



# AK9240

## AFE with Dual 12-Bit 1MSPS SAR ADC

### 1. General Description

The AK9240 is an Analog Front End with 12-bit 1MSPS A/D converter. It integrates a programmable gain amplifier (PGA) that is able to select the input current and the input voltage realizing to control the input range. An LED driver and auto power control circuits are also integrated, making the device suitable for compact optical encoders. The AK9240 is housed in a space-saving 20-pin QFN package.

### 2. Features

- Simultaneous Sampling 12-bit SAR A/D Converter
- Sampling Rate: 1MSPS
- Differential Inputs
- Current Input or Voltage Input Selectable
- PGA Function
- LED driver
- Automatic Power Control Circuit
- Low Pass Filter
- S/(N+D): 71dB (Typ.) at 10kHz Input.
- INL:  $\pm 1.25$ LSB (Max.)
- DNL:  $\pm 1.0$ LSB (Max.)
- Power Consumption: 17 mA ( $f_s = 1$ MSPS)
- Power Supply: 2.7 ~ 5.5V
- Operational Temperature Range ( $T_a$ ): -40 ~ 105°C
- Small Package: 20-pin QFN (3mm x 3mm)

**3. Block Diagram**

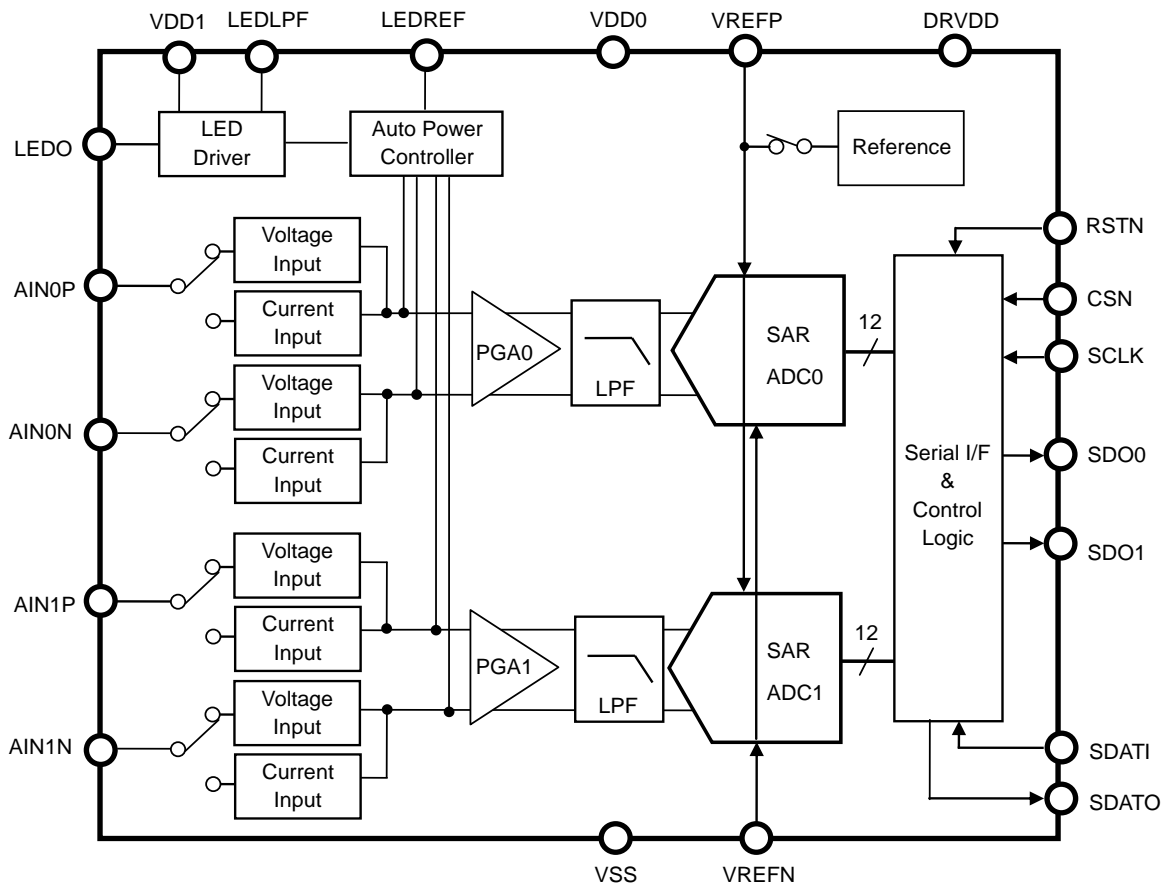
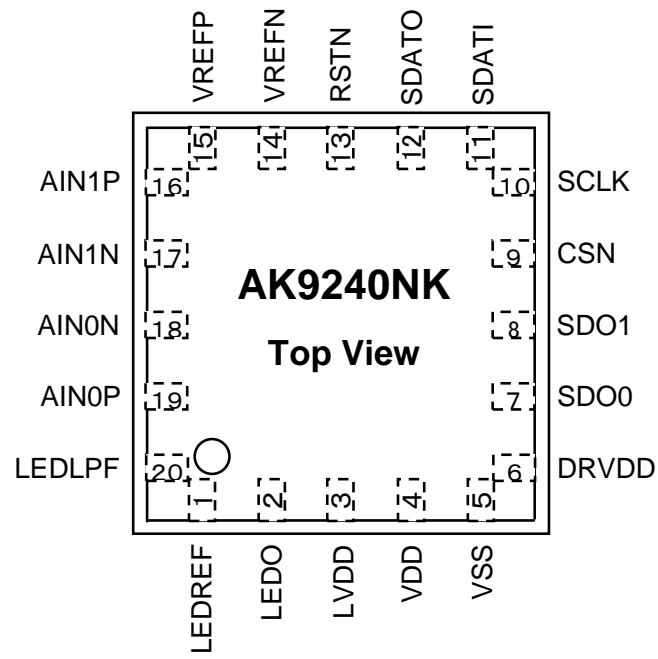
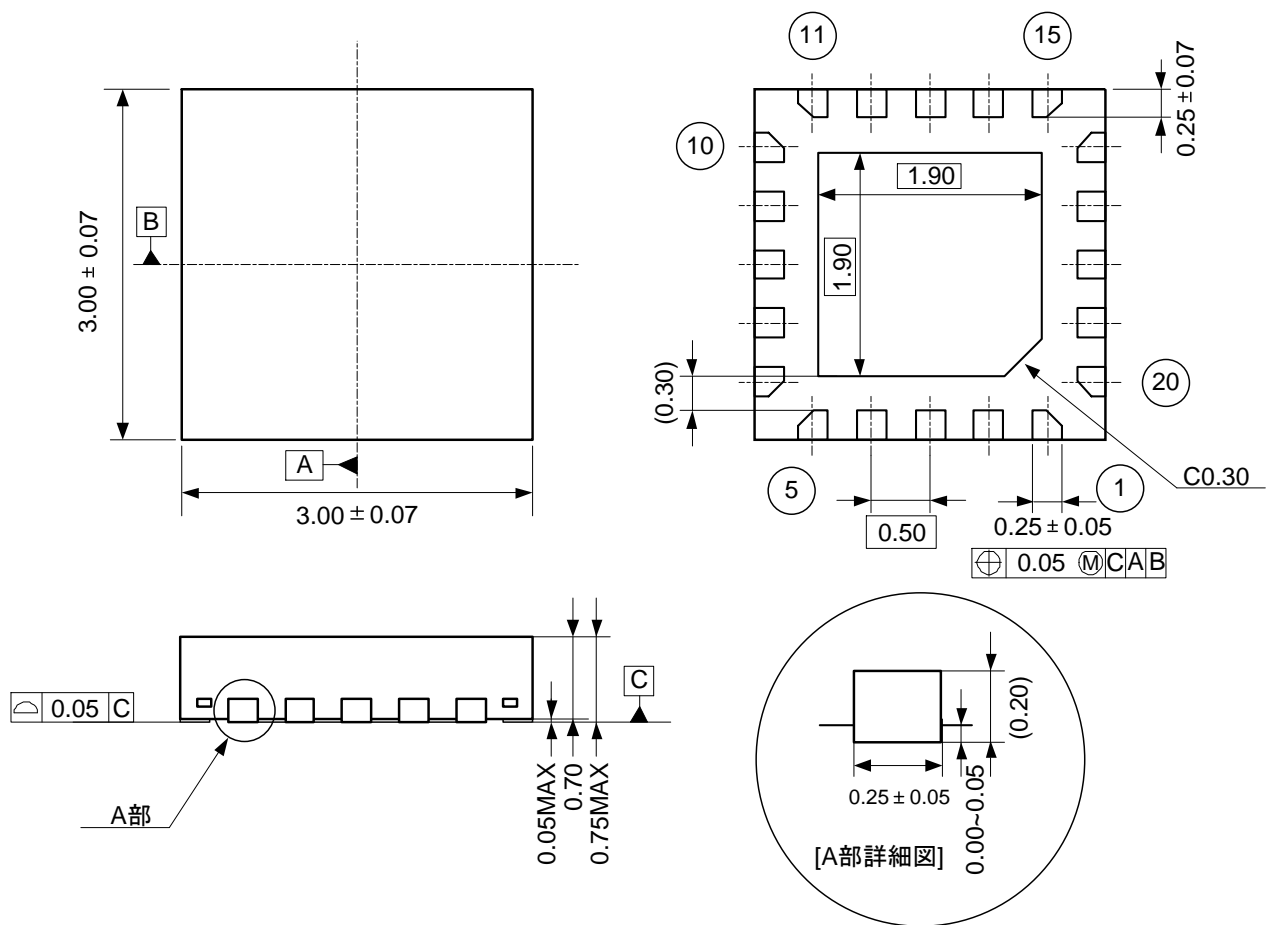


Figure 1. AK9240 Block Diagram

**4. Pin Configurations**



■ Outline Dimensions



Note:

\*52. The exposed pad on the bottom surface of the package must be open or connected to the ground.

**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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