

4.0A Multi-Chemistry Battery Charger IC

■ Descriptions

The FH5465 is a PWM switch-mode multi-chemistry battery charger controller in a small package using few external components.

The FH5465 is specially designed for charging lithium ion, LiFePO4 or Lithium Titanate batteries with constant current and constant voltage mode. In constant voltage mode, the regulation voltage is set by 2 external resistors. The constant charging current is programmable with a single current sense resistor.

Deeply discharged batteries are automatically trickle charged at 17.5% of the programmed constant charging current until the cell voltage exceeds 66.5% of constant voltage. The charge cycle is terminated once the charging current drops to 16% of full-scale current, and a new charge cycle automatically restarts if the charge current rises above 58.8% of full-scale charge current. FH5465 will automatically enter sleep mode when input voltage is lower than battery voltage.

Other features include under voltage lockout, battery over voltage protection, status indication, etc.

FH5465 is available in a space-saving 10-pin SSOP package.

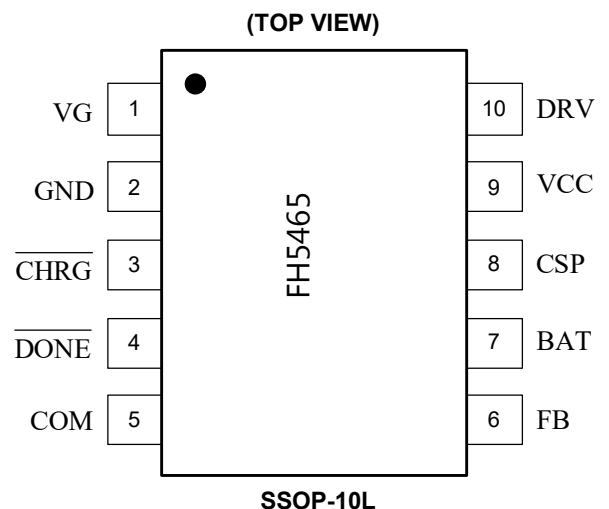
■ Applications

- Hand-held Equipment
- Battery- Backup Systems
- Portable Industrial and Medical Equipment
- Standalone Chargers for Lithium ion, LiFePO4 or Lithium Titanate Batteries

■ Features

- Wide Input Voltage: 6.6 V to 30.0V
- Complete Charge Controller for Single- or Multi-cell Lithium ion, LiFePO4 or Lithium Titanate Batteries
- Charge Current Up to 4.0A
- PWM Switching Frequency: 310KHz
- Can be used as Voltage Source when Battery is Absent
- Charging Current is programmed with a current sense resistor
- Automatic Conditioning of Deeply Discharged Batteries
- Automatic Recharge
- Charging Status Indication
- Soft Start
- Battery Overvoltage Protection
- Operating Ambient Temperature -40°C to +85°C
- Available in 10-Pin SSOP Package
- Pb-free, RoHs-Compliant, Halogen Free

