



OGOTB

400 x 400 product brief



World's Smallest Global Shutter Image Sensor for AR/VR/MR and Metaverse

The OGOTB is a three-layer stacked BSI global shutter (GS) image sensor for eye and face tracking in AR/VR/MR and Metaverse consumer devices. It has a package size of just 1.64 mm x 1.64 mm and features a 2.2 μm pixel in a 1/14.46-inch optical format (OF). The 400 x 400 resolution CMOS image sensor offers ultra-low power consumption, less than 7.2 mW at 30 fps, ideal for some of the smallest and lightest battery-powered wearables, such as eye goggles and glasses.

The OGOTB GS image sensor features some of OMNIVISION's most advanced technology. It is built on OMNIVISION's PureCel®Plus-S stacked-die technology. Nyxel® technology enables the best quantum efficiency (QE) at the 940 nm NIR wavelength for sharp, accurate images of moving objects. High modulation transfer function (MTF) enables sharper

images with greater contrast and more detail, which is especially important for enhancing decision-making processes in machine vision applications.

The OGOTB supports a flexible interface, including MIPI with multi-drop, CPHY, SPI, etc.

Find out more at www.ovt.com.



- OGOTB1B-A25A-Z (b&w, lead-free)
16-pin CSP

Applications

- augmented and virtual reality
- gaming
- machine vision
- industrial automation
- drones
- biometric authentication
- 3D imaging
- industrial bar code scanning

Technical Specifications

- active array size:** 400 x 400
- maximum image transfer rate:**
 - 400 x 400: 240 fps
 - 200 x 200: 480 fps
- power supply:**
 - analog: 2.8V (nominal)
 - core: 1.1V (nominal)
- power requirements:**
 - active: 52 mW
 - XSHUTDN: 30 μ A
- lens size:** 1/14.46"
- temperature range:**
 - operating: -30°C to +85°C junction temperature
 - stable image: 0°C to +60°C junction temperature
- lens chief ray angle:** 30.84° non-linear
- output interfaces:** 1-lane MIPI / 2-lane SPI serial output
- output formats:** 8-bit/10-bit RAW
- pixel size:** 2.2 μ m x 2.2 μ m
- image area:** 915.2 μ m x 915.2 μ m

Product Features

- 2.2 μ m x 2.2 μ m pixel with PureCel®Plus-S, Global Shutter, and Nyxel® technologies
- automatic black level calibration (ABLCL)
- programmable controls for:
 - frame rate
 - mirror and flip
 - cropping
- support output formats: 8-bit/10-bit RAW
- fast mode switching
- supports horizontal and vertical 2:1 subsampling
- supports 2x2 binning
- 1-lane MIPI / 2-lane SPI serial output interface
- support for image sizes:
 - 400 x 400
 - 200 x 200
- embedded 16 bytes of one-time programmable (OTP) memory for customer use
- two on-chip phase lock loops (PLLs)
- built-in strobe control
- support for multi-sensor mode operation

Functional Block Diagram

