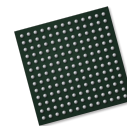




OV495

ASIC product brief



High Performance Image Signal Processor Companion Chip for Automotive Imaging

OMNIVISION's OV495 is an image signal processor (ISP) companion chip that pairs with OMNIVISION's family of automotive RAW image sensors for advanced automotive imaging applications. The OV495 enables electronic distortion and perspective correction without video compression artifacts, making it an ideal ISP solution for next generation rear view camera and camera monitor system (CMS) applications. The OV495 is compatible with OMNIVISION's OX03A, OX02A, OV2775, OV10650, and OV10640 automotive image sensors.

The OV495 can process video streams of up to 2-megapixels in resolution at a maximum of 60 frames per second (fps), with distortion and perspective correction to enable different viewing modes and angles. The OV495 also supports overlay capability for features, such as parking guidance, to enable high-performance vision systems.

The OV495 comes in an AEC-Q100 Grade 2 qualified 7 mm x 7 mm BGA package and contains an advanced set of safety mechanisms to enable ASIL rated camera systems.

Find out more at www.ovt.com.



- OV00495-U69G-2C (lead-free)
169-pin BGA, packed in tray
- OV00495-U69G-TC (lead-free)
169-pin BGA, packed in tape and reel

Applications

- rear view cameras
- e-mirrors
- surround view systems
- camera monitoring systems (CMS)

Technical Specifications

- power supply:**
 - core: 1.1V -5% ~ 1.1V +10%
 - I/O: 1.8V ±5% or 3.3V ±5%
- power requirements:** 599 mW, measured at 1920 x 1080 @ 30 fps, DCG12 + VS12 input from OV2775 via MIPI interface and 1920 x 1080 YUV 422 output via MIPI interface with DCPC and OSD
- temperature range:**
 - operating: -40°C to +105°C ambient temperature and -40°C to +125°C junction temperature
- package dimensions:** 7 mm x 7 mm

Product Features

- AEC-Q100 grade 2 qualified
- advanced 150 Mp/s throughput ISP for high quality image capturing and video streaming
- local and global tone mapping support
- up to 3-capture HDR combination
- supports distortion correction (DC) / perspective correction (PC) up to 190 degrees
- supports four independent layers, line and global
- transparency control for each layer, 32 color/palette per image and sizes up to 1080p overlay
- on-chip DDR
- embedded information including frame counter, temperature, and register data for each image to enable critical automotive safety applications
- auto white balance (AWB)
- automatic exposure control (AEC) / automatic gain control (AGC)
- supports statistics data of up to four user programmable ROIs
- SCCB master/slave interface for sensor and ASIC configuration
- supports four-wire or two-wire serial interface to retrieve stored firmware from external memory devices, such as EEPROM
- on-chip PLL to generate internal clocks
- on-chip voltage regulator 1.8V to 1.1V
- brown-out detection circuit and output flag
- supports 2x2 lane MIPI RX/TX and 1x4 lane MIPI RX/TX
- supports 12-bit DVP input, shared with MIPI RX (1.2 Gbps/lane)
- supports 12-bit DVP output, shared with MIPI TX
- supports 24-bit DVP output, shared with BT1120 output
- embedded 32-bit RISC processor for high performance and flexibility
- supports 1K bits of one-time programmable memory (OTP)
- JTAG boundary scan

Functional Block Diagram

