

OGOTC1B 400 x 400 product brief



World's Smallest, Lowest-Power Global Shutter Image Sensor for AR/VR/MR Tracking Cameras

The OGOTC1B BSI global shutter (GS) image sensor for eye and face tracking in AR/VR/MR consumer headsets and glasses features on-chip single exposure DCG™ technology for ghost-free HDR imaging. It consumes less than 40% of the power at 30 fps compared with the previous-generation sensor and is pin-to-pin compatible for easy upgrades.





With a package size of just 1.64 mm x 1.64 mm, the OGOTC1B is an ultra-small, low-power image sensor for optimizing primarily inward-facing tracking cameras. It features a 2.2 µm pixel built on PureCel®Plus-S stacked-die technology. Nyxel® technology enables the best QE at the 940 nm NIR wavelength for sharp, accurate images of moving objects and the sensor's high MTF enables sharper images with greater contrast and more detail.

The 400 x 400 resolution GS sensor supports a flexible interface, including MIPI with multi-drop and CPHY.

Find out more at www.ovt.com.



OGOTC1B

Applications

- eye/face tracking
- gesture tracking

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: 1.0V (nominal C-PHY), 1.1V (nominal D-PHY)
- power requirements: active: 37 mW
- XSHUTDN: 50 µA
- output interface: 1-lane MIPI D-PHY @ 1 Gbps / 1-trio C-PHY @ 1 Gsps

 temperature range:
 operating: -30°C to +85°C junction temperature

machine vision

- stable image: 0°C to +60°C junction temperature
- 8-bit/10-bit/12-bit/14-bit RAW
- lens size: 1/14 46'
- Iens chief ray angle: 30.84° non-linear
- pixel size: 2.2 μm x 2.2 μm

Ordering Information

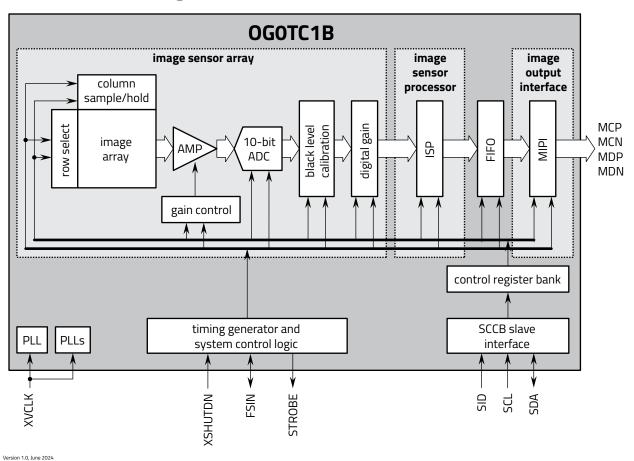
 OGOTC1B-A16A-001A-Z (b&w, lead-free) 16-pin CSP

Product Features

- 2.2 µm x 2.2 µm pixel with PureCel®Plus-S, Global Shutter, and Nyxel® technologies
- automatic black level calibration (ABLC)
- programmable controls for: frame rate
 - mirror and flip
- cropping
- Inear mode supports output formats: 8-bit/10-bit RAW
- DCG[™] mode supports output formats: 12-bit/14-bit RAW
- fast mode switching
- supports horizontal and vertical 2:1 subsampling
- supports 2x2 binning and skipping

- supports 4x4 skipping and 8x8 skipping
- 1-lane MIPI D-PHY / 1-trio C-PHY
- support for image sizes:
- 400 x 400 - 200 x 200
- 100 x 100
- 50 x 50
- embedded 22 bytes of one-time programmable (OTP) memory for customer use
- two on-chip phase lock loops (PLLs), including SSCG-PLL supporting MIPI interface
- built-in strobe control
- support for multi-sensor mode operation
- internal 1.8V LDO for GPIO, serial interface I/Os

Functional Block Diagram





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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- output formats:

- image area: 915.2 μm x 915.2 μm