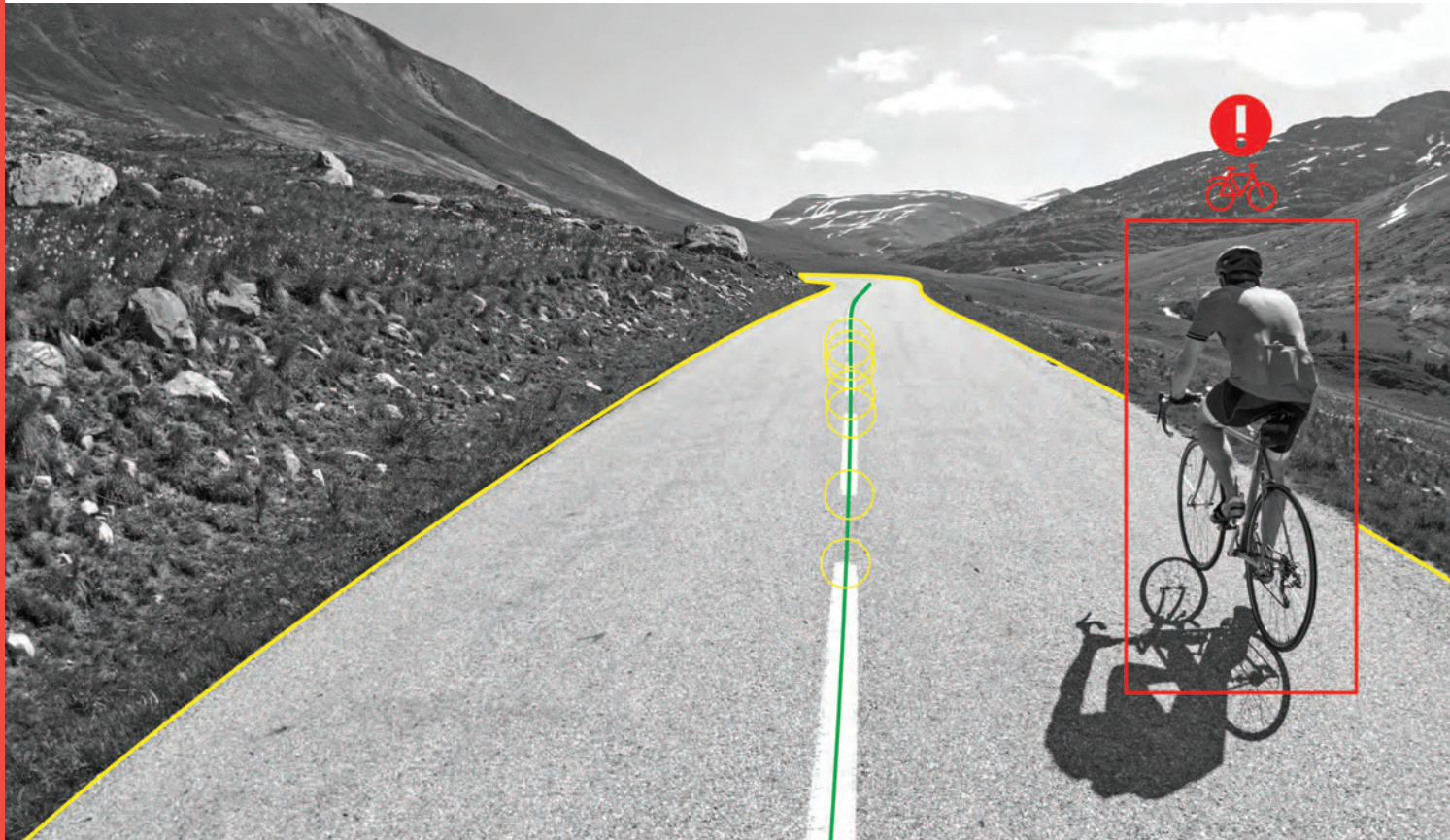


OV10652 HDR product brief



OmniBSI™ Split-Pixel Sensor with RCCC Color Filter for Advanced Driver Assistance Systems (ADAS) Solutions



available in
a lead-free
package

OmniVision's OV10652 is a 4.2-micron OmniBSI™ split-pixel image sensor with a RCCC color filter pattern that delivers high-quality images in a 2:1 aspect ratio. The sensor captures 1820 x 940 resolution video at 60 frames per second (fps) with up to 120 dB of dynamic range and best-in-class low-light sensitivity.

Using a RCCC color filter, the OV10652 is ideally suited for use in front-view advanced driver assistance systems (ADAS) including: pedestrian detection, lane departure warning, headlamp control, forward collision warning, and traffic sign detection.

The sensor is available in an AEC-Q100 Grade 2-qualified 9.5 x 6.8 mm chip-scale package (a-CSP™), and contains advanced ASIL safety mechanisms.

