



AK9232/33/34

Dual 18/16/14-Bit 1.1MSPS ZDS A/D Converter

1. General Description

The AK9232/33/34 are 18/16/14-bit 1.1MSPS ZDS (*) A/D converter. A polar coordinate calculation function is also integrated, and it reduces the load of DSP or microcomputer. The AK9232/33/34 are available in an ultra-small package, saving space on the printing board.

(*) ZDS: Zero latency Delta Sigma

A ZDS 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. It contributes to improving the speed and the accuracy of negative feedback circuits. A ZDS A/D converter can achieve small and high accurate motor systems..

2. Features

- 2ch Simultaneous Sampling 18/16/14-bit ZDS A/D Converter
- Sampling Rate: 1.1MSPS
- Differential Input
- S/N: 88 dB (Typ.) at 20 kHz Input (AK9232)
88 dB (Typ.) at 20 kHz Input (AK9233)
84 dB (Typ.) at 20 kHz Input (AK9234)
- 18-bit No Missing Code, INL: ± 5.0 LSB (Typ.) @ $V_{in} = -6\text{dBFS}$ (AK9232)
16-bit No Missing Code, INL: ± 1.25 LSB (Typ.) @ $V_{in} = -6\text{dBFS}$ (AK9233)
14-bit No Missing Code, INL: ± 0.75 LSB (Typ.) @ $V_{in} = -6\text{dBFS}$ (AK9234)
- Polar coordinate calculation function
- Offset/Gain Adjustment Function
- Power Consumption: 130 mW/ch ($f_s=1.1\text{MSPS}$, $V_{DD}=1.8\text{V}$, $HV_{DD}=5\text{V}$, $DRV_{DD}=3\text{V}$)
- Power Supply
VDD: 1.7 ~ 2.0 V
HVDD: 4.75 ~ 5.25 V
DRVDD: 2.7 ~ 5.25 V
- Operational Temperature Range: $-40 \sim 105^\circ\text{C}$
- Package: Ultra Small 24-pin QFN (4mm x 4mm)

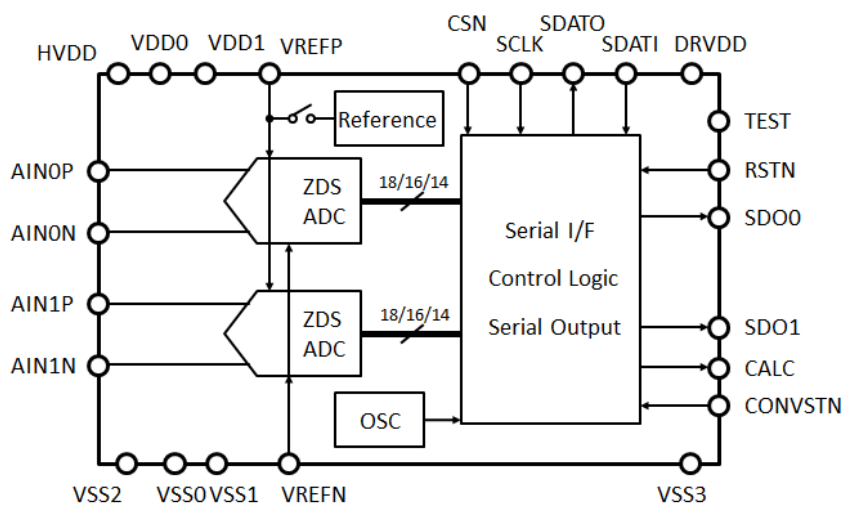


Figure 1. Block Diagram

Thank you for your access to AKM product information.

**More detail product information is available,
please contact our sales office or authorized distributors.**

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