Product Overview

AR0820AT: CMOS Image Sensor, Digital, 8.3 MP, 1/2-inch, High-Resolution

For complete documentation, see the data sheet.

ON Semiconductor AR0820AT is a 1/2-inch CMOS digital image sensor with a 3848 H x 2168 V active-pixel array. This advanced automotive sensor captures images in either linear or high dynamic range, with rolling-shutter readout.

AR0820AT is optimized for both low light and challenging high dynamic range scene performance, with a 2.1 µm DR-Pix BSI pixel and on-sensor 140 dB HDR capture capability. The sensor includes advanced functions such as in-pixel binning, windowing, and both video and single frame modes to provide flexible Region of Interest (ROI) or specific resolution in order to enhance performance in extreme low light conditions. The sophisticated sensor fault detection features and embedded data on AR0820AT are designed to enable camera ASIL B compliance. The device is programmable through a simple two-wire serial interface and supports MIPI output interface.

Features

- High Performance 2.1 µm Automotive Grade Backside Illuminated (BSI) Pixel with DR-Pix ™ Technology
- Advanced On-Sensor HDR Reconstruct with Flexible Exposure Ratio Control
- Fast Full Resolution Video Capture of 3840 x 2160 at up to 40 fps in 3-exposure HDR and 30 fps in 4-exposure HDR
- Line interleaved T1/T2/T3/T4 output
- Sensor Fault Detection for ASIL-B Compliance Support
- 2 x 2 In-pixel Binning Mode and Color Binning Mode
- Data Interface: 1.8 Gbps/Lane, 4-lane MIPI CSI-2
- Selectable Automatic or User Controlled Black Level Control
- Frame to Frame Switching Among up to 4 Contexts to Enable Multi-function Systems
- Multi-Camera Synchronization Support
  For more features, see the data sheet

Applications

- Front View Camera (ADAS)
- Autonomous Driving (AD)

End Products

- Front View ADAS
- Surround Sensing Camera
- In Cabin
- Robot Taxi
- Robot Delivery

Part Electrical Specifications

Product	Pricing ($/Unit)	Compliance	Status	Type	Megapixels	Frame Rate (fps)	Optical Format	Shutter Type	Pixel Size (µm)	Output Interface	Color	Package Type
AR0820ATSB18XUD20-E		Pb-free Halide free non AEC-Q and PPAP	Active	CMOS	8.3	40	1/2 inch	Electronic Rolling	2.1 x 2.1	MIPI	RGB	
AR0820ATSB18XUEA0-DPBR-E		Pb-free Halide free non AEC-Q and PPAP	Active	CMOS	8.3	40	1/2 inch	Electronic Rolling	2.1 x 2.1	MIPI	RGB	IBGA-95
AR0820ATSB18XUEA0-DRBR-E		Pb-free Halide free non AEC-Q and PPAP	Active	CMOS	8.3	40	1/2 inch	Electronic Rolling	2.1 x 2.1	MIPI	RGB	IBGA-95

For more information please contact your local sales support at www.onsemi.com.

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