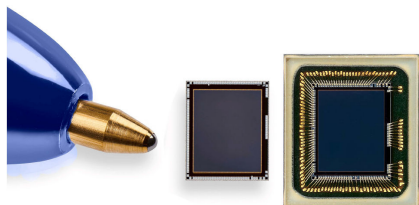


Compact and high-sensitivity 1.5 MP monochrome global shutter image sensors



Features

- **Resolution:** 1.53 MP (1124 x 1364)
- **Chroma:** Monochrome
- **Optical format:** 1/4" (4.61 mm)
- **State-of-the-art pixel technology:**
 - Pixel pitch: 2.61 μm
 - Shutter type: Global shutter
 - Technologies: GS (global shutter), BSI (backside illumination), CDTI (continuous digital time integration), and 3D stacking (three-dimensional stacking).
- **Embedded features:**
 - Image quality optimization: Autoexposure, defective pixel correction, binning, and more.
 - Data and frame rate optimization: Cropping, subsampling, and more.
 - Others: Context management, temperature sensor, and more.
- **Interfaces:**
 - Output: MIPI CSI-2 (1 or 2 lanes) with RAW8 and RAW10 output formats
 - Control: I²C
- **Comprehensive evaluation hardware:**
 - VD56G3 promodules ([CAM-56G3](#))
 - VD56G3 S-Board ([STEVAL-56G3MAI](#))
 - EVK Main ([STEVAL-EVK-U0I](#))
- **Compatible software tools:**
 - PC Evaluation software: [STSW-IMG501](#)
 - PC Software Development Kit (SDK): [STSW-IMG507_56G3](#)
 - Embedded platform drivers: [STSW-IMG502](#)

Order code	Description
VD56G3CCA/RW	Bare die as reconstructed wafer
VB56G3CAGK	OBGA sensor in tray
VB56G3CAGK/1	OBGA sensor in tape and reel

Description

The **VD56G3** and **VB56G3** are 1.5-megapixel monochrome CMOS image sensors that deliver exceptional imaging performance in a compact form factor. Built on STMicroelectronics' proprietary technologies, including BSI and full CDTI, they achieve superior QE (quantum efficiency), MTF (modulation transfer function), and angular response for sharp, crystal-clear image capture, even in challenging conditions. With outstanding performance in both visible and near infrared light (850 nm, 940 nm), these sensors are ideal for precision-driven and versatile applications. Their ultracompact footprint minimizes system size, featuring a small optical format of 4.6 mm (1/4") at full resolution, enabling the design of compact and ergonomic vision systems. With low-power consumption, they are ideal for battery-powered devices, while their robust design ensures reliable and consistent image quality across a wide range of temperatures.

Smart in-sensor features such as autoexposure, cropping, binning, and programmable sequences simplify development and optimize data throughput. Their MIPI CSI-2 interface (1 or 2 lanes) and I²C control ensures seamless connection to embedded processing platforms.

The sensors offer unmatched flexibility. The VD56G3 is available as a sensor die for ultracompact camera modules, while the VB56G3 comes in an OBGA package for direct PCB integration. They are also part of a sensor family that includes color (RGB) versions [VD66GY](#) and [VB66GY](#), and RGB-NIR versions [VD16GZ](#) and [VB16GZ](#) for even greater flexibility.

Supported by turnkey sensor boards, evaluation modules, and free drivers, the VD56G3 and VB56G3 accelerate development and empower engineers to build innovative, high-performance imaging solutions with ease and confidence.

Application

- Industrial, logistics, and smart retail
- Security, surveillance, and smart building
- Robotics and drones
- Home appliances
- AR/VR/XR
- Biometrics and authentication
- Medical

Revision history

Table 1. Document revision history

Date	Version	Changes
10-Jan-2020	1	Initial release
10-Feb-2020	2	Updated order code and corrected typo
11-Mar-2020	3	Updated framerate
11-Mar-2020	4	Updated description
30-Jan-2023	5	Updated "Features" for embedded optical flow, fps, and dynamic-pixel correction. Updated "Description"
23-Nov-2023	6	Updated document title Updated cover image Updated order code Updated Features Updated Description Updated Applications Added Technical specifications summary
27-Jun-2025	7	Added VB56G3 product. Updated <i>document title</i> . Updated <i>cover image</i> . Added two new order codes Updated <i>Features</i> . Updated <i>Description</i> . Updated <i>Applications</i> . Removed the table: <i>Technical specifications summary</i> .

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