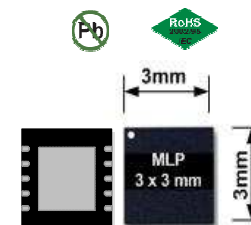
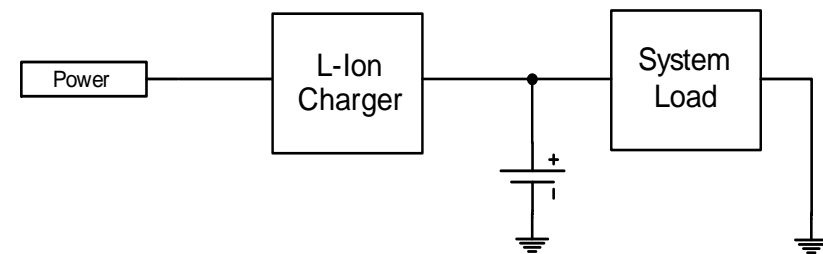
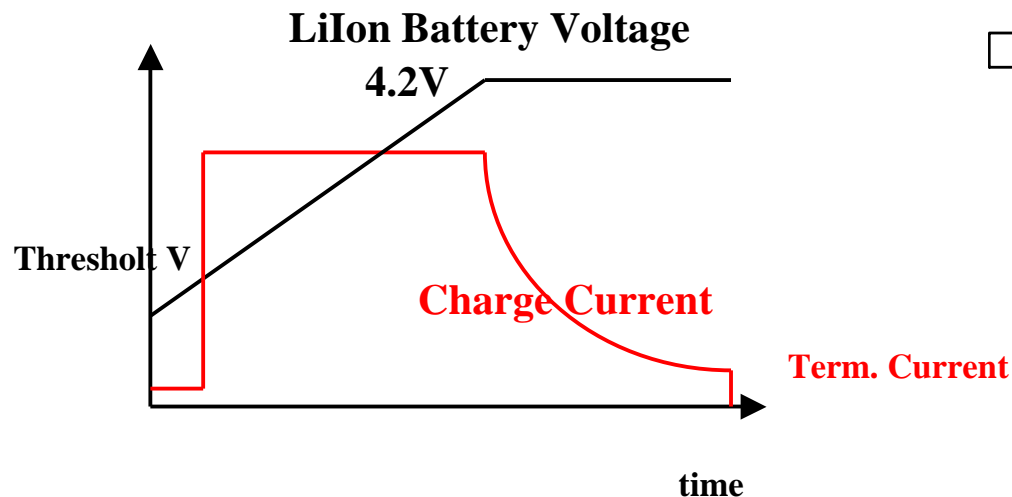
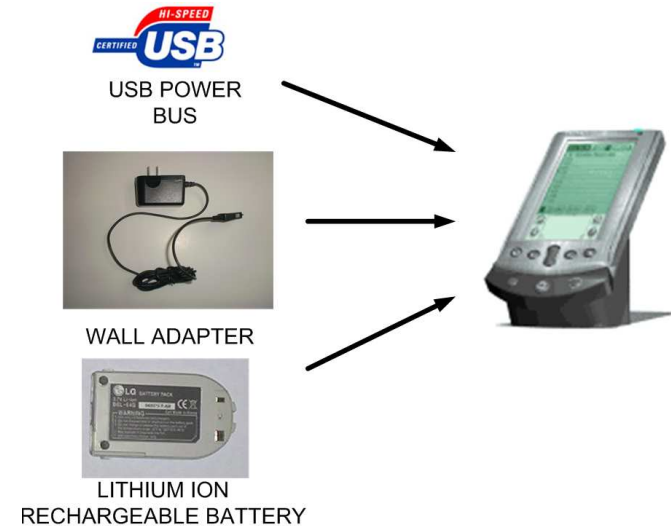


