

Analog Front End IC, built-in programmable amplifier

MM3829

Outline

The MM3829 is an analog front-end IC that converts the analog signal output from the resistance bridge sensor into a digital signal, performs digital signal processing such as filtering and correction, and outputs it to a host such as a subsequent microcomputer by digital communication (I2C). Since it has a built-in 24-bit $\Delta\Sigma$ ADC and an input for a capacitive sensor, it can support a wide variety of sensors. In addition, it has a built-in 1.8V LDO and is designed so that the sensor is not affected by fluctuations in the power supply voltage.

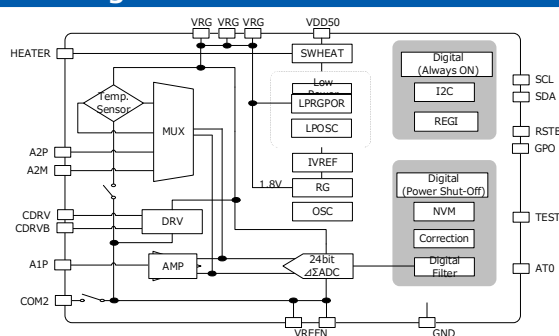
Applications

Products that amplify and digitally convert minute output signals from various sensors. Pressure sensor, Air flow sensor, Strain gauge, humidity and temperature meter etc.

Features

- ① Built-in sensor drive power supply (1.8V)
- ② Equipped with high-precision 24-bit $\Delta\Sigma$ ADC
- ③ Built-in temperature sensor
- ④ Corrects the temperature dependence of offset and gain
- ⑤ Optimal resolution or data output rate can be selected.
- ⑥ Standby power of the set is reduced with the ON / OFF switch for the external sensor.
- ⑦ Communication I / F: I2C Fast Mode.
- ⑧ Built-in oscillator, no external oscillation circuit required
- ⑨ When one sensor connected, the sensor output can be corrected inside the IC.
- ⑩ When two sensors connected, the data required for correction by the subsequent microcomputer is output.

Block Diagram



Package

Package : TBD

Specification

項目	仕様	単位
Operation temperature range	-40 to 105	℃
Operation supply voltage range	2.2V to 5.5	V
Current consumption	0.92	mA
Current consumption at Standby	0.95	μA
VRG voltage	1.8	V
Capacitance to voltage gain	0.72	V/pF
ADC OSR setting range	256 to 2048	—
Input conversion noise voltage	3.19 to 30.9	μAVrms
AD conversion time	0.39 to 3.13	ms

Application circuit

