#2 Cell, 1.0A, Advanced Linear Charge Management Controller

PRELIMINARY DATASHEET

Datasheet Brierf

Description

FH5411 is a highly advanced complete constant-current / constant voltage linear charger for cell lithium-ion batteries. Its package and low external component count make the FH5411 ideally suited for portable applications.

The charge current can be programmed externally with a single resistor,which may be programmed up to 0.9A.

FH5411 determines the charge mode by detecting the battery voltage: Pre-charger, constant current charging, constant voltage charging. The charge current of 0pre-charging and constant-current charging is adjustable.

The FH5411 is monitored by temperature monitor during the constant-current and constant-voltage charging. There are two LEDs indicate the charge mode.

The FH5411 is available in the SOP-8Lpackage.

Applications

- Charger for Li-Ion Coin Cell Batteries
- Bluetooth Applications
- Portable Players, Wireless Headsets

Key Features

- Absolute Maximum Input Voltage: 20.0V
- Wide Input Operation Voltage: 9.0V ~ 13.5V
- Preset 8.4V Charge Voltage with 1% Accuracy
- Programmable Charge Current Up to 0.9A
- Pre-Charging, the Charge Current is adjustable
- Ideal for Dual-Cell(8.4V) Li-ion Batteries
- Constant-Current Charging, the Charge Current is adjustable
- Constant-Voltage Charging
- Constant-Current/Constant-Voltage Charging with Temperature Monitoring(NTC)
- Automatic Recharge
- Double LEDs Charge Status Indication
- Available in SOP-8L Package

Device Information (1)

PART NUMBER	PACKAGE	BODY SIZE (NOM)
FH5411	SOP-8L	4.90mm × 3.91mm

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

Typical Operating Circuit

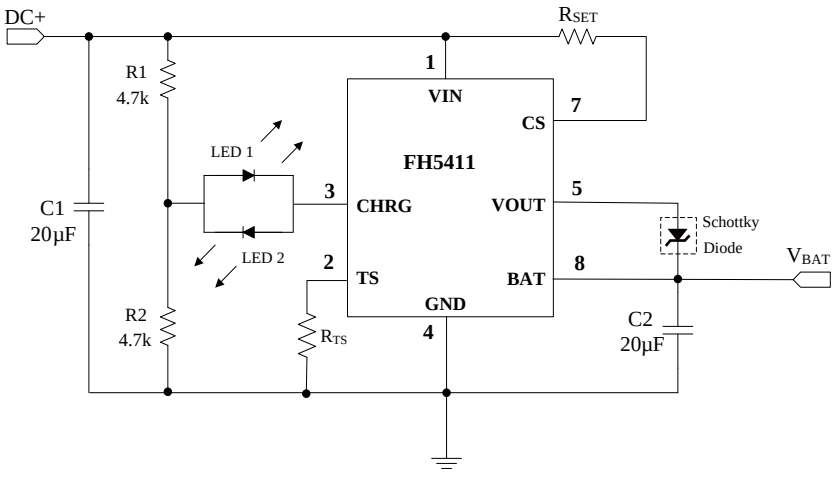
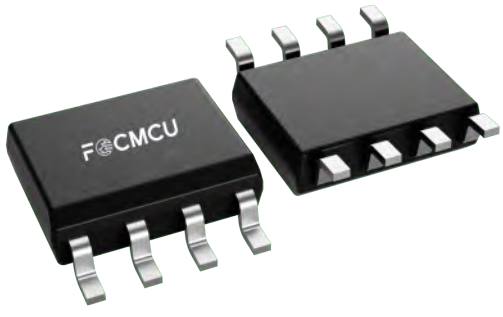
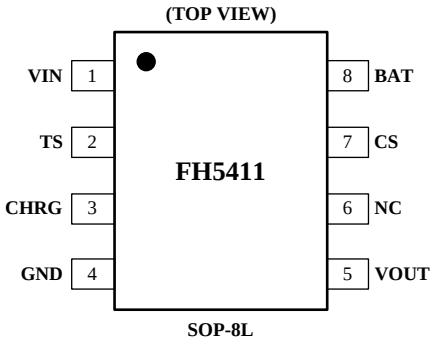