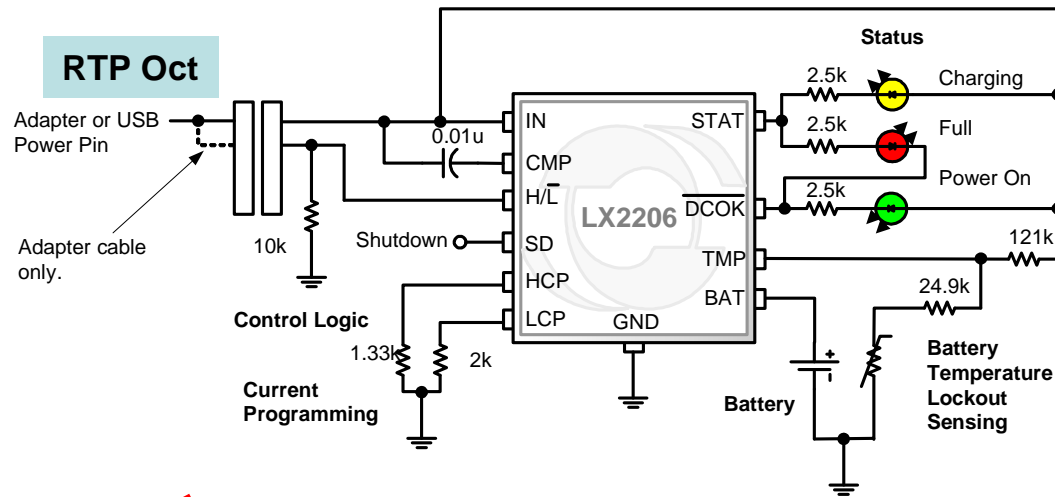
# Battery Chargers – General Features

- Precision charge voltage to fill battery, not overcharge.
- Programmable termination current
- Conditioning current for a deeply discharged battery
- Automatic top off of a nearly full battery
- Reverse current blocking
- Short circuit protection
- Thermal control loop to keep IC cool
- Small, thermally efficient MLP (QFN) package



# Battery Chargers – One Power Connector

## LX2206 - 2 Independent Charge Levels

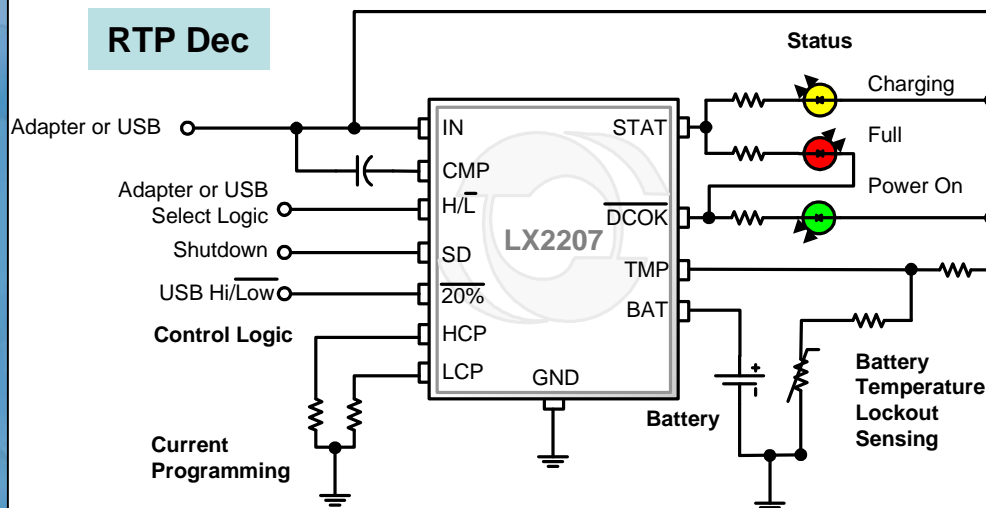


## 2<sup>nd</sup> Generation new features:

- Battery Temperature Lockout
- Input present (DCOK) indicator
- Float Voltage trimmed to 0.5%
- Supports three LEDs
- Supports USB 100mA/500mA, & suspend
- Programming Accuracy to <50mA
- Available in 4.4V version

