

#2 Cell, Iconst:200/Rs, Linear Li-Ion Battery Charger

PRELIMINARY DATASHEET

General Description

FH5411A series is a double lithium battery charge management chip. The chip includes a charge state detection, the charging process, temperature detection and so on. The chip also integrates a high-precision reference voltage module in it. It uses the SOP-8L package.

FH5411A charge contains three modes: precharge, constant current charging, constant voltage charging. Constant current charging current is five times the pre-charge current; when the voltage is lower than 6.5V into the precharge mode; when the voltage is above 6.5V into the constant current charge mode, the charging current is five times as the precharge, the charging current is determined by an external resistor.

Device Information (1)

| PART NUMBER | PACKAGE | BODY SIZE (NOM) |
|-------------|---------|-----------------|
| FH5411A | SOP-8L | 4.90mm × 3.91mm |

(1) For all available packages, see the orderable addendum at the end of the data sheet.

Features

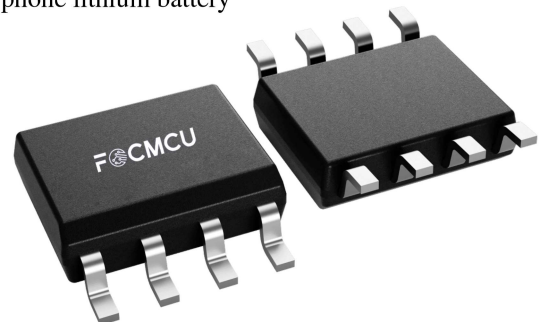
- Double lithium battery charge management
- Only need a few external components
- Pre-charge, constant current charging , constant voltage charging mode
- Temperature detection
- Two charging status
- Package type: SOP-8L

Package Information

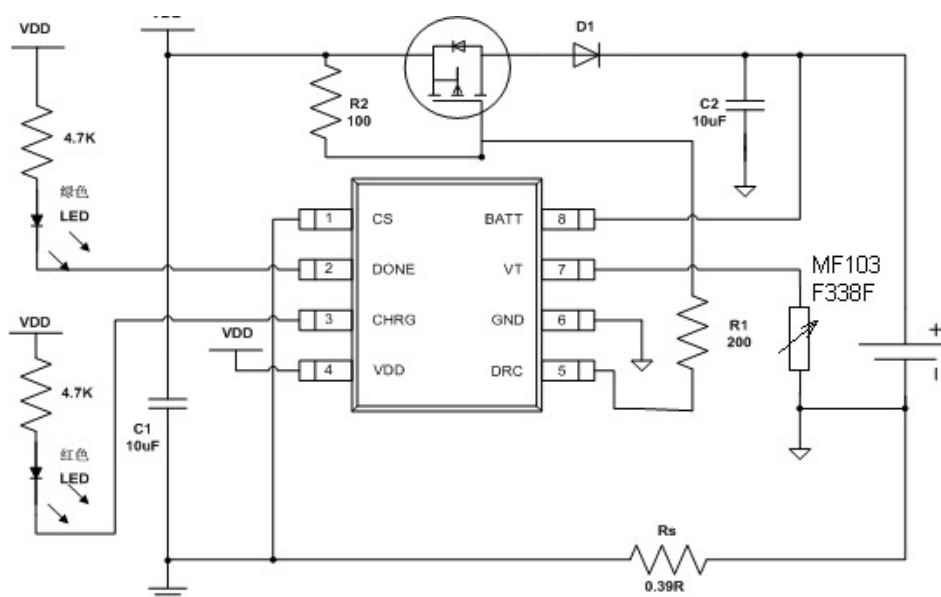
- Type: SOP-8L

Applications

- Digital camera
- PDAS
- The phone lithium battery



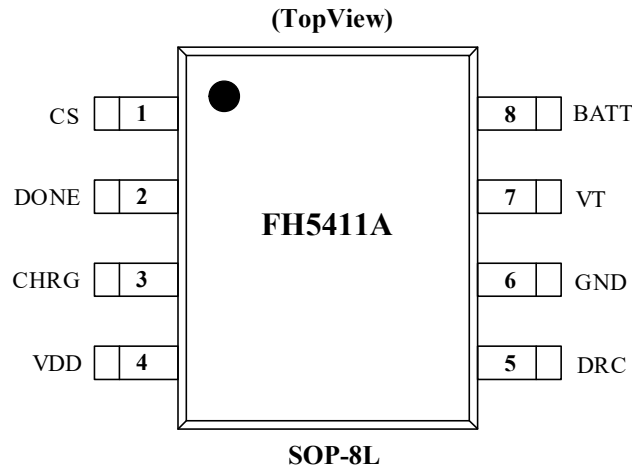
Typical Application Circuit



Note: D1 is a Schottky;

Rs has been suggested that high-precision (1%) in order to ensure current accuracy, R1 and R2 is not required precision.

