

## 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 20bit (>140 dB)
- Support for fullresolution 120 dB to 140 dB HDR+LFM
- New HighPerformance 3 um BSI Pixel with SuperExposure HDR+LFM Mode
- Advanced HDR Image Combination with Flexible Exposure Ratio Control
- ASILB and Safety Design
- Selectable Automatic or User Controlled Black Level Control
- Spreadspectrum Input Clock Support
- Realtime Functional Safety Mechanisms and Fault Detection
- 1344 x 968 at up to 60fps
- 2x2 Inpixel Binning

For more features, see the data sheet

## 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                | Status | Compliance                                                                        | Type | Megapixels | Frame Rate (fps) | Optical Format | Shutter Type       | Pixel Size (μm) | Output Interface | Color | Family   | Packaging Type | Cas e Outline | MS L Type | MS L Temp (°C) | Container Type | Container Qty. |
|------------------------|--------|-----------------------------------------------------------------------------------|------|------------|------------------|----------------|--------------------|-----------------|------------------|-------|----------|----------------|---------------|-----------|----------------|----------------|----------------|
| AR0147ATSC00XUEA5-DPBR | Active |  | CMOS | 1.3        | 60               | 1/4 inch       | Electronic Rolling | 3.0 x 3.0       | Multi            | RGB   | Hayabusa | IBGA-80        | 503 CB. PDF   | 3         | 260            | JTRAY          | 2600           |
| AR0147ATSC00XUEA5-DRBR | Active |  | CMOS | 1.3        | 60               | 1/4 Inch       | Electronic Rolling | 3.0 x 3.0       | Multi            | RGB   | Hayabusa | IBGA-80        | 503 CB. PDF   | 3         | 260            | JTRAY          | 2600           |
| AR0147ATSC00XUEG5-DPBR | Active |  | CMOS | 1.3        | 60               | 1/4 inch       | Electronic Rolling | 3.0 x 3.0       | Multi            | RGB   | Hayabusa | IBGA-89        | 503 CC. PDF   | 3         | 260            | JTRAY          | 3000           |
| AR0147ATSC00XUEG5-DRBR | Active |  | CMOS | 1.3        | 60               | 1/4 inch       | Electronic Rolling | 3.0 x 3.0       | Multi            | RGB   | Hayabusa | IBGA-89        | 503 CC. PDF   | 3         | 260            | JTRAY          | 3000           |