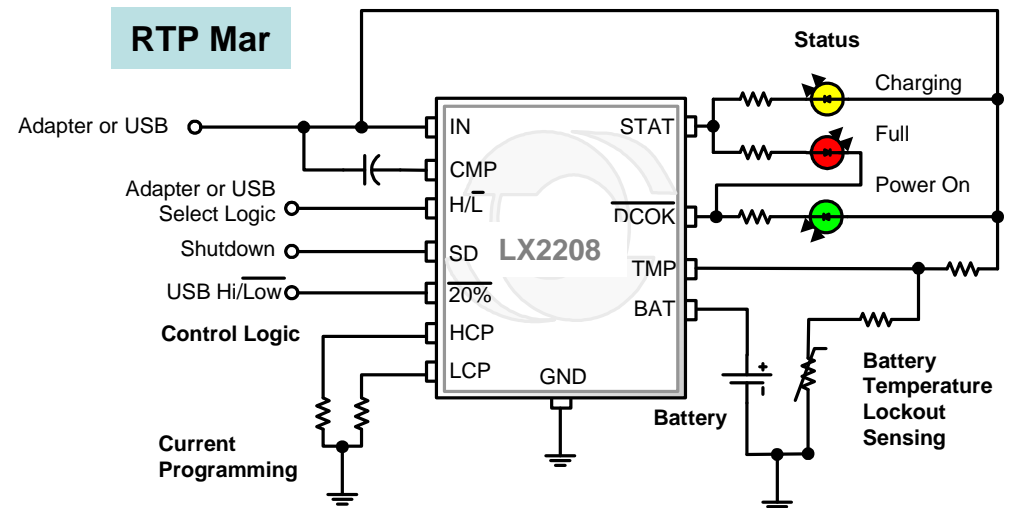
**NEW**

## LX2207 - 3 independent Charge Levels Adapter and 2 USB

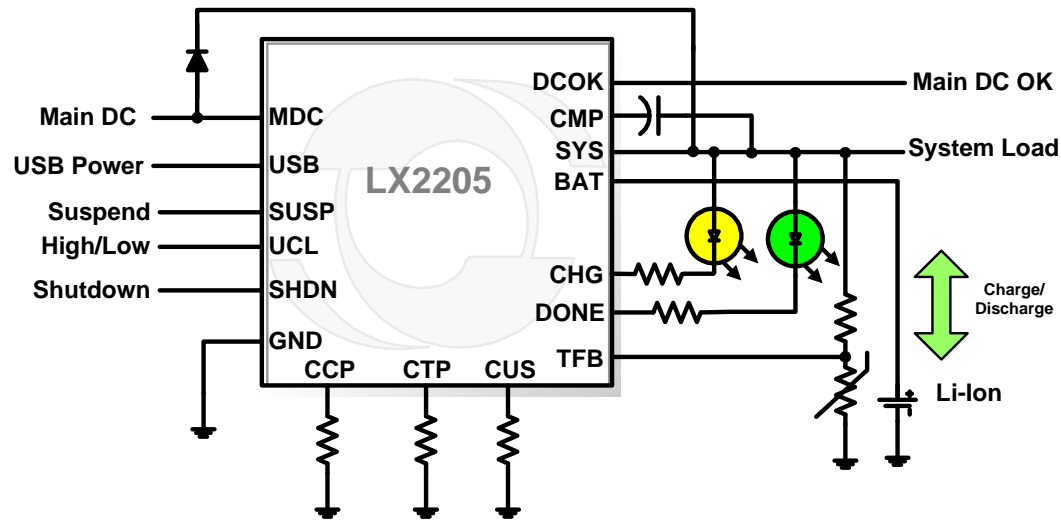


**NEW**

## LX2208 - Up to 2A charging current



# For Wall and USB on Separate Connectors



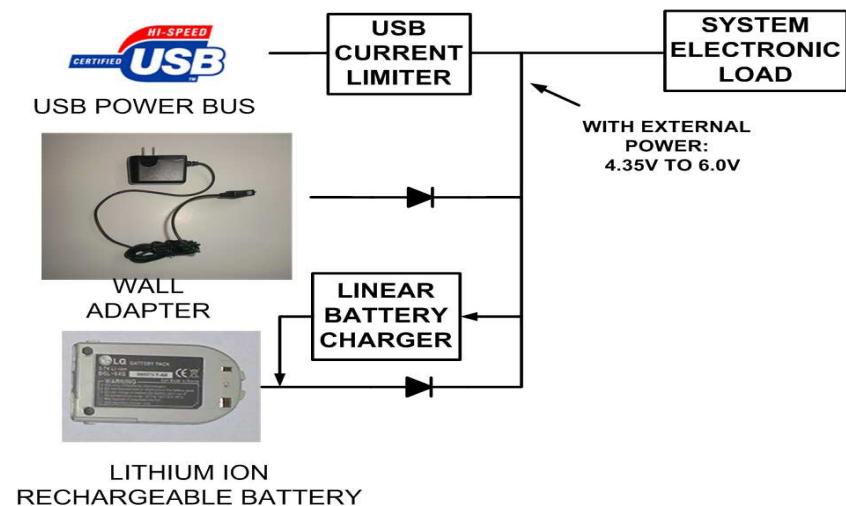
## Advantages of Isolated Topology:

- Accurate Charge Termination
- Power up with a dead battery
- Improves USB charge time

## LX2205 new features:

- USB Current Limited Input
- Battery Temperature Lockout
- Input present (DCOK) indicator, Done indicator
- Supports USB 100mA/500mA, & suspend
- Programming Accuracy to <50mA

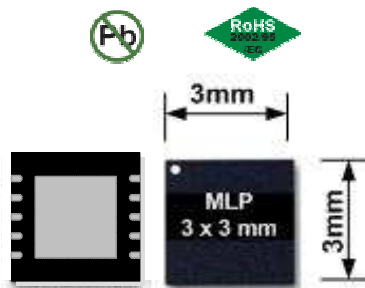
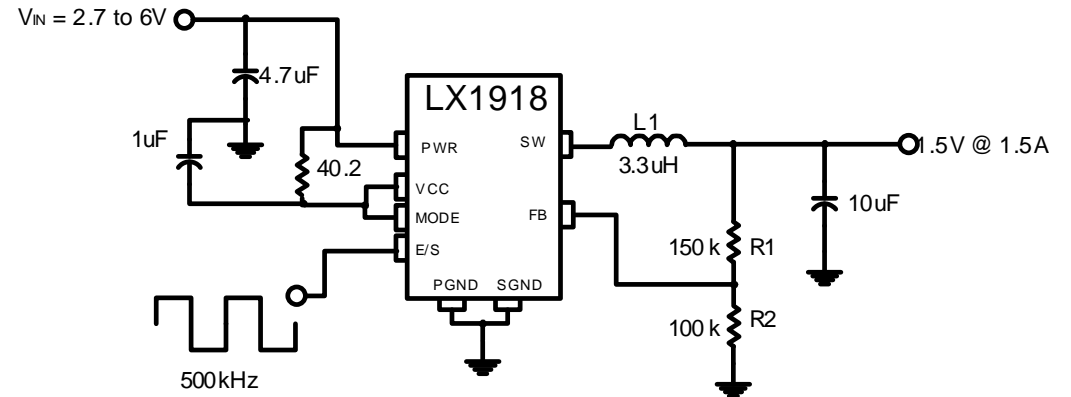
## WIRE OR-ED POWER SOURCES:



# Switch Mode Step Down Regulators

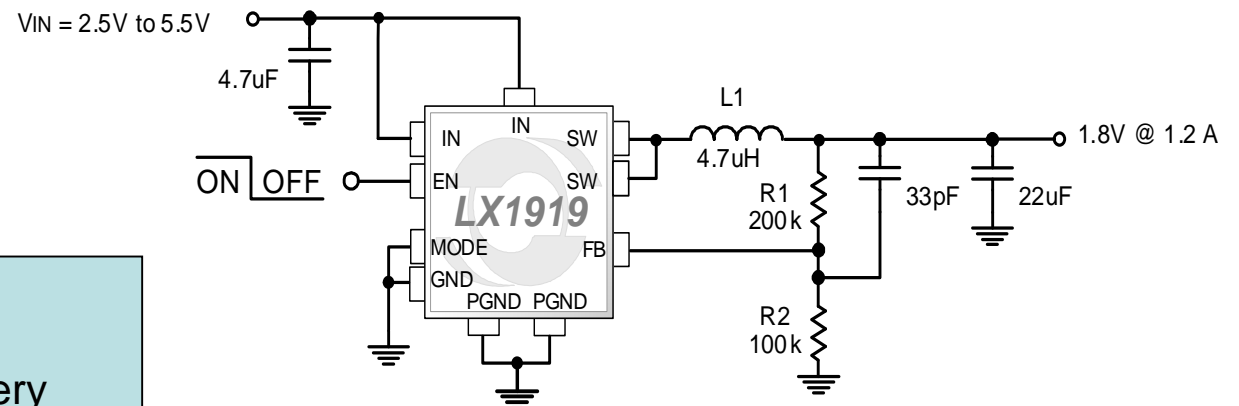
## LX1918:

- Up to 1.5A output current
- Can be synchronized to ext clock
- Good efficiency under load
- Current Mode Topology
- Does not support micro power standby modes.