Pin Assignment



Pin Description

| Pin Number | Pin Name | Function Description |
|------------|----------|-----------------------------------|
| 1 | CS | Overcharge detection pin |
| 2 | DONE | Charge status pin1 |
| 3 | CHRG | Charge status pin2 |
| 4 | VDD | Power input |
| 5 | DRC | External MOS or PNP control pin |
| 6 | GND | Ground |
| 7 | VT | Battery temperature detection pin |
| 8 | BATT | Battery voltage detection |

Block Diagram

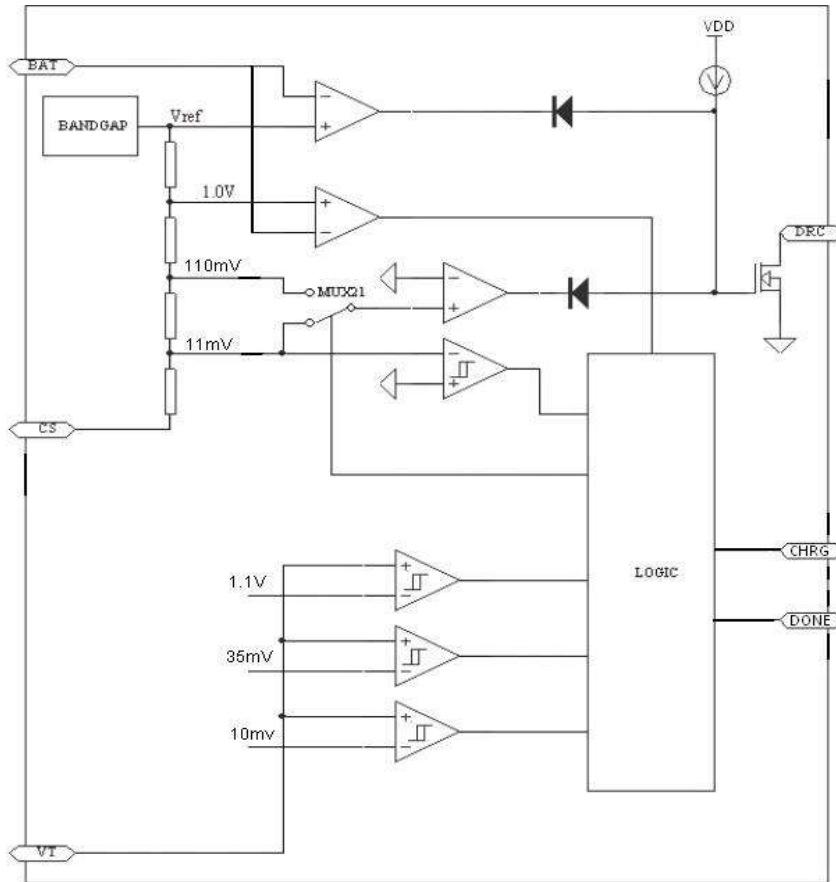


Figure 2. FH5411A block diagram

双节线性锂电池充电管理芯片

器件概述

FH5411A 系列是一款双节锂电池充电管理芯片。该芯片包含了充电状态检测、充电过程、温度检测等，内部还集成一个高精度的基准电压模块，此芯片采用 SOP-8L 封装。

FH5411A 充电包含三种模式：预充电，恒流充电，恒压充电。恒流充电时电流是预充电电流的 5 倍；当电压低于 6.5V 时预充电状态；当电压高于 6.5V 时进入恒流充电模式，此时的充电电流是预充电时的 5 倍，充电电流大小由一个外接的电阻来设置。

产品特点

- 双节锂电池充电管理
- 只需要很少的外围元件
- 预充电、恒流充电、恒压充电模式
- 温度检测
- 双灯充电状态显示
- 封装形式：SOP-8L

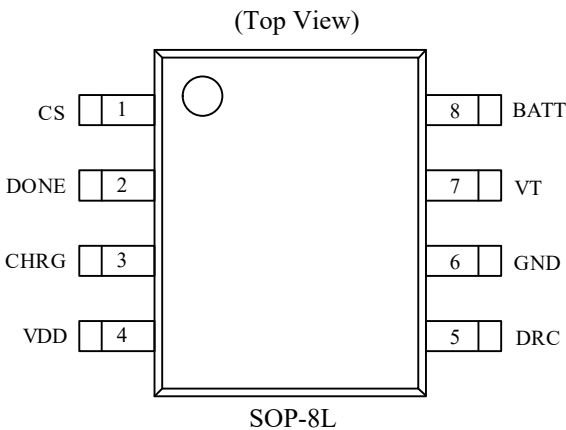
封装形式

- SOP-8L

应用领域

- 数码相机
- PDAS
- 手机锂电池

引脚分配



| 引脚序号 | 引脚名称 | 功能描述 |
|--------|------|--------------------|
| SOP-8L | | |
| 1 | CS | 充电检测引脚 |
| 2 | DONE | 充电状态显示引脚 1 |
| 3 | CHRG | 充电状态显示引脚 2 |
| 4 | VDD | 电源输入 |
| 5 | DRC | 外接 MOS 或者 PNP 控制引脚 |
| 6 | GND | 接地 |
| 7 | VT | 电池温度检测引脚 |
| 8 | BATT | 电池电压检测 |

