

Product Document



Product Brief

PB001000

AS6221

Digital Temperature Sensor

1 General Description

The AS6221 is a highly accurate digital temperature sensor with an accuracy of up to $\pm 0.09\text{ }^{\circ}\text{C}$, which is ideal for healthcare applications, wearables and devices requiring high performance thermal information. The AS6221 is a complete digital sensor system, requires no calibration or linearization. It provides measurement outputs via a standard I²C interface. The ultra-small size of the sensor (WLCSP 1.5 mm x 1.0 mm) enables accurate body/skin temperature measurements in health and lifestyle monitoring products. In addition to the high accuracy and the small form factor, the AS6221 offers very low power consumption, for example measuring with 4samples/s, the current consumption is only 6 μA . An integrated alert functionality triggers an interrupt to the micro controller when a temperature threshold is exceeded. The temperature threshold for the alert function can be adjusted in a device register.

2 Key Features

Figure 1:
Added Value of Using AS6221

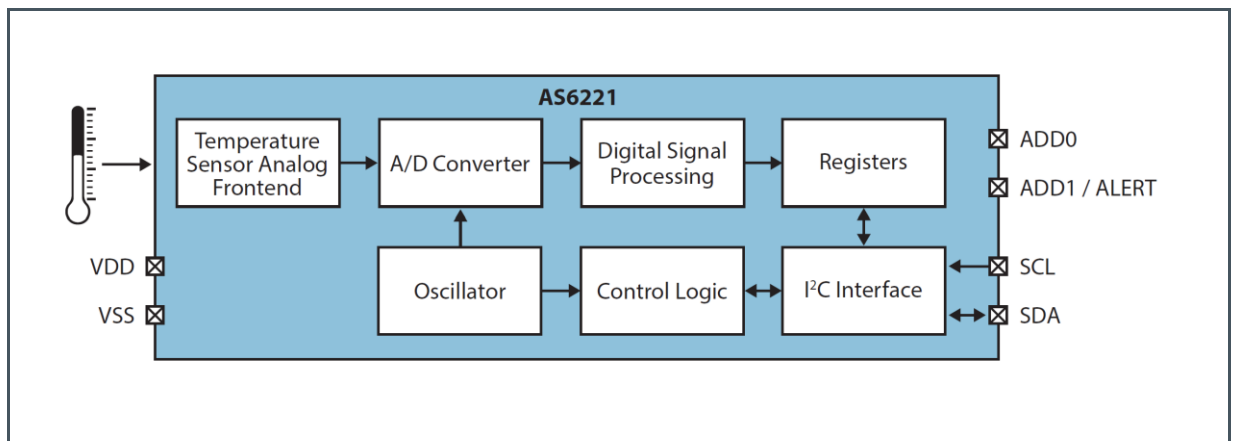
| Benefits | Features |
|--|---|
| Best-in-class accuracy | High temperature accuracy of $\pm 0.09\text{ }^{\circ}\text{C}$ |
| Space saving with ultra-small integration size | Small form factor WLCSP (1.5 mm x 1.0 mm) |
| Superior power efficiency for better battery endurance | Ultra-low-power consumption: 6 μA @ 4 samples/s (typ.) |
| Easy-to-use solution for fast go-to-market | No calibration or linearization required |

3 Applications

- Fitness and Health Trackers
- Medical Analysis Devices
- Wearables
- Cameras
- HVAC and Thermostat Control
- Cold Chain Monitoring
- Industrial Automation
- PTC Replacement

4 Block Diagram

Figure 2:
Functional Blocks of AS6221



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