

Advanced 1.5 Mpixel, backside illuminated Global Shutter, ultra compact sensor, with high QE, high MTF, excellent PLS, and full-features



Features

- Global shutter technology, ST proprietary single layer
- 3D stacked sensor 40 nm/65 nm
- 2.61 μm x 2.61 μm BSI pixel with full DTI (deep trench isolation)
- High-performance with excellent
 - QE (quantum efficiency)
 - MTF (modulation transfer function) up to near IR
 - Perfect PLS (shutter efficiency)
- Smallest sensor on market with 1.5 Mpixel resolution
 - Compact die size: 3.6 mm x 4.3 mm
 - 1124 pixels x 1364 pixels
 - Very small pixel array, 2.9 mm x 3.6 mm
 - Optical format $\frac{1}{4}$ inch
- Operating junction temperature: -30 °C to 85 °C
- Dual lane transmitter MIPI CSI-2 (copyright© 2005-2010 MIPI Alliance, Inc. Standard for Camera Serial Interface 2 (CSI-2) version 1.0) version 1.3, 1.5 Gbps per lane
- Fast mode+ I2C control interface
- Integrated temperature sensor
- Up to 100 fps (frames per second) at full resolution and 260 fps with VGA resolution
- Programmable sequences of 4-frame contexts, including frame parameters
- Automatic dark calibration
- Dynamic and map-based defective correction
- Embedded auto-exposure with 336 zone statistics
- 8 multiple function IO, dynamically programmable with frame contexts (GPIO, strobe pulse, pulse-width modulation, V sync)
- Up to 8 illumination control outputs synchronized with sensor integration periods and master/slave external frame start
- Mirror/flip readout
- Fully sequenceable with frame contexts
- Crop
- Binning (x2 and x4)
- Sub sampling (x2 and x4)

Order code	Description
VD56G3	Bare die

Application
<p>Engineered for high-performance computer vision applications, including AR/VR, personal and industrial robotics, drones, barcodes, biometrics and gestures, embedded vision or scene recognition.</p> <p>Typical use cases where high-performance near IR sensing is key. Also demanding computer vision on scene with movement requiring no shutter artifacts.</p>

Description

The VD56G3 is a global shutter image sensor optimized for near infrared scenes. The sensor captures up to 100 frames per second in a 1124 x 1364 resolution format. The pixel construction of this device minimises crosstalk.

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

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