

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	Compliance	Type	Me- gapi- xels	Frame Rate (fps)	Opti- cal Format	Shu- tter Type	Pixe- l Size (μm)	Out- put Inter- face	Col- or	Fam- ily	Pac- kage Type	Cas- e Out- line	MS L Type	MS L Temp ($^{\circ}\text{C}$)	Con- tain- er Type	Con- tain- er Qty.
AR0820ATSC18 XMEA0-DPBR	Active		CM OS	8.3	40	1/2 inch	Elec- tron- ic Roll- ing	2.1 x 2.1	MIPI	RGB	-	IBG A- 95	503 BW. PDF	3	260	JTR AY	270 0
AR0820ATSC18 XMEA0-DRBR	Active		CM OS	8.3	40	1/2 inch	Elec- tron- ic Roll- ing	2.1 x 2.1	MIPI	RGB	-	IBG A- 95	503 BW. PDF	3	260	JTR AY	270 0
AR0820ATSC18 XMEA0-P1- TPBR	Active		CM OS	8.3	40	1/2 inch	Elec- tron- ic Roll- ing	2.1 x 2.1	MIPI	RGB	-	IBG A- 95	503 BW. PDF	3	260	REE L	140 0
AR0820ATSC18 XMEA0-TPBR	Active		CM OS	8.3	40	1/2 inch	Elec- tron- ic Roll- ing	2.1 x 2.1	MIPI	RGB	-	IBG A- 95	503 BW. PDF	3	260	REE L	140 0
AR0820ATSC18 XMEA0-TRBR	Active		CM OS	8.3	40	1/2 inch	Elec- tron- ic Roll- ing	2.1 x 2.1	MIPI	RGB	-	IBG A- 95	503 BW. PDF	3	260	REE L	140 0