Find out more at www.ovt.com.



Applications

- Automotive
 - lane departure warning / lane keep assist
 - blind spot detection
 - pedestrian detection
 - traffic sign recognition
 - autonomous driving

Product Features

- support for image size:
 - 1824 x 940
 - VGA
 - QVGA, and any cropped size
- OmniHDR™-S technology
- high sensitivity
- safety features
- low power consumption
- image sensor processor functions:
 - lens correction
 - defective pixel cancelation
 - HDR combination and PWL mapping
 - automatic black level correction
- supported output formats: RAW
- horizontal and vertical sub-sampling
- serial camera control bus (SCCB) for register programming
- high speed serial data transfer with MIPI CSI-2, parallel 12-bit DVP output
- external frame synchronization capability
- embedded temperature sensor
- one time programmable (OTP) memory

OV10652



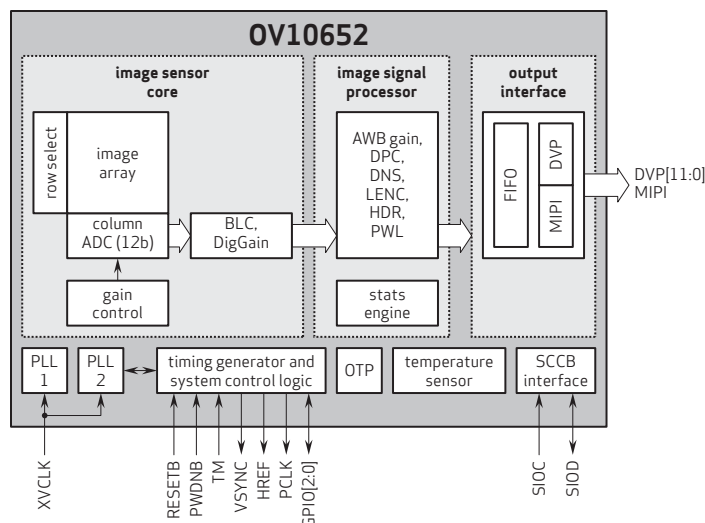
Ordering Information

- OV10652-E85Y-1D** (lead-free) 85-pin a-CSP™, with DAR coating, rev 1D, packed in tray
- OV10652-E85Y-LD** (lead-free) 85-pin a-CSP™, with DAR coating, rev 1D, packed in tray with protective film (tab top left)
- OV10652-E85Y-OD** (lead-free) 85-pin a-CSP™, with DAR coating, rev 1D, packed in tape&reel with protective film (tab top left)
- OV10652-E85Y-MD** (lead-free) 85-pin a-CSP™, with DAR coating, rev 1D, packed in tray with protective film (tab top right)
- OV10652-E85Y-ND** (lead-free) 85-pin a-CSP™, with DAR coating, rev 1D, packed in tape&reel with protective film (tab top right)

Product Specifications

- active array size:** 1824 x 940
- power supply:**
 - analog: 3.14 - 3.47V
 - digital: 1.425 - 1.575V
 - DOVDD: 1.7 - 1.9V
 - AVDD: 1.7 - 1.9V
- power requirements:**
 - active: 450 mW
 - standby: 100 µW
- temperature range:**
 - operating: -40°C to +105°C sensor ambient temperature and -40°C to +125°C junction temperature
- output interfaces:** 12-bit DVP, MIPI CSI-2
- output formats:**
 - 20-bit combined RAW
 - 12-bit compressed combined RAW
 - separated 12-bit RAW
 - 2x12-bit compressed RAW
 - 16-bit log domain combined RAW
 - 3x12-bit uncompressed RAW
- input clock frequency:** 6 - 40 MHz
- lens size:** 1/2.09"
- lens chief ray angle:** 19°
- scan mode:** progressive
- shutter:** rolling shutter
- maximum image transfer rate:**
 - full resolution: 60 fps
- sensitivity:** 9.5 V/Lux-sec
- max S/N ratio:** 41.7 dB
- dynamic range:** 120 dB
- pixel size:** 4.2 µm x 4.2 µm
- image area:** 7711.2 µm x 3998.4 µm
- package dimensions:**
 - a-CSP™: 9510 µm x 6860 µm

Functional Block Diagram



4275 Burton Drive
Santa Clara, CA 95054
USA

Tel: +1 408 567 3000
Fax: +1 408 567 3001
www.ovt.com

OmniVision reserves the right to make changes to their products or to discontinue any product or service without further notice. OmniVision, the OmniVision logo and OmniHDR are registered trademarks of OmniVision Technologies, Inc. OmniBSI and a-CSP are trademarks of OmniVision Technologies, Inc. All other trademarks are the property of their respective owners.



OmniVision