



# NX9812 High efficiency, 5V3.4A, Integrated TYPE C and Smart USB Protocol, Power Bank SOC

## 1 Description

NX9812 is a highly integrated IC with power management function supporting TYPE-C interface, which can support single-cell battery applications of different voltage.

NX9812 integrates ultra-low power MOSFETs and isolation tube, can support 5V3A high efficiency switch charging, 5V 3.4A high efficiency synchronous boost output discharge. 3A discharge efficiency is up to 96%.

NX9812 integrates the TYPE-C protocol, supports DRP charge and discharge. The chip also integrates 3 sets of independent DPDM to support smart USB protocol (compatible with DCP recognition function, compatible with BC1.2, Apple and Samsung mode). TYPE-C interface can simultaneously support CC handshake and DPDM handshake. The charging port can automatically recognize the adapter type through DPDM and adjust the charging current through I2C. It supports dual USB-A output, independent DPDM control, and is intelligently compatible with various mobile phone devices.

NX9812 comes with power path management and supports charging and discharging at the same time.

The NX9812 has a built-in fuel gauge, so the LEDs can be flexibly configured through the MCU.

NX9812 supports charge management functions such as lithium battery trickle charging, constant current (CC) charging, constant voltage (CV) charging, charging termination and recharge. NX9812 supports multiple protection including over voltage protection (OVP), over current protection (OCP) and short circuit protection (SCP) to improve system reliability.

NX9812 is available in a 32-pin 4x4 QFN package.

## 2 Feature

- Switch charge management
  - Support 5V3A charging
  - Trickle charging, constant current charging, constant voltage charging and charging termination function
  - Support 4.2V/4.3V/4.35V/4.4V/4.5V battery with accuracy up to  $\pm 0.5\%$
- Synchronous boost discharge
  - Output current up to 3.4A, efficiency up to 96%@3A
  - Multiple output voltage
- Integrate multiple protocols
  - Integrated TYPE-C interface, support DRP and Try.SRC function
  - Charging supports DPDM detection, intelligent identification adapter
  - Discharge supports smart USB protocol, BC1.2 and Apple/Samsung mode
- Support path management
  - Integrated isolation tube, support isolation tube current limit protection
  - Provide input OVP isolation tube drive control
  - Support charge with discharge
- Other function
  - Built-in fuel gauge, showing various states
  - Adapter and phone plug detection
  - Support flashlight function
- Multiple protection
  - Battery charge over voltage, discharge under voltage, over current protection
  - Input OVP and UVP protection
  - OVP, OCP, SCP, OTP
  - NTC function

## 3 Applications

- Power Bank
- Portable Wi-Fi
- Energy Storage Equipment

## 4 Device Information

ORDER NUMBER	PACKAGE	BODY SIZE
NX9812QDER	32 pin QFN	4mm x 4mm x 0.75mm