

## Product Overview

### AR0821CS: 8.3 Mp Rolling Shutter CMOS Digital Image Sensor

For complete documentation, see the data sheet.

AR0821CS is a 1/1.17-inch CMOS digital image sensor with a 3848 H x 2168 V active pixel array. This advanced sensor captures images in either linear or high dynamic range, with rolling shutter readout. AR0821 is optimized to deliver high quality performance in both low light and challenging lighting conditions. It is supported by a 2.1  $\mu\text{m}$  DR-Pix<sup>™</sup>; BSI pixel from onsemi and embedded HDR (eHDR) technology that delivers greater than 140 dB. The sensor includes advanced functions such as pixel binning, windowing, summing, and both video and single frame modes to provide flexible Region of Interest (ROI), optimal bandwidth as needed by the application and low power consumption. These characteristics make the sensor very suitable for a variety of applications including scanning, dashcams, autonomous mobility, and inspection & quality control.

#### Features

- Industry Leading Embedded High Dynamic Range (eHDR)
- BSI Pixel with High Linear Full Well
- Low Operational Power
- Built-In Statistics Engine
- Multiple Functional Modes - Binning, Scaling, Summing, Windowing, Context Switching, Trigger

#### Applications

- Aerial Imaging
- Machine Vision
- Smart Homes/Security
- Scanning
- Commercial Surveillance

#### Benefits

- Superior Image Quality in challenging light conditions with widest dynamic range
- High SNR & QE delivering high quality images even in lowlight conditions
- Higher Power Budget to Processing Engines, enables higher performance-power ratio
- Offloads Image Processor Loads, provides scene details aiding quick decision making
- Application-specific Image Output Selection with performance/power/bandwidth optimizations

#### End Products

- Autonomous Guided Vehicles (Drones)
- Machine Vision Cameras
- ID, MRZ Scanners
- Retail Analytics Cameras
- Video Doorbells

#### Part Electrical Specifications

| Product                 | Pricing (\$/Unit) | Compliance                                   | Status | Type | Megapixels | Frame Rate (fps) | Optical Format | Shutter Type       | Pixel Size ( $\mu\text{m}$ ) | Output Interface | Color | Package Type |
|-------------------------|-------------------|----------------------------------------------|--------|------|------------|------------------|----------------|--------------------|------------------------------|------------------|-------|--------------|
| AR0821CSSC18SMEA0-DPBR  |                   | Pb-free<br>Halide free<br>non AEC-Q and PPAP | NEW    | CMOS | 8.3        | 60               | 1/2 inch       | Electronic Rolling | 2.1 x 2.1                    | MIPI             | Color | IBGA-95      |
| AR0821CSSC18SMEA0-DPBR1 |                   | Pb-free<br>Halide free<br>non AEC-Q and PPAP | NEW    | CMOS | 8.3        | 60               | 1/2 inch       | Electronic Rolling | 2.1 x 2.1                    | MIPI             | Color | IBGA-95      |
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For more information please contact your local sales support at [www.onsemi.com](http://www.onsemi.com).

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