
SY6303 Battery Gas Gauge for with Current Sensing

1 Description

The SY6303 is an ultra-low power battery gauge with current sensing.

The IC integrates a flash-programmable 32-bit CPU, allowing both battery parameters and firmware to be upgraded online via I2C.

It provides precision measurements of current, voltage and temperature. It supports both high-side and low-side current sensing. The temperature of the battery pack is measured using an internal temperature sensor or an external thermistor.

The SY6303 tracks battery operating conditions and performs an algorithm to calculate the SOC (state of charge). Accurate current sensing is not essential for this algorithm.

The SY6303 is available in packages of 2.5mm x 4.0mm DFN12.

2 Applications

POS

Smart watch

Portable devices and accessory

3 Features

- Precision Measurements with 16-bit ADC
- Low power consumption
 - Typical shutdown current: 0.5μA
 - Typical normal current: 5μA
- Low-voltage (2.1V) operation
- Algorithm with patented technology
 - Temperature and load compensation
 - Smoothing feature to avoid SOC jumps
 - Support batteries with different chemistries
 - Report state of health
- Flash-programmable 32-bit MCU
 - Supports parameter and FW upgrade
 - Diagnostic lifetime data monitor and black box recorder
- Authentication for battery pack security
- Supports user-programmable data
- Unique identification number
- Active high or low pulse or level interrupt pin

4 Typical Application Circuit

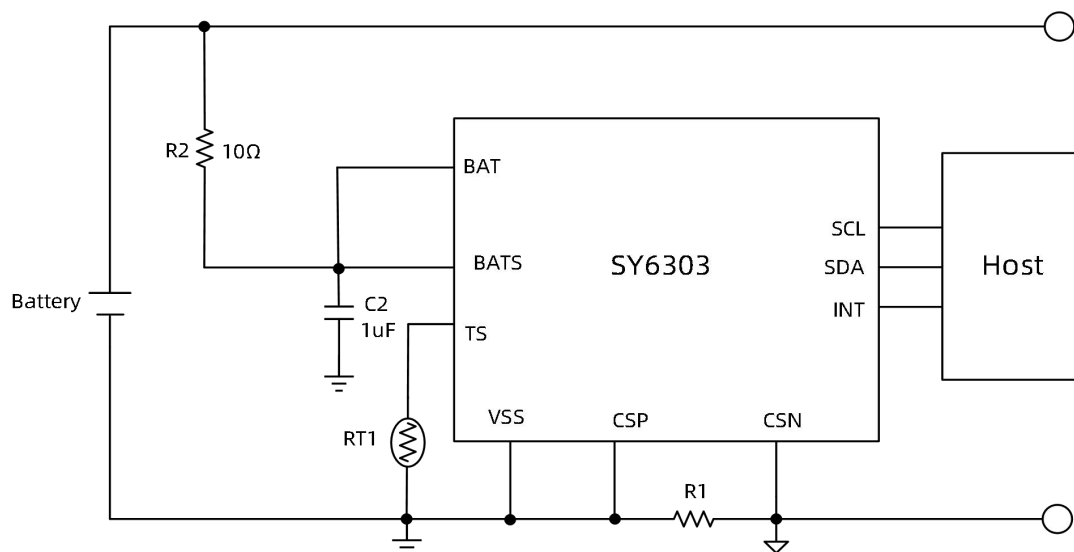


Figure 4- 1. Typical Application for Single Cell

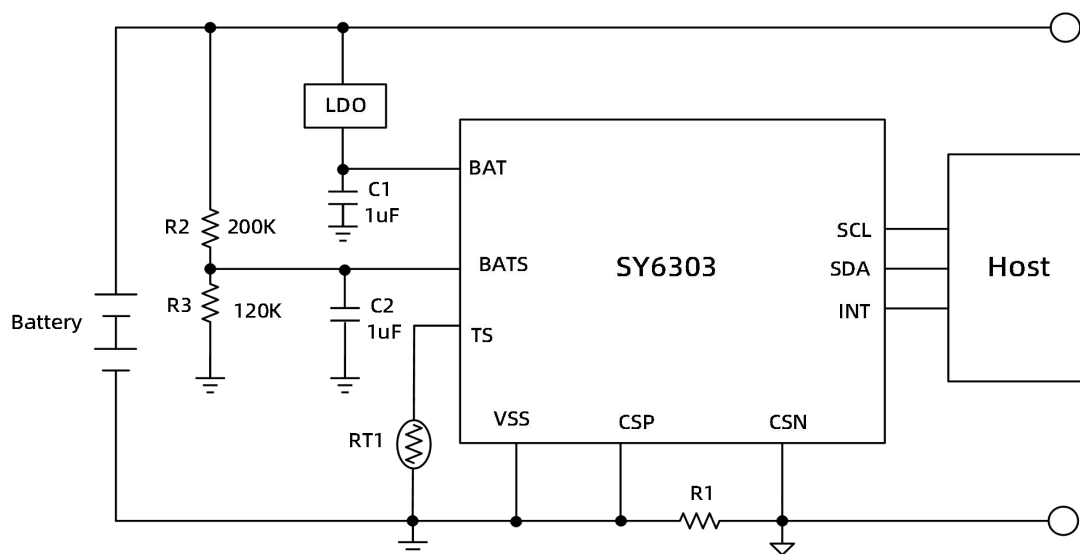


Figure 4- 2. Typical Application for 2-Cell