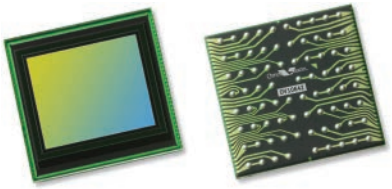
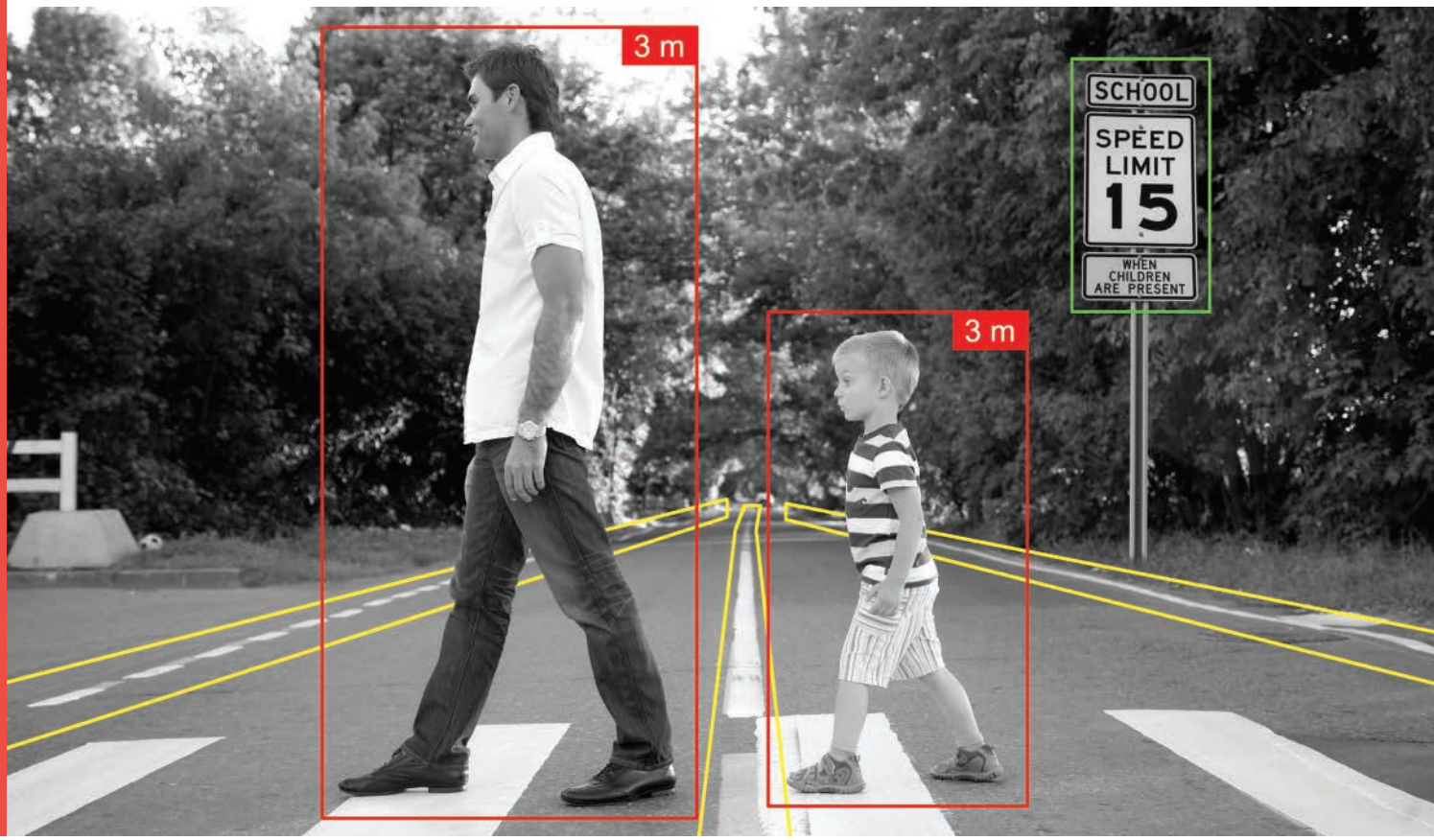


OV10642 HDR product brief



lead free

available in a lead-free package

Best-In-Class Sensitivity and High Dynamic Range for Advanced Driver Assistance Systems

OmniVision's OV10642 is a high performance 1.3-megapixel OmniHDR®-S image sensor that delivers the highest sensitivity and the best high dynamic range (HDR) in its class.

