

## AR0138AT

# CMOS Image Sensor, Digital, 1.2 MP, 1/2.6-Inch, 4.2 $\mu\text{m}$ BSI pixel

## Product Overview

For complete documentation, see the data sheet.

ON Semiconductor AR0138AT is a 1/2.6-inch CMOS digital image sensor with a 1288 H x 968 V active-pixel array. This advanced automotive sensor captures images in either linear, or high dynamic range, with rolling-shutter readout. AR0138AT is optimized for both low light and challenging high dynamic range scene performance, with a 4.2  $\mu\text{m}$  BSI pixel and on-sensor 120 dB HDR capture capability. The sensor includes flexible functions such as in-pixel binning, windowing, and both video and single frame modes. The sophisticated sensor fault detection features and embedded data on AR0138AT are designed to enable camera ASIL B compliance. The device is programmable through a simple two-wire serial interface, and supports multiple output interface options, including MIPI and Parallel. The AR0138AT sensor is also supported by ON Semiconductor automotive co-processor products, delivering a total HDR video solution for the latest automotive viewing applications (RVC, Surround View, and CMS applications).

## Features

- High Performance 4.2  $\mu\text{m}$  Automotive Grade Backside Illuminated (BSI) Pixel with DR-Pix Technology
  - Advanced On-Sensor HDR Reconstruct with Flexible Exposure Ratio Control
  - Fast 69 FPS Video Capture at 1280 x 960 and 3-exposure HDR
  - Sensor Fault Detection for ASIL-B Compliance Support
  - 2x2 In-pixel Binning Mode
  - Data Interfaces: 4-lane MIPI CSI-2, or Parallel
  - Selectable Automatic or User Controlled Black Level Control
  - Frame to Frame Switching Among up to 4 Contexts to Enable Multi-function Systems
  - Spread-spectrum Input Clock Support
  - Multi-Camera Synchronization Support
- For more features, see the data sheet

## Applications

- 1.2 MP, High Performance ADAS (Automotive Driver Assistant System)
- 960p, 720p Automotive Rear View or Backup
- 960p, 720p Automotive Surround View