## LX1919 added features:

- $I_q = 35\mu A$  in standby mode
- Can supply 3.3V from 3.5V battery
- Voltage Mode Control
- Pin compatible with TPS62040



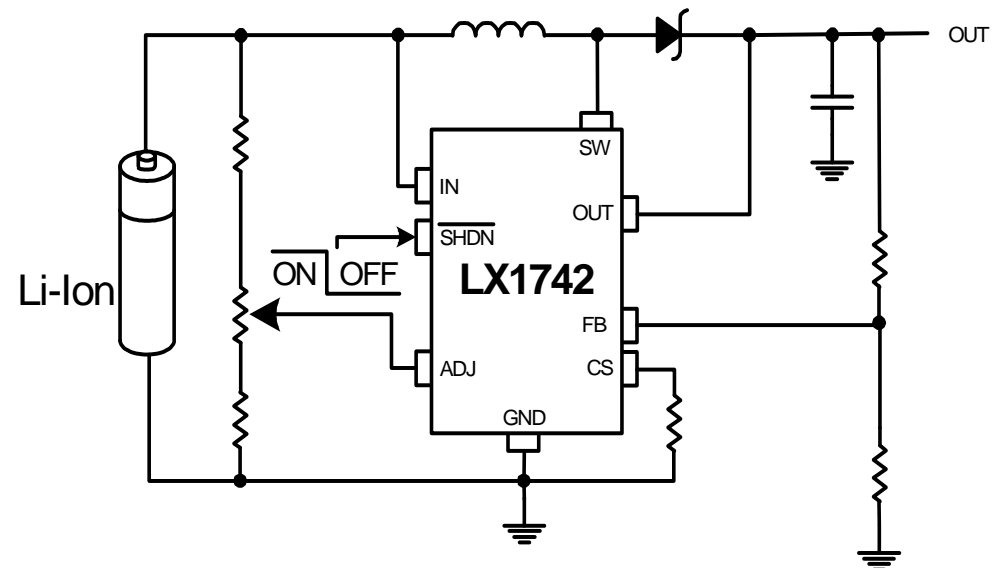
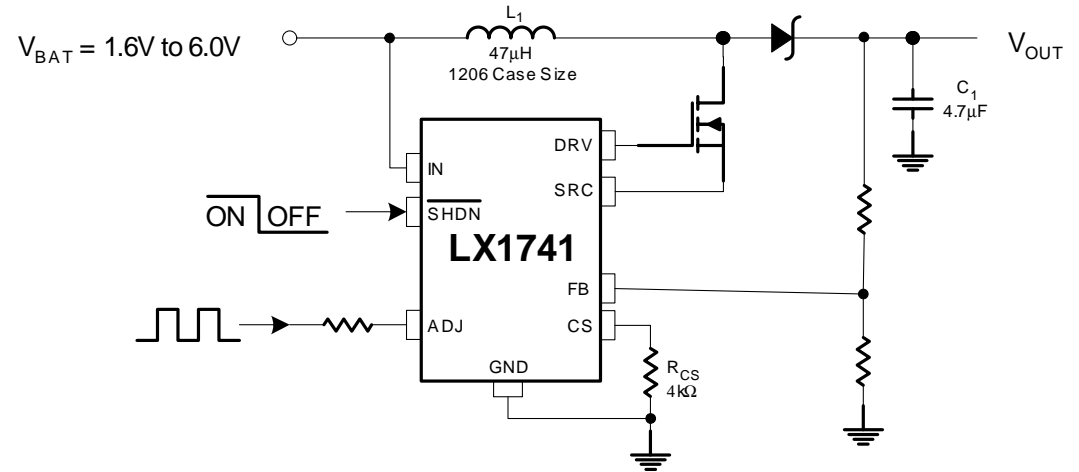
# Boost Regulators

- **FEATURES**

- Internal power MOSFET (LX1742)
- Greater Than 80% Efficiency
- Operation at 1.6V
- Scalable Peak Inductor Current Limit For Maximum Efficiency
- 70uA Ground Current (typical)
- < 0.5uA Shutdown Current
- Logic Controlled Shutdown
- Dynamic Output Voltage Adjustment Via Analog Reference Or Direct PWM Input
- Miniature 8-Pin MSOP or 3x3mm MLP Package