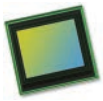
The sensor's benefits enable a host of advanced features, including: pedestrian detection, lane-departure warning, traffic sign recognition, lane keeping assist systems, and high beam assist, among others.

The OV10642 image sensor utilizes OmniBSI™ technology to deliver industry leading sensitivity and extended dynamic range up to 120 dB in a simple, low-power and cost-effective system. The 1/2.56-inch sensor supports an active array of 1280 x 1080 pixels and supports RAW image output up to 60 frames per second. The OV10642 fits into a compact package.

Find out more at www.ovt.com.

OmniVision

OV10642



Applications

- Automotive
  - Lane Departure Warning/ Lane Keep Assist
  - Blind Spot Detection
  - Pedestrian Detection
  - Traffic Sign Recognition
  - Occupant Sensor
  - Autonomous Driving
  - High Beam Assist

Product Features

- AEC-Q100 grade 2 qualified
- support for image size:
  - 1280 x 1080
  - VGA
  - QVGA, and any cropped size
- OmniHDR*-S technology
- high sensitivity
- safety features
- low power consumption
- image sensor processor functions:
  - automatic exposure/gain control
  - 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

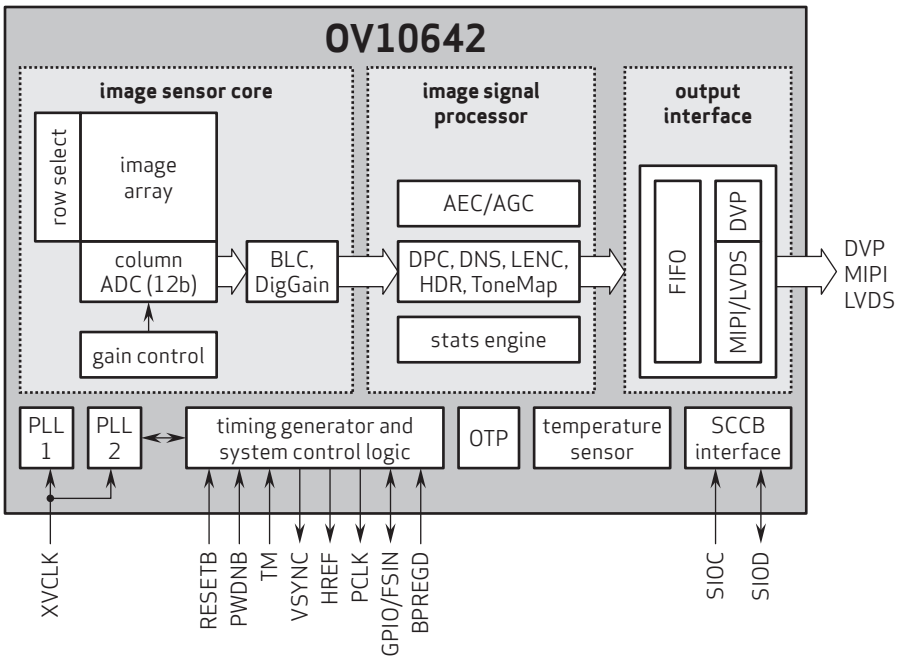
Ordering Information

- **OV10642-N79Y-PF** (lead-free) 78-pin a-CSP™, with DAR coating, rev 1F, packed in tray with protective film
- **OV10642-N79Y-RF** (lead-free) 78-pin a-CSP™, with DAR coating, rev 1F, packed in tape & reel with protective film

Technical Specifications

- **active array size:** 1280 x 1080
- **maximum image transfer rate:**
  - **full resolution:** 60 fps
- **power supply:**
  - **analog:** 3.14 - 3.47V
  - **digital:** 1.425 - 1.65V
  - **DOVDD:** 1.7 - 1.9V
  - **AVDD:** 1.7 - 1.9V
- **power requirements:**
  - **active:** 360 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/LVDS CSI-2
- **lens size:** 1/2.56"
- **lens chief ray angle:** 15°
- **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
- **scan mode:** progressive
- **shutter:** rolling shutter
- **pixel size:** 4.2 µm x 4.2 µm
- **image area:** 5410 µm x 4570 µm

Functional Block Diagram



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