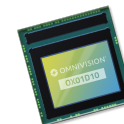




OX01D10

1.2-megapixel product brief



Industry-Leading 1.2MP Image Sensor for Automotive LED Flicker Mitigation with Smallest Split-Pixel Design

OMNIVISION's OX01D10 is the next-generation 1.2MP image sensor for automotive viewing applications. The low-power consumption sensor enables rear-view and surround-view cameras with excellent image quality and more scene details via best-in-class resolution and high dynamic range of 110 dB in LFM mode.

The image sensor brings together split pixel and dual conversion gain (DCG™) technology, delivering motion free high dynamic range (HDR) to 120 dB and LED flicker mitigation (LFM). These features increase driver safety because more scene details can be captured by rear-view and surround-view cameras while operating over the full automotive temperature range, delivering excellent image quality in demanding lighting conditions, objects in motion, and LED signs/headlights.

The OX01D10 enables the industry's smallest and most power-efficient viewing camera modules by consuming less than 200 mW at the full 30 fps and providing the highest resolution in a 1/4-inch optical format.

Additionally, the sensor has an advanced set of safety mechanisms to enable advanced ASIL features and HDR of 120 dB without LFM. It is AEC-Q100 Grade 2 certified for automotive applications and samples and evaluation kits are available now.

Find out more at www.ovt.com.



- OX01D10-E63Y-1D (color, lead-free)
63-pin a-CSP™, rev 1D, packed in tray without protective film

Applications

- 360° surround view systems
- e-mirrors
- rear view cameras

Technical Specifications

- active array size:** 1336 x 1036
- maximum image transfer rate:** 30 fps
- power supply:**
 - analog: 3.3V
 - digital: 1.2V
 - I/O pads: 1.8V/3.3V
- power requirements:**
 - active: streaming @ 960p30: 180 mW (measured with FuSa/ASIL off)
- temperature range:**
 - operating: -40°C to +105°C sensor ambient temperature and -40°C to +125°C junction temperature
- output formats:** 3x10b RAW: split pixel with captures (LCG, SPD,VS); DCG™ with split pixel (HCG, LCG, SPD), 12-bit compressed DCG™ RAW, 12-bit compressed HDR3 RAW (DCG™, SPD)
- output interfaces:** up to 2-lane MIPI CSI-2, 12-bit DVP
- lens size:** 1/4"
- lens chief ray angle:** 20°
- pixel size:** 2.8 μm x 2.8 μm
- image area:** 3740.8 μm x 2900.8 μm

Product Features

- support for image size: 1280 x 960 and any cropped size
- increased pixel array resolution for mechanical alignment support: +40 (H), +60 (V)
- HDR readout modes, with 3x captures: DCG™ (LPD) + SPD, on-chip HDR combination with LFM support LCG (LPD) + SPD + VS, off-chip HDR combination
- LED flicker mitigation (LFM)
- HDR optimized to reduce motion artifacts
- SCCB for register programming
- high speed serial data transfer with MIPI CSI-2
- image sensor processor functions:
 - lens shading correction
 - defective pixel cancellation
 - HDR combination
 - automatic black level correction
 - PWL compression, etc.
- ASIL-B safety feature
- parallel 12-bit DVP output
- external frame synchronization capability
- embedded temperature sensor
- embedded supply voltage monitor
- one-time programmable (OTP) memory

Functional Block Diagram

