

General Description

SY6202 is a low-power and high-precision switch charger of NVDC architecture, It integrates charge, boost converter and protections, optimized for quick charge applications of small-capacity lithium batteries, charging current up to 1.5A and charging termination current down to 10mA. The standby current is less than 13uA and ship mode current is less than 3uA.

The charging profile can be configured by I2C. The-step of charge voltage regulation is 10mV and the minimum step of charge current is 20mA.

Several safety features are—including JEITA profile, safety timer, and over-voltage/over-current/ under-voltage protection.

The boost converter which output maximum 1.2 A. The quiescent current of boost mode is less than 500uA and it has high efficiency at light load.

SY6202 package is WLCSP20-2mm*2mm with a 0.4mm pitch.

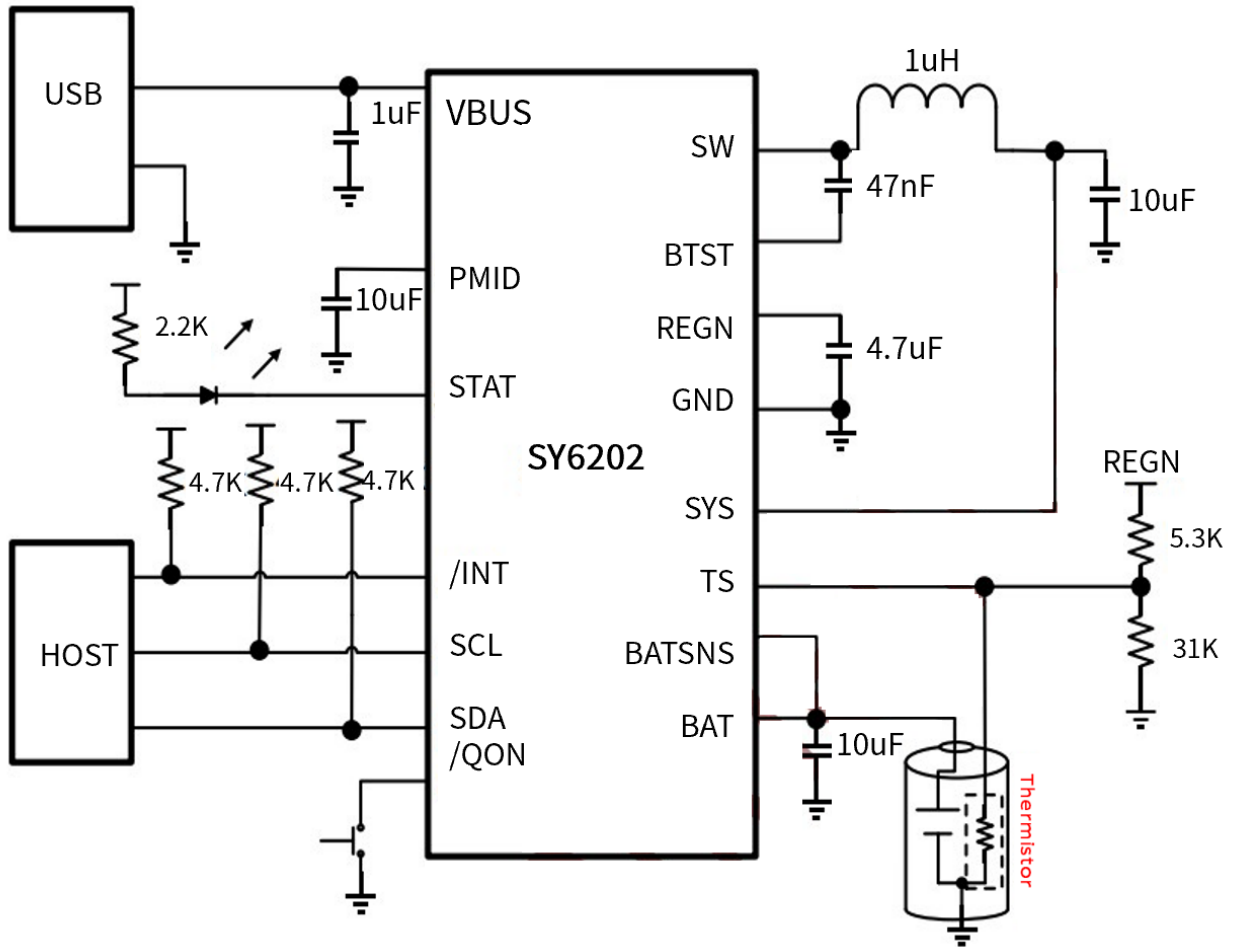
Applications

- ◆ Wireless headset and charging case
- ◆ smart watch
- ◆ portable devices

Features

- ◆ High-accurate switch charger
- 1.5MHz switch frequency with 1uH inductor
- $\pm 0.5\%$ charge voltage regulation (10mV/step adjustable)
- 5% charge current regulation@1.5A
- Low termination with high accuracy 20mA \pm 2mA
- Charging current-up to 2A, 92%-efficiency at 1A
- Programmable top-off timer
- BATFET R_{ON} 30m Ω
- ◆ Boost mode with low quiescent current
PFM mode-500uA quiescent current
- 1.2A output current maximum, and four step output voltage
- ◆ NVDC path management
- Programmable input current limit (IINDPM) and input voltage limit (VINDPM)
- ◆ 10.5uA leakage current in standby mode and 1.2uA leakage current in ship mode
- ◆ protections
input over-voltage protection
- Battery over-current/over-voltage/ under-voltage protections
- Boost output over-voltage/over-current protections
- Thermal regulation and thermal shutdown
- ◆ Flexible reset functions
- System reset by VBUS insertion, watchdog or push-button

Typical Application Circuit



Typical Application Circuit Diagram

(Charging current: 1.5 A; battery temperature range: charging 0°C ~ 60°C; discharging -20°C ~ 65°C)

(Note: If NTC function is used, a NTC resistor with 1% accuracy, 10K resistance and $\beta = 3435$ must be selected.)