

## AR0147AT

# Hayabusa CMOS Digital Image Sensor, 1.3 MP, 1/4", HDR + LFM

## Product Overview

For complete documentation, see the data sheet.

The AR0147AT is a 1/4inch CMOS digital image sensor with a 1344 H x 968 V activepixel array. This advanced automotive sensor captures images in either linear, or high dynamic range, with rollingshutter readout. AR0147AT is optimized for both low light and challenging high dynamic range scene performance, with a 3 um BSI pixel and onsensor up to 140 dB HDR capture capability. The sensor includes flexible functions such as inpixel binning, windowing, and both video and single frame modes. The sophisticated sensor real-time safety mechanism and fault detection features on AR0147AT enable ASILB compliance. The device is programmable through a simple twowire serial interface, and supports both MIPI CSI2 and Parallel output interfaces.

### Features

- Combined HDR RAW Output, up to 20-bit (>140 dB)
  - Support for full-resolution 120 dB to 140 dB HDR+LFM
  - New High-Performance 3 um BSI Pixel with Super-Exposure HDR+LFM Mode
  - Advanced HDR Image Combination with Flexible Exposure Ratio Control
  - ASIL-B and Safety Design
  - Selectable Automatic or User Controlled Black Level Control
  - Spread-spectrum Input Clock Support
  - Real-time Functional Safety Mechanisms and Fault Detection
  - 1344 x 968 at up to 60fps
  - 2x2 In-pixel Binning
- For more features, see the data sheet

### Benefits

- Frame to Frame Context Switching to Enable Multi-function Systems
- Multi-Camera Synchronization Support
- High Performing Automotive Grade Pixel for Best Low Light and High Contrast Scenes
- Best Performance for High Contrast Scenes
- Meeting All Challenging Automotive Requirements for Safety
- Flexible Sensor Controls for Best User Experience
- Flexible System Design


### Applications

- Automotive ADAS
- ADAS and Viewing Fusion
- In-Cabin Monitoring
- Surround View Systems
- Rear View Systems

### End Products

- Automotive Surround and Rear-View Cameras
- E-mirror (Camera Monitoring System)
- Digital Video recorder (DVR)

## 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
AR0147ATSC00 XUEA3-DPBR			Active	CMOS	1.3	60	1/4 inch	Electronic Rolling	3.0 x 3.0		RGB	IBGA-80
AR0147ATSC00 XUEA3-DRBR			Active	CMOS	1.3	60	1/4 inch	Electronic Rolling	3.0 x 3.0		RGB	IBGA-80
AR0147ATSC00 XUEA3-TPBR			Active	CMOS	1.3	60	1/4 inch	Electronic Rolling	3.0 x 3.0		RGB	IBGA-80
AR0147ATSC00 XUEA3-TRBR			Active	CMOS	1.3	60	1/4 inch	Electronic Rolling	3.0 x 3.0		RGB	IBGA-80
AR0147ATSC00 XUEA5-DRBR			Active	CMOS	1.3	60	1/4 Inch	Electronic Rolling	3.0 x 3.0	Multi	RGB	IBGA-80
AR0147ATSC00 XUEG3-DPBR			Active	CMOS	1.3	60	1/4 inch	Electronic Rolling	3.0 x 3.0		RGB	IBGA-89
AR0147ATSC00 XUEG3-DRBR			Active	CMOS	1.3	60	1/4 inch	Electronic Rolling	3.0 x 3.0		RGB	IBGA-89
AR0147ATSC00 XUEG3-TPBR			Active	CMOS	1.3	60	1/4 inch	Electronic Rolling	3.0 x 3.0		RGB	IBGA-89
AR0147ATSC00 XUEG3-TRBR			Active	CMOS	1.3	60	1/4 inch	Electronic Rolling	3.0 x 3.0		RGB	IBGA-89
AR0147ATSC00 XUEG5-DPBR			Active	CMOS	1.3	60	1/4 inch	Electronic Rolling	3.0 x 3.0	Multi	RGB	IBGA-89
AR0147ATSC00 XUEG5-DRBR			Active	CMOS	1.3	60	1/4 inch	Electronic Rolling	3.0 x 3.0	Multi	RGB	IBGA-89
AR0147ATSC00 XUEG5-TPBR			Active	CMOS	1.3	60	1/4 inch	Electronic Rolling	3.0 x 3.0	Multi	RGB	IBGA-89
AR0147ATSC00 XUEG5-TRBR			Active	CMOS	1.3	60	1/4 inch	Electronic Rolling	3.0 x 3.0	Multi	RGB	IBGA-89