



= Preliminary = **AK9255A/56A**

## Dual 16/14-Bit 0.54MSPS ZDS-NS A/D Converter

### 1. General Description

The AK9255A/56A are 16/14-bit 0.54 MSPS ZDS-NS (\* 1) A/D converters. They are ZDS A/D converters with noise suppression function and capable of improving the system accuracy. The AK9255A/56A are available in an small package, saving space on the printing board.

Notes:

\* 1. ZDS-NS: Zero latency Delta Sigma with Noise Suppression Function

A ZDS-NS A/D converter realizes ultrafast response of SAR while maintaining high accuracy conversion like a delta-sigma converter, based on AKM's accumulated experience and know-how in analog-digital LSI technology. A ZDS-NS A/D converter has smaller input capacitance than SARs, reducing the buffer load of the input stage of the IC. Furthermore, the oversampling process is executed inside of the IC, and the averaging process is carried out with a built-in digital filter. Therefore, analog input signal noise can be suppressed, contributing to improving noise characteristics of the system. It also contributes to high-speed processing of a system that needs a noise averaging.

Application

- Motor Control: Position Measurement Using SinCos Encoders
- Three-Phase Power Controls
- Programmable Logic Controllers
- Power Quality Measurement
- Industrial Automation

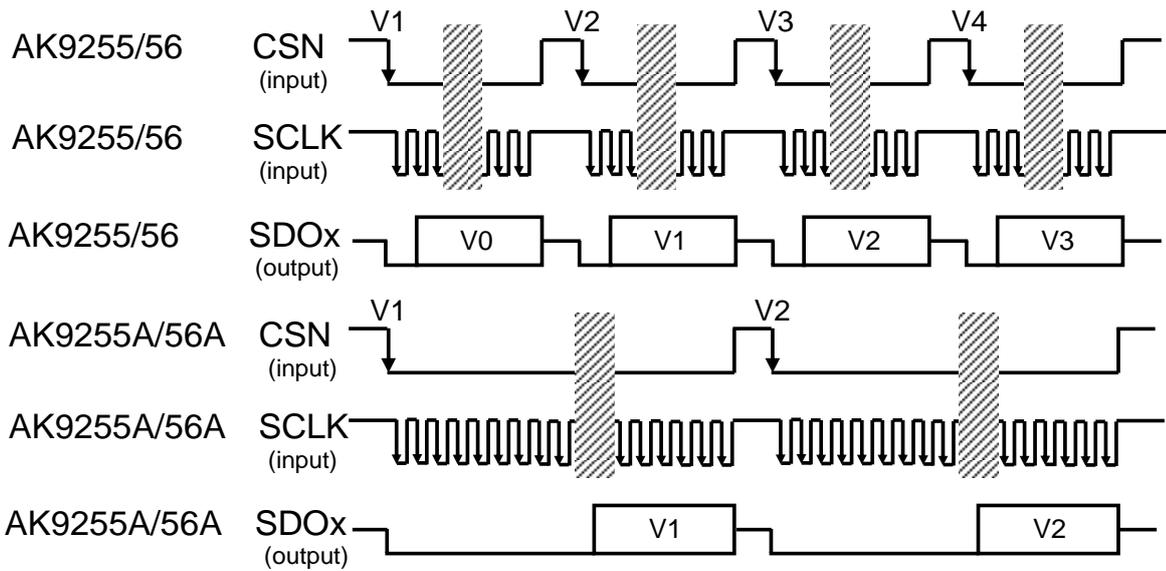
### 2. Features

- |                          |  |  |                       |
|--------------------------|--|--|-----------------------|
| <input type="checkbox"/> | 2ch Simultaneous Sampling ZDS-NS A/D Converter |  |                       |
| <input type="checkbox"/> | Resolution, Sampling Rate:                     | 16-bit, 0.54 MSPS                                      | AK9255A               |
|                          |  | 14-bit, 0.62 MSPS                                      | AK9256A               |
| <input type="checkbox"/> | Differential Input / Pseudo Differential Input |  |                       |
| <input type="checkbox"/> | Noise Suppression Function                     |  |                       |