■ Pin Assignment



■ Typical Application Circuit

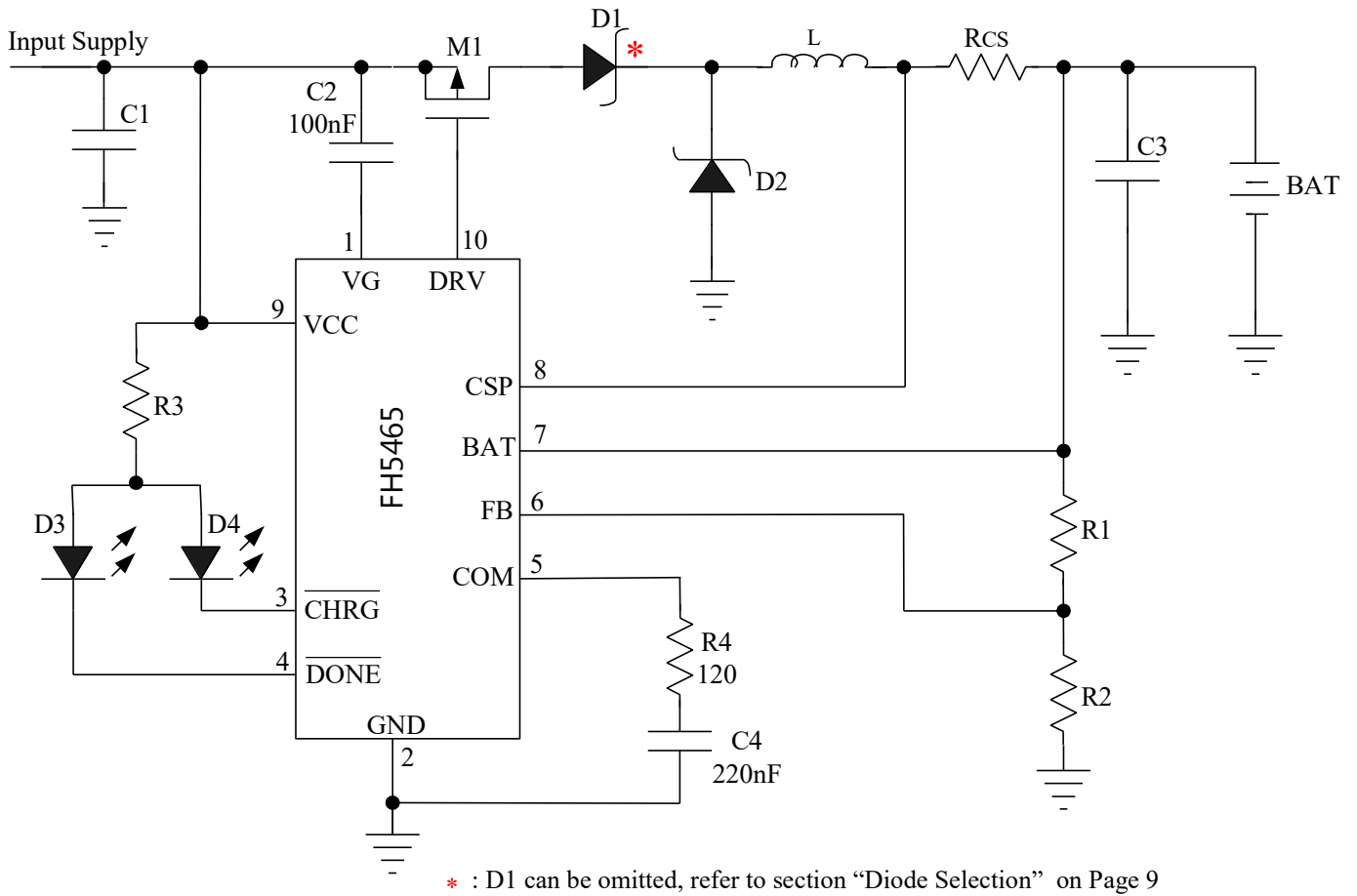


Figure.1 Typical Application Circuit

4.0A 多类型电池充电管理集成电路

■ 器件概述

FH5465 是 PWM 降压模式多类型电池充电管理集成电路，独立对多种电池充电进行管理，具有封装外形小，外围元器件少和使用简单等优点。

FH5465 具有涓流，恒流和恒压充电模式，非常适合锂电池，磷酸铁锂电池和钛酸锂电池充电管理。在恒压充电模式，FH5465 将电池电压调制在外部反馈电阻所设置的电压；在恒流充电模式，充电电流通过一个外部电阻设置。

对于深度放电的锂电池，当电池电压低于恒压充电电压的 66.5% (典型值) 时，FH5465 用所设置的恒流充电电流的 17.5% 对电池进行涓流充电。在恒压充电阶段，充电电流逐渐减小，当充电电流降低到恒流充电电流的 16% 时，充电结束。在充电结束状态，如果充电电流再上升到恒流充电电流的 58.8% 以上，自动开始新的充电周期。当输入电源掉电或者输入电压低于电池电压时，FH5465 自动进入睡眠模式。

其它功能包括输入低电压锁存，电池端过压保护和充电状态指示等。

FH5465 采用 10 管脚 SSOP 封装。

■ 应用领域

- 手持设备
- 便携式工业和医疗仪器
- 备用电池应用
- 电动工具
- 锂电池，磷酸铁锂电池和钛酸锂电池充电

■ 极限参数

VCC, VG, DRV, CHRG, DONE 到 GND 的电压	-0.3V to 33.0V
VG 管脚到 VCC 管脚电压	-8.0V to VCC+0.3V
CSP, BAT 到 GND 的电压	-0.3V to 27.0V
COM, FB 到 GND 的电压	-0.3V to 6.5V
存储温度	-65°C 到 150°C
工作环境温度	-40°C 到 85°C
焊接温度 (10 秒)	260°C