- **APPLICATIONS**

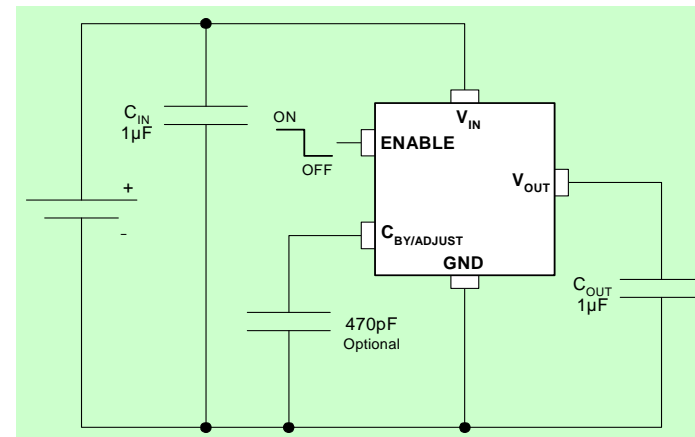
- Two-cell Alkaline Battery
- Single cell Li-Ion Battery



# Linear Regulators

- Dropout Voltage 175mV @ 100mA
- Ultra low shutdown Current
- High Initial trim accuracy 0.25%
- Standard pin-out in SOT-23-5
- Current /Over Temp protection
- Stable with ceramic capacitor

- **LX8211A 150mA LDO  
Low Drop Out Regulator**



# Battery Charger + step down converter combo device

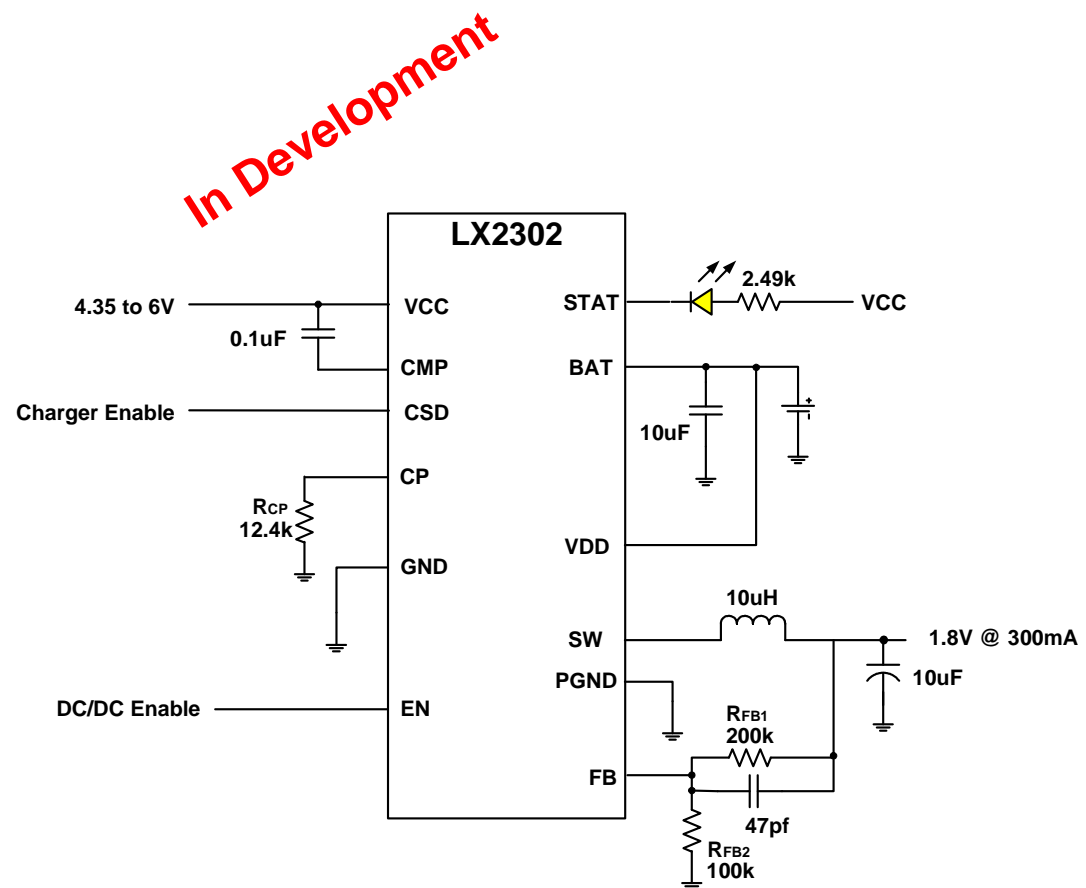
## Key Features:

