OV10652

1.7-megapixel product brief

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

OMNIVISION's OV10652 is a 4.2 µm 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 chip-scale package (a-CSP™), and contains advanced ASIL safety mechanisms.

Find out more at www.ovt.com.

OMNIVISION®

OV10652

Ordering Information

- **OV10652-E85Y-1D** (lead-free) 85-pin a-CSP™, with DAR coating, rev 1D, packed in tray

Applications

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

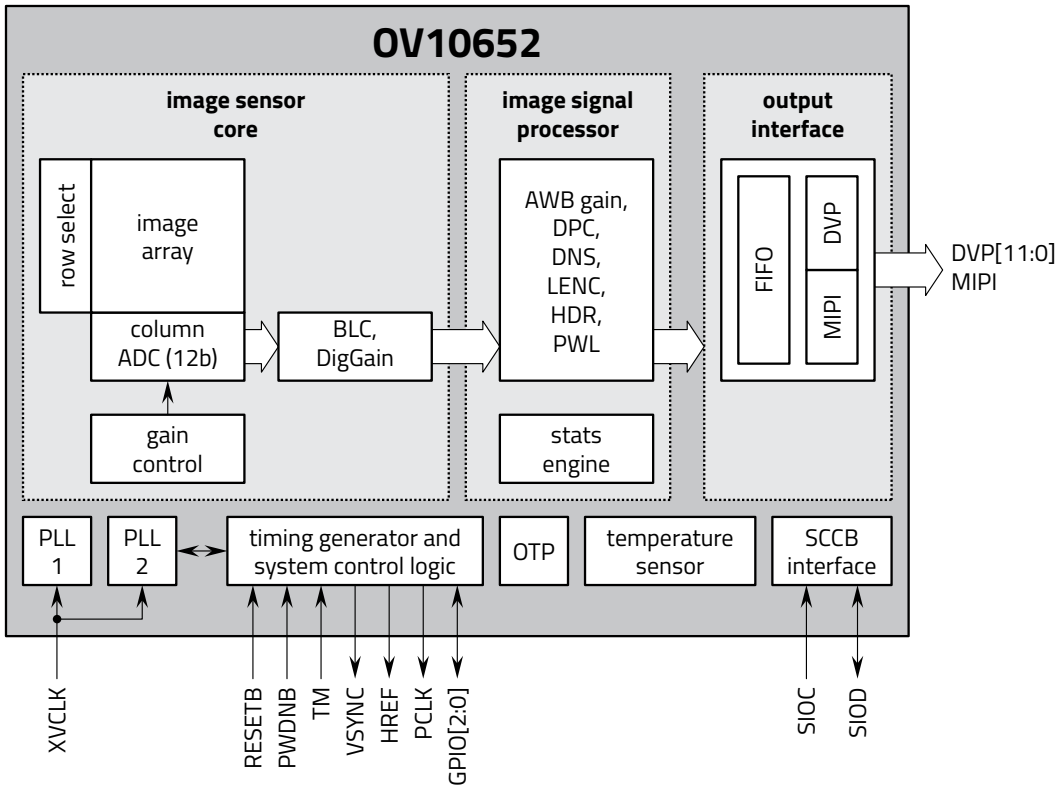
Technical Specifications

- **active array size:** 1824 x 940
- **maximum image transfer rate:**
  - full resolution: 60 fps
- **power supply:**
  - analog: 3.14V ~ 3.47V
  - digital: 1.425V ~ 1.575V
  - DOVDD: 1.7V ~ 1.9V
  - AVDD: 1.7V ~ 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 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
- **output interfaces:** 12-bit DVP, MIPI CSI-2
- **lens size:** 1/2.09"
- **lens chief ray angle:** 19° non-linear
- **scan mode:** progressive
- **pixel size:** 4.2 µm x 4.2 µm
- **image area:** 7711.2 µm x 3998.4 µm

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

Functional Block Diagram



Version 1.4, July 2024

4275 Burton Drive
Santa Clara, CA 95054
USA

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

OMNIVISION®