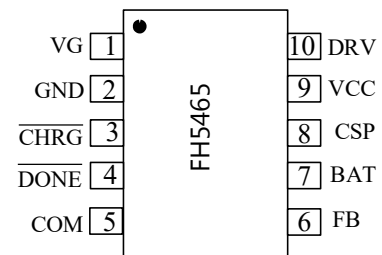
注：超出以上所列的极限参数可能造成器件的永久损坏。

以上给出的仅仅是极限范围，在这样的极限条件下工作，器件的技术指标将得不到保证，长期在这种条件下还会影响器件的可靠性。

■ 主要特点

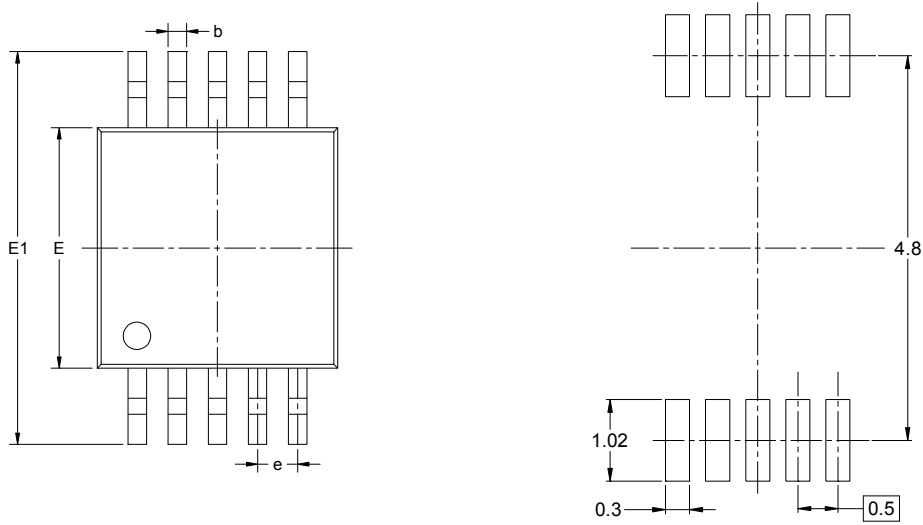
- 可对单节，多节锂电池，磷酸铁锂电池或钛酸锂电池完整的充电管理
- 宽输入电压范围：6.6V 到 30.0V
- 电池没有连接时，可作为恒压源使用
- 充电电流可达 4.0A
- PWM 开关频率：310KHz
- 恒压充电电压由外部电阻设置
- 恒流充电电流由外部电阻设置
- 对深度放电的电池进行涓流充电
- 自动再充电功能
- 充电状态和充电结束状态指示
- 软启动功能
- 电池端过压保护
- 工作环境温度：-40°C 到 +85°C
- 采用 10 管脚 SSOP 封装
- 产品无铅，满足 RoHs，不含卤素

■ 管脚定义

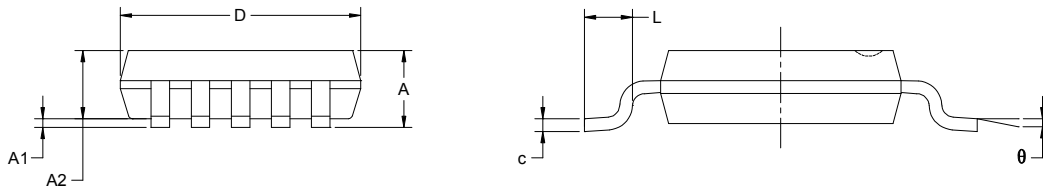


■ Package Information

- Type: SSOP-10L



RECOMMENDED LAND PATTERN (Unit: mm)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A	0.820	1.100	0.032	0.043
A1	0.020	0.150	0.001	0.006
A2	0.750	0.950	0.030	0.037
b	0.180	0.280	0.007	0.011
c	0.090	0.230	0.004	0.009
D	2.900	3.100	0.114	0.122
E	2.900	3.100	0.114	0.122
E1	4.750	5.050	0.187	0.199
e	0.500 BSC		0.020 BSC	
L	0.400	0.800	0.016	0.031
θ	0°	6°	0°	6°

■ Ordering Information

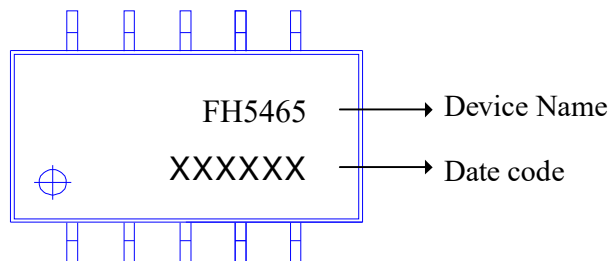
Part Number	Operating Ambient Temperature	Descriptions	Package Type	Top Mark	SPQ
FH5465S10	-40°C to +85°C	Vin: ~30.0V Icharger: 4.0A Freq.: 310KHz	SSOP-10L	5465 **YM	4000PCS/Reel

Note:

- FH5465 devices are Pb-free and RoHS compliant.
- The surface prints of our semiconductor devices are subject to change during the production process and do not involve changes in electrical parameters, and we will not separately state the notice.
- If you have any other custom purchase needs, please contact our sales department.



Device Name : SSOP-10L



ESD SENSITIVITY CAUTION

ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications.



Note:

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➤ Update Apr.2019