### 750mA Battery Charger:

- Input voltage from 4.35 to 6V
- 0.5% float voltage tolerance
- Charging from 15mA to 750mA
- Thermal control loop
- Precision charge termination
- Charge status indicator
- Conditioning and top off modes

### 300mA Step Down DC-DC Converter:

- Input voltage range from 2.8V to 6V
- Output voltage from 0.6V to VDD
- Up to 96% efficiency
- 35uA quiescent current
- 100% duty cycle operation
- Soft start
- 1.25MHz switching frequency
- Light load burst or continuous modes
- Thermal shutdown and short circuit protect



3 x 3 mm DFN Package

# Battery Charger + step down converter combo device (Higher Power)

## Key Features:

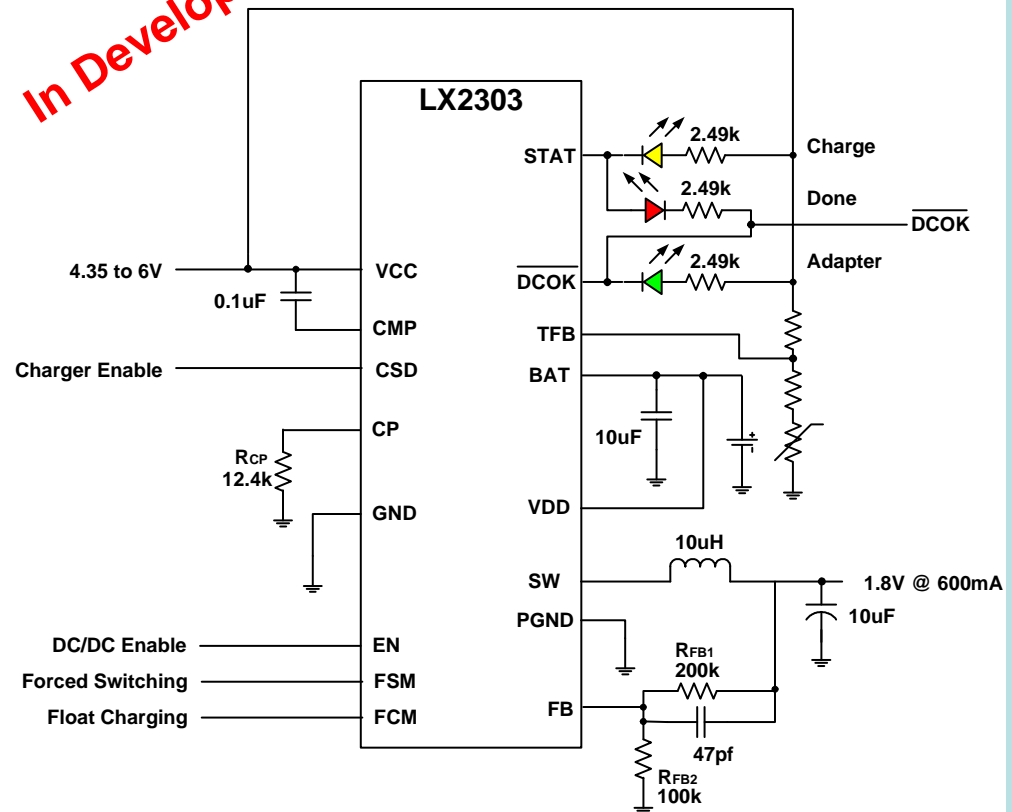
### Battery Charger

- Input voltage from 4.35 to 6V
- 0.5% float voltage tolerance
- Charging from 15mA to 1A
- Thermal control loop
- Precision charge termination
- Charging and done status indication
- Optional Indefinite float charge mode
- Adapter present indicator
- Unsafe battery temperature lockout
- Conditioning and top off modes

