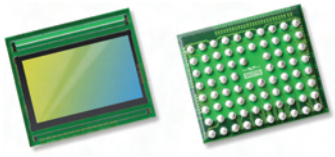


OV2775 full HD (1080p) product brief

High Performance 2-Megapixel OmniBSI™-2 Sensor for Advanced Automotive Applications

lead free

available in a lead-free package

OmniVision's OV2775 is a 2.8-micron OmniBSI™-2 image sensor designed for a wide range of automotive imaging applications. The OV2775 features 1920 x 1080 resolution and Deep Well™ pixel technology, delivering 16-bit linear output to achieve 94 dB of dynamic range from a single exposure for best-in-class low-light performance. The OV2775's advanced high dynamic range (HDR) capabilities make it ideally suited for automotive applications such as front-view machine vision advanced driver assistance systems (ADAS), rear video mirrors, camera monitor systems (CMS), and dash cameras.

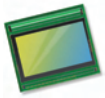
Built on OmniVision's OmniBSI™-2 Deep Well™ pixel technology, the OV2775 enables 94 dB of dynamic range from a single exposure without any drop in signal-to-noise ratio or HDR combination artifacts. The OV2775 also features a dual exposure mode that can expand the sensor's dynamic range to more than 120 dB, using a second "very short" exposure to minimize motion artifacts.

The OV2775 comes in an AEC-Q100 Grade 2-qualified 6.5 x 5.7 mm chip scale package and contains an advanced set of safety mechanisms to enable ISO 26262 ASIL B-rated camera systems.

Find out more at www.ovt.com.

OmniVision

OV2775



Applications

- Automotive
  - 360° surround view system
  - lane departure warning/ lane keep assist
  - blind spot detection
  - pedestrian detection
  - traffic sign recognition
  - occupant sensor
  - camera monitoring system
  - autonomous driving

Product Features

- support for image size:
  - 1920 x 1080
  - VGA
  - QVGA, any cropped size
- high dynamic range
- high sensitivity
- low power consumption
- image sensor processor functions:
  - lens correction
  - defective pixel cancelation
  - HDR combination
  - automatic black level correction
- supported output formats: RAW
- horizontal and vertical sub-sampling
- SCCB for register programming
- high speed serial data transfer with MIPI CSI-2/LVDS
- parallel 12-bit DVP output
- external frame synchronization capability
- embedded temperature sensor
- one time programmable (OTP) memory

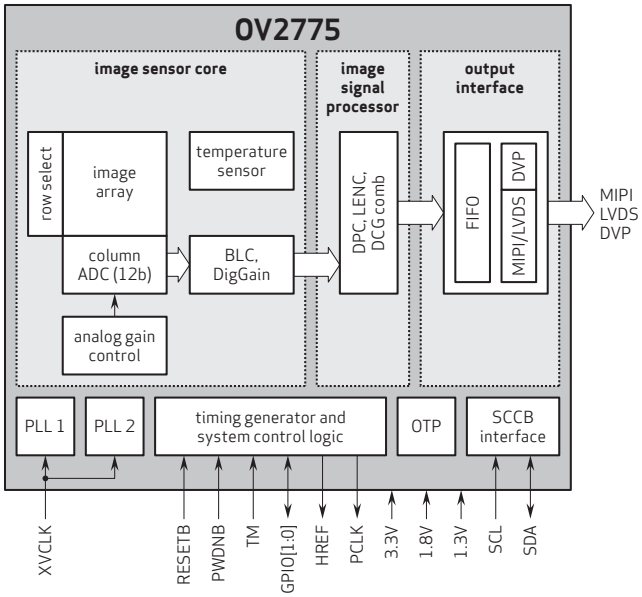
Ordering Information

- **OV02775-E77Y-1E** (color, lead-free)
  77-pin a-CSP™, with DAR coating, packed in tray without protective film
- **OV02775-E77Y-LE** (color, lead-free)
  77-pin a-CSP™, with DAR coating, packed in tray with protective film
- **OV02775-E77Y-OE** (color, lead-free)
  77-pin a-CSP™, with DAR coating, packed in tape & reel with protective film

Product Specifications

- **active array size:** 1920 x 1080
- **power supply:**
  - **analog:** 3.14 - 3.47V
  - **digital:** 1.2 - 1.4V
  - **DOVDD:** 1.7 - 1.9V
  - **AVDD:** 1.7 - 1.9V
- **power requirements:**
  - **active:** 395 mW
  - **standby:** 10 mW
- **temperature range:**
  - **operating:** -40°C to +105°C sensor ambient temperature and -40°C to +125°C junction temperature
- **output interfaces:** up to 4-lane MIPI CSI-2/LVDS, 12-bit DVP
- **input clock frequency:** 6 - 36 MHz
- **lens size:** 1/2.9"
- **lens chief ray angle:** 15°
- **scan mode:** progressive
- **shutter:** rolling shutter
- **output formats:** linear - 12-bit RAW, 10-bit compressed RAW; single exposure HDR - 16-bit combined RAW, 12-bit compressed combined RAW, 2x12 bit RAW; dual exposure HDR - 16-bit combined RAW + 12-bit VS RAW, 12-bit compressed combined RAW + 12-bit VS RAW, 3x12 bit RAW, 3x10 bit combined RAW, 12-bit (10-bit) RAW (HCG or LCG) + 12-bit (10-bit) VS
- **maximum image transfer rate:** 30 fps full resolution
- **sensitivity:** 26,200 e⁻/lux.sec @ 530 nm
- **max S/N ratio:** 42.6 dB
- **dynamic range:** 120 dB
- **pixel size:** 2.8 µm x 2.8 µm
- **image area:** 5482.35 µm x 3202 µm
- **package dimensions:**
  - **a-CSP™:** 6544 µm x 5734 µm

Functional Block Diagram



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