

General Description

MP5046 is a single-chip IC specially designed for power bank, highly integrating switch charger, LED battery display cell and synchronous boost output, with charging current up to 2A and synchronous boost output up to 2.4A. It also provides discharge path management, battery display, torch, greatly simplifying peripheral circuits and components, and providing the simplest low-cost solution for power bank applications such as large-capacity lithium battery (lithium ion or lithium polymer).

MP5046 is available in a ESOP8 package.

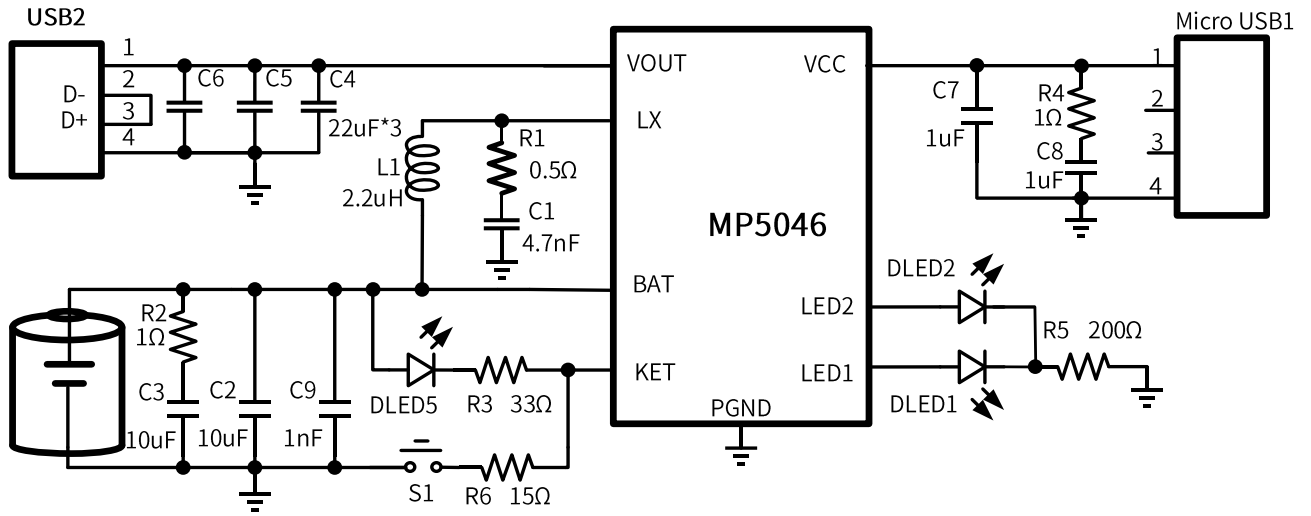
Applications

- ◆ Standby power mobile devices such as mobile phones, tablet PCs, GPS, and electric tools

Features

- ◆ Switch charger, 2A default charging current
- ◆ 90% discharging efficiency @2A
- ◆ Switch frequency for charger: 1MHz
- ◆ Charging in three phases: trickle current mode, constant current mode and constant voltage mode
- ◆ Adaptive adapter for adjusting charging current
- ◆ Adjustable charging current based on temperature (automatically decrease with the increase of temperature)
- ◆ C/10 charge termination and automatic recharging
- ◆ Preset 4.2V (MP5046)/4.35V (MP5047) floating charge voltage with $\pm 1\%$ accuracy
- ◆ Integrated charging over-voltage and battery over-temperature protections
- ◆ 5.1V synchronous boost output
- ◆ Switch frequency for discharger: 500KHz
- ◆ 94% discharging efficiency
- ◆ Automatic load identification and automatic shutdown at light load
- ◆ Original temperature management technology for boost
- ◆ Over-current, short-circuit, over-voltage and over-temperature protections of discharging module
- ◆ 2 LEDs display to indicate the battery fuel gauge, charge/discharge and abnormality
- ◆ Clicking KEY to start discharge and long press to turn on/off the torch
- ◆ Charging-discharging path management, discharge first

Typical Application Circuit (5.1V/2.5A)



Application Circuit of MP5046 with KEY and Torch