

2A Ultra-Low Power High-Speed Load Switch With Reverse Current Protection

1 Description

The SY5702 is an ultra-low quiescent current (I_Q : 250nA, I_{SD} : 10nA) load switch with reverse current protection and high switching speed. It integrates a 42m Ω (typ.) N-channel MOSFET, which can work with input voltage range of 1.2V to 5.5V and load 2A continuous current.

The EN pin leakage current is only 5nA due to the smart pull-down resistor. It supports the 1.2V I/O application. The EN pin has an internal 1M Ω pull-down resistor that allows to float this pin. In order to reduce leakage current, the resistor will be disconnected when the voltage of EN pin is higher than V_{IH} .

The SY5702 integrates output slew rate control to avoid inrush current while controlling short turn-on time. The typical turn-on time of switch is 100 μ S. The SY5702 is available in FOCSP-0.76mm x 0.76mm-4B and DFN-1mm x 1mm-4L package.

2 Features

- Input voltage range: 1.2V~5.5V
- Low output on resistor:
 - $R_{ON} = 40m\Omega$ at $V_{IN} = 5.5V$
 - $R_{ON} = 42m\Omega$ at $V_{IN} = 3.3V$
 - $R_{ON} = 42m\Omega$ at $V_{IN} = 1.8V$
 - $R_{ON} = 43m\Omega$ at $V_{IN} = 1.2V$
- Maximum continuous current: 2A
- I_Q : 250nA, I_{SD} : 10nA
- Switch turn-on time: 100 μ S
- Quick output discharge (QOD)
- Reverse current protection (RCP)
- Soft start to restrain inrush current
- Smart pull-down resistor
- Available in FOCSP-0.76mm x 0.76mm-4B pitch 0.4mm and DFN-1mm x 1mm-4L package.

3 Applications

Smart phone, Mobile phone

Wearable device

Bluetooth headset

E-cigarette

4 Typical Application Circuit

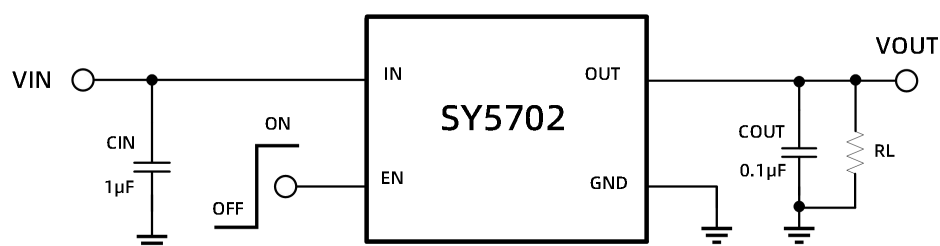


Figure 4- 1. Typical Application Circuit