| <input type="checkbox"/> | 16bit No Missing Code,                         | INL: $\pm 3.0$ LSB(Typ.)                               | AK9255A               |
|                          | 14bit No Missing Code,                         | INL: $\pm 1.0$ LSB(Typ.)                               | AK9256A               |
| <input type="checkbox"/> | S/N  | 86 dBFS(Typ.)  | AK9255A (NS Setting1) |
|                          |  | 90 dBFS(Typ.)  | AK9255A (NS Setting4) |
|                          |  | 82 dBFS(Typ.)  | AK9256A (NS Setting1) |
|                          |  | 85 dBFS(Typ.)  | AK9256A (NS Setting4) |
| <input type="checkbox"/> | Power Dissipation:                             | VDD : 26 mA (Typ.)                                     |                       |
|                          |  | DRVDD : 1 mA (Typ.)                                    |                       |
|                          |  | (fs= 0.54 MSPS, VDD= 3.3 V, DRVDD= 3.3 V, NS Setting1) |                       |
| <input type="checkbox"/> | Power Supply:                                  | VDD : 3.0 ~ 3.6 V                                      |                       |
|                          |  | DRVDD : 3.0 ~ 3.6 V                                    |                       |
| <input type="checkbox"/> | Operating Temperature Range:                   | -40 ~ 105 °C   |                       |
| <input type="checkbox"/> | Package:                                       | Small 16-pin QFN (3mm x 3mm, 0.5mm pitch)              |                       |

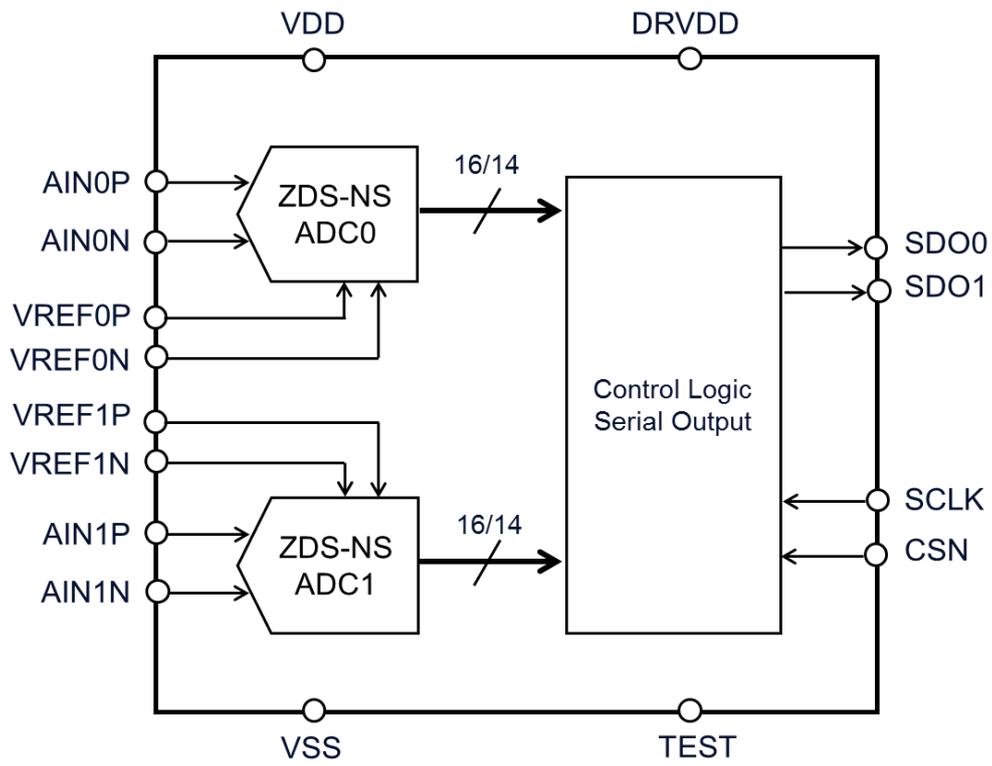
■ Device Comparison Table

The AK9255 and the AK9256 are available as a line-up of another output interface option. Please use the AK9225/56 for an application that does not need zero latency and needs faster sampling speed.

Product	Resolution	No Missing Code	SNR (typ.)	Speed	Interface
AK9255	16-bit	16-bit	86 dBFS	1.00 MSPS	1 Latency
AK9255A				0.54 MSPS	0 Latency
AK9256	14-bit	14-bit	82 dBFS	1.17 MSPS	1 Latency
AK9256A				0.63 MSPS	0 Latency



3. Block Diagram



Thank you for your access to AKM products information.  
More detail product information is available,  
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