

# Analog Front End IC

**MM3609**

## DESCRIPTION

This IC is analog front end IC which converts analog signal output from the sensor to digital signal, conducts digital signal processing and outputs to the host such as microcontroller etc. with digital transmission. It responds to a wide variety of sensors.

## FEATURES

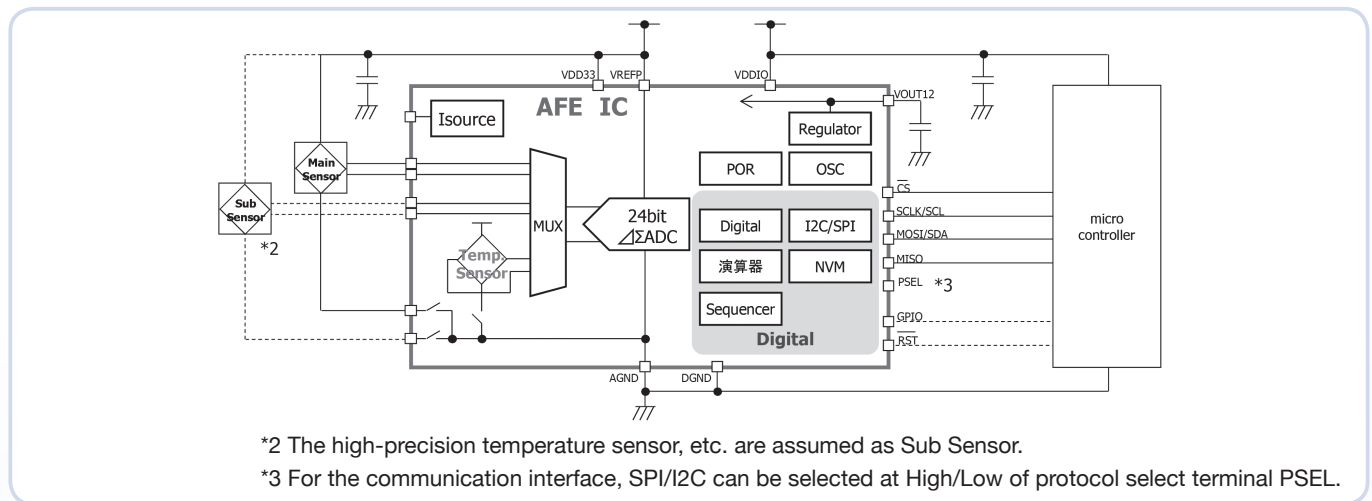
- 1.It has a 24bit  $\Delta\Sigma$ ADC with a wide dynamic range.
- 2.The correction factor needed for correcting sensor can be stored in the non-volatile memory (NVM) inside IC.
- 3.The sensor correction sequence can be stored in the memory and correction can be completed in IC.
- 4.The communication interface can be chosen from I2C Hs (max. 3.4Mbps) or SPI 4wire (max. 5Mbps).
- 5.It operates from the low voltage of 1.71V.
- 6.It has a temperature sensor and is able to correct the temperature characteristics of the exterior sensor.
- 7.An effective resolution or data output rate which is the most appropriate to the user can be selected.
- 8.It has a built-in oscillator and an external oscillator circuit is not needed.
- 9.There are two modes of sensor driving system – constant current and constant voltage.
- 10.The standby electricity of the set has been reduced significantly by the ON/OFF switch for external sensor and standby current of TYP. 0.1uA

## KEY SPECIFICATIONS

- Operation supply voltage range ... VDD33 1.71V to 3.6V (Typ. 3.3V)  
VDDIO 1.14V to 3.6V (Typ. 3.3V)
- Operation temperature range..... -40°C to +85°C
- Consumption current..... Typ. 540μA  
Typ. 650μA \*with Temp. Sensor
- Standby current..... Typ. 0.1μA, Max. 1μA
- Effective resolution ..... Up to 22bits \*1
- Integral non-linearity INL ..... Typ. ±30 ppm of FSR
- Input conversion noise voltage..... 1.27μVrms
- Data output rate..... 20Hz to 2,560Hz

\*1 Data output rate=20Hz, VDD33=VREFP=3.3V, Ta=25°C

## BLOCK DIAGRAM & TYPICAL APPLICATION CIRCUIT



## APPLICATION

- (1) Gauge pressure sensor/Absolute pressure sensor
- (2) Flow sensor
- (3) Strain gauge

## PACKAGE

PLP-24 (3.0mm□)

## SUPPORT

- Possible to provide an evaluation board with memory write function.
- Possible to provide application for creating sensor correction sequence.
- Possible to provide sample firmware for external microcontroller (negotiable).