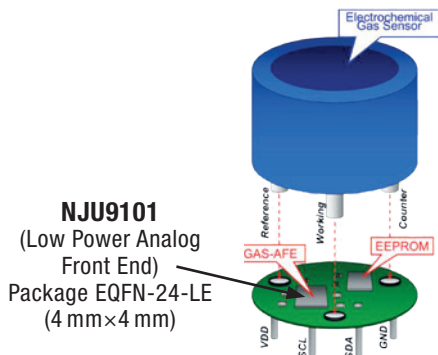


# LOW POWER ANALOG FRONT END NJU9101 (SMART SENSOR MODULE)



## FEATURES

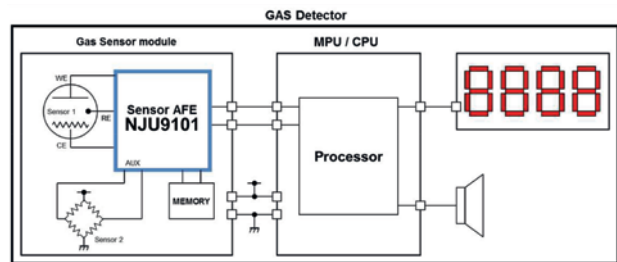
- » Supply Voltage +2.4V to +3.6V
- » **Low Current Consumption** 4µA (OPA, OPB), 150µA (ADC)
- » Low Offset Voltage amplifier (OPA, OPB) 300µV max.
- » Low Noise amplifier (OPA, OPB) 1.3µVpp typ (0.1~10 Hz)
- » RF immunity amplifier (OPA, OPB)
- » Programmable Cell Bias Volt. OPA: 0.3V~1.7V (Total 5 steps)  
OPB: 0.25V~1.75V (50 mV steps)
- » Programmable Gain Pre-Amplifier X1, X2, X4, X8
- » High resolution Programmable Gain ADC 16bit (NFB≈16bit)
- » System Calibration for offset & gain drift
- » **Control external EEPROM as a Master device**
- » Built-in Temperature Sensor
- » **Auxiliary Input for additional Sensor**
- » SPDT Analog Switch 10Ω typ.
- » I<sup>2</sup>C Compatible Bus interface (F/S-mode)
- » I<sup>2</sup>C 3 bits selectable slave address (multi-gas detection)

The **NJU9101** is a Low Power Analog Front End IC for use in micro-power sensing applications, especially electrochemical sensors. It provides a complete signal processing solution between sensor and micro-processor as smart-sensor module. NJU9101 has 2 channel low power operational amplifiers. These amplifiers provide potentiostat and trans-impedance-amplifier to constitute gas sensor systems. The NJU9101 has calibration circuit by using output data of built-in high precision ADC. It is suitable for temperature variation of sensor. NJU9101 operates over voltage range of 2.4V to 3.6V. Total average current consumption can be less than 10µA.

## APPLICATIONS

- » Gas monitor
- » Blood glucose meter
- » Current sensing systems, photodiode sensing systems
- » Low power and portable equipment

## NJU9101 SOLUTION



## APPLICATION BLOCK DIAGRAM

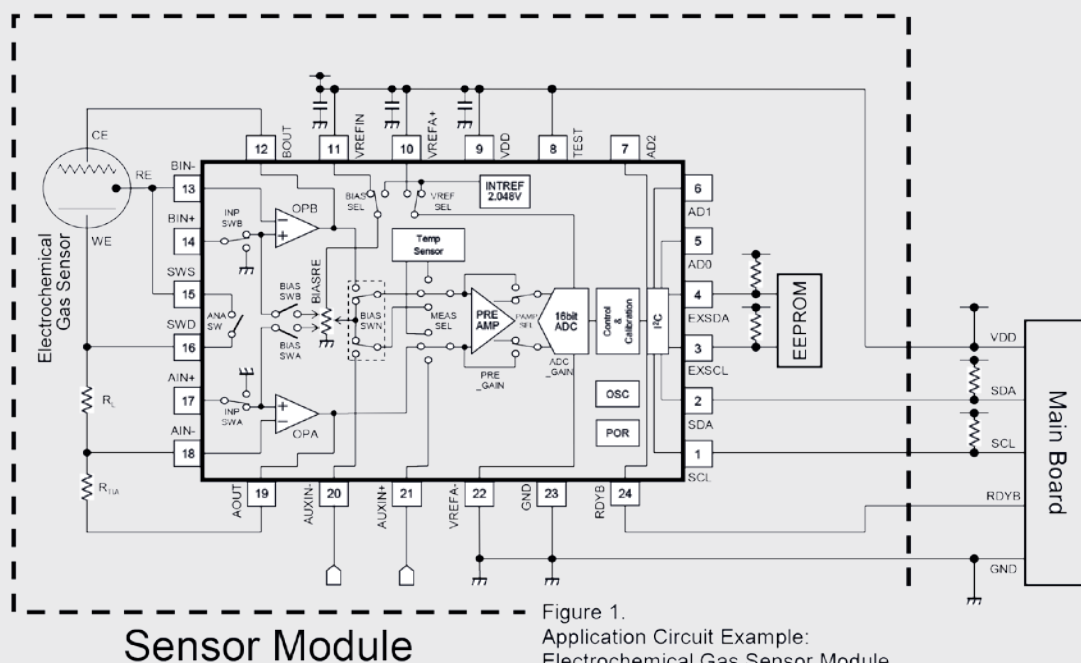


Figure 1.  
Application Circuit Example:  
Electrochemical Gas Sensor Module