AR0820AT

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

Product Overview

For complete documentation, see the data sheet.

The AR0820AT is a 1/2inch CMOS digital image sensor with a 3848 H x 2168 V activepixel array. This advanced automotive sensor captures images in either linear or high dynamic range, with rollingshutter readout.

AR0820AT is optimized for both low light and challenging high dynamic range scene performance, with a 2.1 µm DRPix BSI pixel and onsensor 140 dB HDR capture capability. The sensor includes advanced functions such as inpixel 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 twowire serial interface and supports MIPI output interface.

Features

- High Performance 2.1 µm Automotive Grade Backside Illuminated (BSI) Pixel with DRPix ™ Technology
- Advanced OnSensor HDR Reconstruct with Flexible Exposure Ratio Control
- Fast Full Resolution Video Capture of 3840 x 2160 at up to 40 fps in 3exposure HDR and 30 fps in 4exposure HDR
- Line interleaved T1/T2/T3/T4 output
- Sensor Fault Detection for ASILB Compliance Support
- 2 x 2 Inpixel Binning Mode and Color Binning Mode
- Data Interface: 1.8 Gbps/Lane, 4lane MIPI CSI2
- Selectable Automatic or User Controlled Black Level Control
- Frame to Frame Switching Among up to 4 Contexts to Enable Multifunction Systems
- MultiCamera 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	Status	Compilance	Type	Megapixels	Frame Rate (fps)	Optical Format	Shutter Type	Pixel Size (µm)	Output Interface	Color	Package Type	Case Outline	MSL Type	MSL Temp (°C)	Container Type	Container Qty.
AR0820ATSC18XMEA0-DPBR	Active		CMOS	8.3	40	1/2 inch	Electronic Rolling	2.1 x 2.1	MIPI	RGB	IBGA-95	503BW.PDF	3	260	JTRAY	2700
AR0820ATSC18XMEA0-DRBR	Active		CMOS	8.3	40	1/2 inch	Electronic Rolling	2.1 x 2.1	MIPI	RGB	IBGA-95	503BW.PDF	3	260	JTRAY	2700
AR0820ATSC18XMEA0-P1-TPBR	Active		CMOS	8.3	40	1/2 inch	Electronic Rolling	2.1 x 2.1	MIPI	RGB	IBGA-95	503BW.PDF	3	260	REEL	1400
AR0820ATSC18XMEA0-TPBR	Active		CMOS	8.3	40	1/2 inch	Electronic Rolling	2.1 x 2.1	MIPI	RGB	IBGA-95	503BW.PDF	3	260	REEL	1400
AR0820ATSC18XMEA0-TRBR	Active		CMOS	8.3	40	1/2 inch	Electronic Rolling	2.1 x 2.1	MIPI	RGB	IBGA-95	503BW.PDF	3	260	REEL	1400