

# 1A Single-chip Li-ion and Li-POL Charge with OVP

## General Description

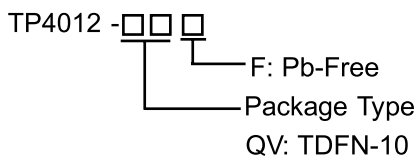
The TP4012 is a complete constant-current/constant-voltage linear charger for single cell lithium-ion batteries. Its TDFN-10 package and low external component count make the TP4012 ideally suited for portable applications. Furthermore, the TP4012 is specifically designed to work within USB power specifications. Its have a over voltage protection in input with 6V and support over zero voltages of battery can charge enable.

No external sense resistor is needed, and no blocking diode is required due to the internal MOSFET architecture. Thermal feedback regulates the charge current to limit the die temperature during high power operation or high ambient temperature. The charge voltage is fixed at 4.2V, and the charge current can be ISET rammed externally with a single resistor. The TP4012 automatically terminates the charge cycle when the charge current drops to 1/10th the ISET rammed value after the final float voltage is reached.

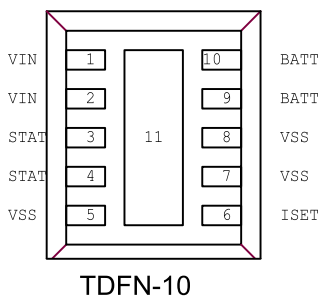
When the input supply (wall adapter or USB supply) is removed, the TP4012 automatically enters a low current state, dropping the battery drain current to less than 2µA. The TP4012 can be put into shutdown mode, reducing the supply current to 25µA.

Other features include charge current monitor, undervoltage lockout, automatic recharge and a status pin to indicate charge termination and the presence of an input voltage.

## Order Information



## Pin Configurations



## Features

- Very Low Power Dissipation
- Vin Over Voltage Protection:6V
- Short-circuit protection
- Programmable Charge Current Up to 1000mA
- No MOSFET, Sense Resistor or Blocking Diode Required
- Constant-Current/Constant-Voltage Operation with Thermal
- Regulation to Maximize Charge Rate Without Risk of Overheating
- Charges Single Cell Li-Ion Batteries Directly from USB Port
- 25µA Supply Current in Shutdown
- Time Pre-charge Conditioning With Safety Timer
- Reverse Leakage Protection Prevents Battery
- Drainage Charge Current Thermal Regulation Status Outputs for LED or System Interface
- Indicates Charge and Fault Conditions
- Optional Battery Temperature Monitoring Before and During
- Charge Automatic Sleep Mode for Low-Power
- Consumption Available in 3mm × 3mm TDFN-10 Package
- RoHS Compliant and 100% Lead (Pb)-Free

## Applications

- Portable Media Players/MP3 players
- Cellular and Smart mobile phone
- PDA/DSC
- Bluetooth Applications

## Marking Information

For marking information, contact our sales representative directly or through a TPmicro distributor located in your area.

## Typical Application Circuit