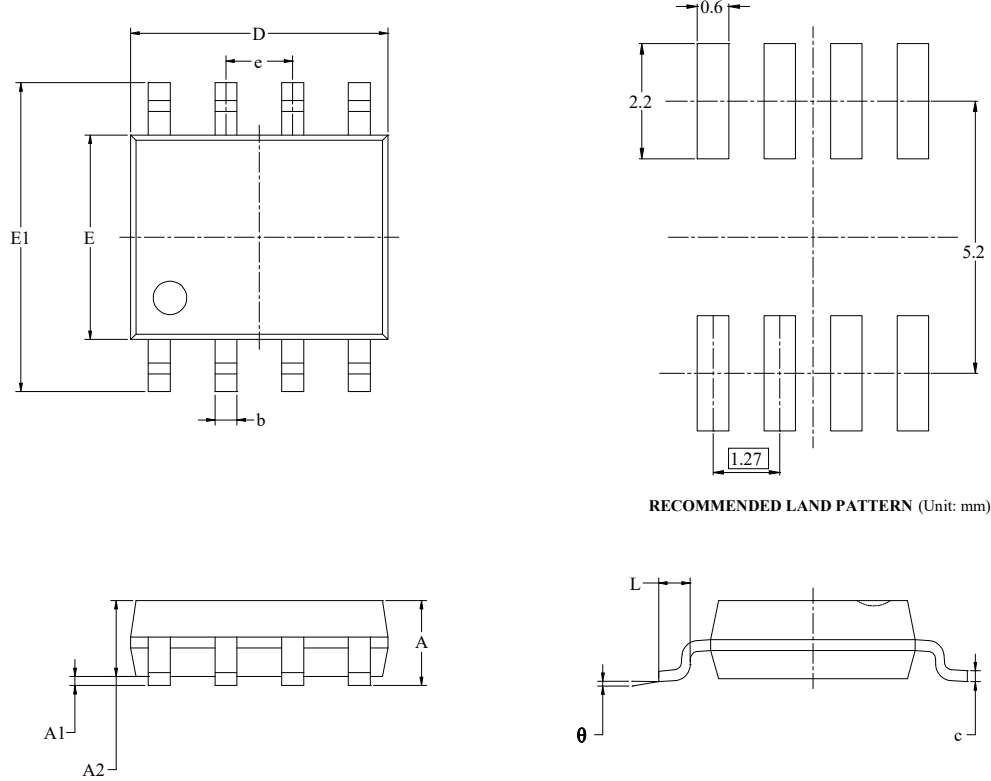
绝对最大额定值

| 参数 | 标号 | 最大额定值 | 单位 |
|----------|------------|-----------------------------|----|
| 输入电压 | V_{DD} | $V_{SS}-0.3 \sim V_{SS}+18$ | V |
| DRC 端电压 | V_{drc} | $V_{SS}-0.3 \sim V_{SS}+18$ | |
| BAT 端电压 | V_{bat} | $V_{SS}-0.3 \sim 12$ | |
| CS 端电压 | V_{cs} | $V_{SS}-0.3 \sim 6$ | |
| CHAG 端电压 | V_{chrg} | $V_{SS}-0.3 \sim 18$ | |
| DONE 端电压 | V_{done} | $V_{SS}-0.3 \sim 18$ | |
| NTC 端电压 | V_{ntc} | $V_{SS}-0.3 \sim 6$ | |
| 工作外围温度 | T_{opa} | $-40 \sim +85$ | °C |
| 存储温度 | T_{str} | $-65 \sim +125$ | |

注意：绝对最大额定值是指在任何条件下都不能超过的额定值。万一超过此额定值，有可能造成产品劣化等物理性损伤。

PACKAGE OUTLINE DIMENSIONS

Type: SOP-8L



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|------------------------------|-------|-------------------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 1.350 | 1.750 | 0.053 | 0.069 |
| A1 | 0.100 | 0.250 | 0.004 | 0.010 |
| A2 | 1.350 | 1.550 | 0.053 | 0.061 |
| b | 0.330 | 0.510 | 0.013 | 0.020 |
| c | 0.170 | 0.250 | 0.006 | 0.010 |
| D | 4.700 | 5.100 | 0.185 | 0.200 |
| E | 3.800 | 4.000 | 0.150 | 0.157 |
| E1 | 5.800 | 6.200 | 0.228 | 0.244 |
| e | 1.27 BSC | | 0.050 BSC | |
| L | 0.400 | 1.270 | 0.016 | 0.050 |
| θ | 0 | 8 | 0 | 8° |

ORDERING INFORMATION

| Part Number | Input Voltage | Features | Operating Temperature | Package Type | Top Mark | SPQ |
|-------------|---------------|---|-----------------------|--------------|-------------------------|-------------|
| FH5411ABS8 | ~ VSS+18.0V | <ul style="list-style-type: none"> • #2 Cell linear battery charger • Vflog: 8.4V (typ.) • Iconst: 200/Rs (typ.) • Ipre: 50/Rs (typ.) | -40°C to +85°C | SOP-8L | FH5411A <u>Y W L</u> | 2500EA/Reel |

Note:

- **FH5411A** devices are Pb-free and RoHs compliant.
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- If you have any other custom purchase needs, please contact our sales department.
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