



# NX9810E High efficiency, 5V2.1A, Integrated TYPE C and Smart USB Protocol, Power Bank SOC

## 1 Description

NX9810E is a highly integrated IC with power management function supporting TYPE-C interface, which can support single-cell battery applications of different voltage.

NX9810E integrates ultra-low power MOSFETs and isolation tube, can support 5V2A high efficiency switch charging, 5V 2.1A high efficiency synchronous boost output discharge. 2A discharge efficiency is up to 96%.

NX9810E 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 smartly. It supports dual USB-A output, independent DPDM control, and is intelligently compatible with various mobile phone devices.

NX9810E comes with power path management and supports charging and discharging at the same time.

NX9810E supports charge management functions such as lithium battery trickle charging, constant current (CC) charging, constant voltage (CV) charging, charging termination and recharge. Built-in button detection and LED power display function. When there is no load, it will automatically enter the sleep state to reduce the static current and ensure the battery consumption current below 80uA. NX9810E supports multiple protection to improve system reliability.

NX9810E is available in a 32-pin 4x4 QFN package.

## 3 Application

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

## 2 Feature

- Switch charge management
  - Support 5V2A charging
  - Trickle charging, constant current charging, constant voltage charging and charging termination function
  - Support 4.2V/4.3V/4.35V/4.4V battery with accuracy up to  $\pm 0.5\%$
- Synchronous boost discharge
  - Output current up to 2.1A, efficiency up to 97%@2A
  - Cable compensation
  - Support light current mode
- 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
- Power display
  - Support 4 LED power display
  - Support battery internal resistance compensation
- Keys
  - Support click, double - click, long - press and other key functions
- Other function
  - Adapter and phone plug detection , automatic standby, standby current is low than 80  $\mu$ A
  - 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
  - Charge timeout protection

## 4 Device Information

ORDER NUMBER	PACKAGE	BODY SIZE
NX9810EQDER	32 pin QFN	4mm x 4mm x 0.75mm