast mode switching
- supports 2x2 monochrome binning
- two-lane MIPI serial output interface
- DVP parallel output interface
- supports horizontal and vertical 2:1 monochrome subsampling
- support for image sizes:
  - 1600 x 1300
  - 1280 x 720
  - 640 x 480
- embedded 128 bytes of one-time programmable (OTP) memory
- two on-chip phase lock loops (PLLs)
- LED PWM
- temperature sensor
- built-in strobe control

Product Specifications

- **active array size:** 1600 x 1300
- **power supply:**
  - **analog:** 2.8V (nominal)
  - **core:** 1.2V (nominal)
  - **I/O:** 1.8V (nominal)
- **temperature range:**
  - **operating:** -30°C to +85°C junction temperature
- **output interface:** 2-lane MIPI serial output and DVP parallel output
- **output formats:** 10-bit RAW
- **lens size:** 1/2.9"
- **input clock frequency:** 6 - 27 MHz
- **lens chief ray angle:** 15° linear
- **maximum image transfer rate:**
  - **1600 x 1300:** 60 fps
- **minimum exposure time:** 1 row period
- **maximum exposure time:** frame length - 12 row periods, where frame length is set by registers {0x380E, 0x380F}
- **pixel size:** 3 µm x 3 µm

Functional Block Diagram



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Version 1.0, September, 2018