### DC-DC Converter

- Input voltage range from 2.5V to 6V
- Output voltage from 0.6V to VDD
- 600mA output current
- Up to 96% efficiency
- 35uA quiescent current
- 100% duty cycle operation
- Soft start
- 1.25MHz switching frequency
- Light load burst or continuous modes
- Forced continuous switching mode
- Thermal shutdown and short circuit protect

**In Development**



4 x 4 mm QFN Package



# Battery Charger + LDO combo device

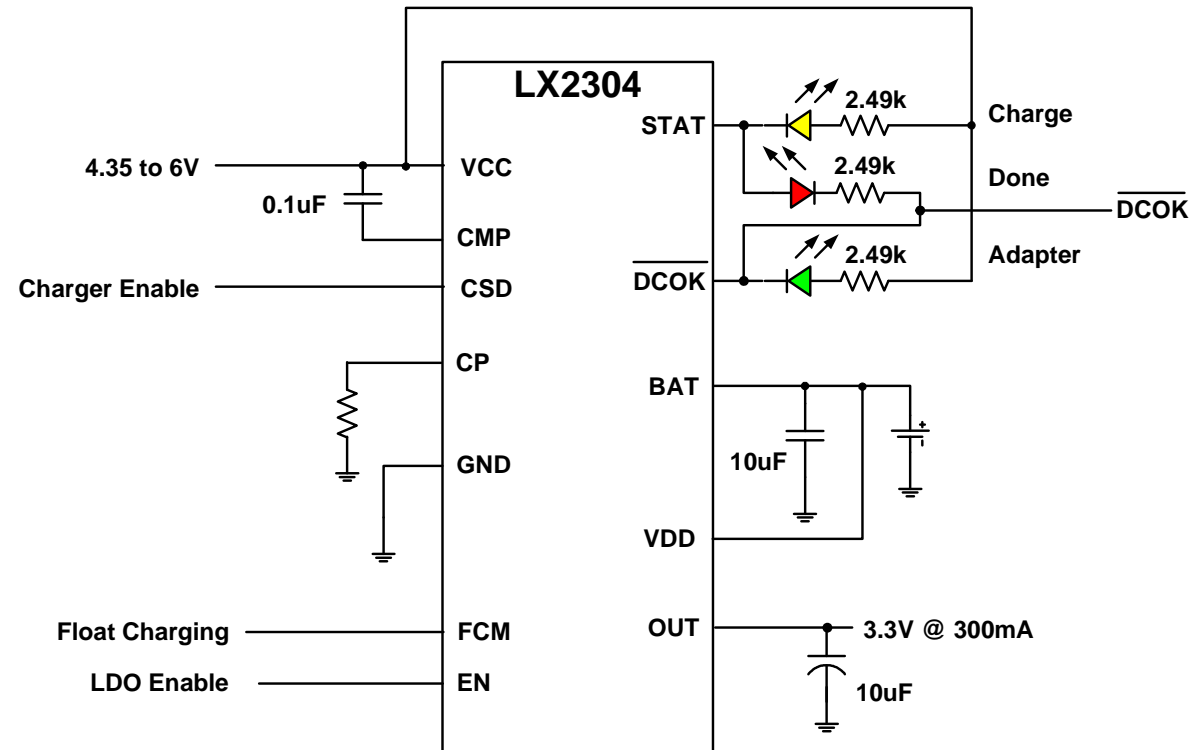
## Key Features:

### Battery Charger

- Input voltage from 4.35 to 6V
- 0.5% float voltage tolerance
- Charging from 15mA to 1A
- Thermal control loop
- Precision charge termination
- Charging and done status indication
- Optional Indefinite float charge mode
- Adapter present indicator
- Conditioning and top off modes

### LDO

- Input voltage range from 2.5V to 6V
- Fixed Output Voltage
- 300mA output current
- 35uA quiescent current
- Soft start
- Thermal shutdown and short circuit protect



3 x 3 mm DFN Package

Concept Device

# Power Management Unit multiple DC-DC & SMBus Interface

**In Development**

- **HIGHER LEVEL INTEGRATION:**
- Three 300mA Step Downs
- One 100mA LDO
- Battery Charger
  - Charging up to 1A
  - Discharge up to 1.6A
- SMBus programmable outputs
- Small 5x5mm QFN

## APPLICATIONS:

MP3 players

PMP, PMC

Smart Phones

Cost effective solution for Digital chipsets w Li-Ion power