Figure 1. Typical operating circuit



Packaging physical

Pin Assignment



Pin Description

PIN	NAME	DESCRIPTION
1	VIN	Positive Input Supply Voltage. It Provides power to the charger VIN and should be bypassed with a 20μF capacitor.
2	TS	Temperature Sense
3	CHRG	Open-Drain Charge Status Output. When the battery is charging, the CHRG pin is pulled low. When the charge cycle is completed, the CHRG pin is pulled high. When no AC is detected, CHRG is forced high impedance.
4	GND	Ground
5	VOUT	Charge Current Output. Charge Current Output. It provides charge current to the battery and regulates the final float voltage to 8.4V.
6	NC	No Connect
7	CS	Charge Current Program. Charge Current Program, Charge Current Monitor and Shutdown Pin. The charge current is programmed by connecting a resistor, R_{SET}.
8	BAT	Battery Connection.

Absolute Maximum Rating (Note 2)

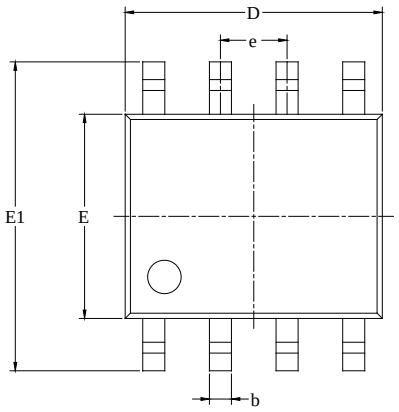
Parameter	Symbol	Min	Max	Unit
Input Supply Voltage	V_{IN}	-0.3	20	V
CS Pin		-0.3	VIN +0.3	V
VOUT Pin Current.	I_{OUT}		900	mA
Power Dissipation	P_D		2.0	W
Maximum Junction Temperature	T_J		+150	℃
Operating Ambient Temperature Range (Note 3)	T_A	-40	+85	℃
Storage Temperature Range	T_{STG}	-65	+125	℃
Lead Temperature (Soldering, 10 sec)	T_{SDN}		+265	℃

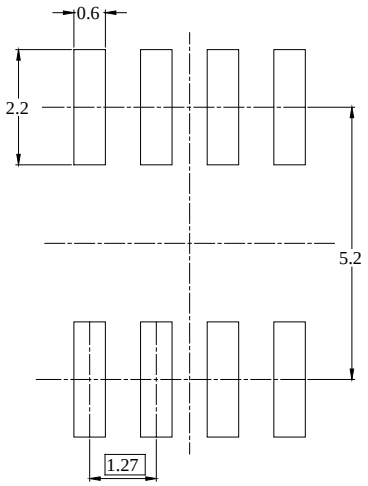
Note 2: Stresses listed as the above "Absolute Maximum Ratings" may cause permanent damage to the device.
Exposure to absolute maximum rating conditions for extended periods may remain possibility to affect device reliability.

Note 3: The FH5411 is guaranteed to meet performance specifications from 0°C to 70°C.
Specifications over the -40°C to 85°C operating temperature range are assured by design, characterization and correlation with statistical process controls.

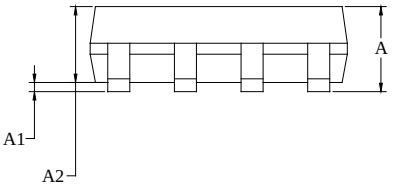
Packaging Information

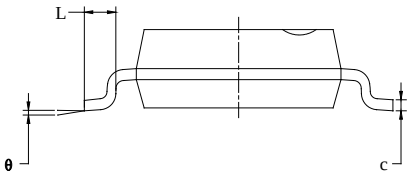
- **Package Outline Dimension: SOP-8L**





RECOMMENDED LAND PATTERN (Unit: mm)





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	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0	8	0	8

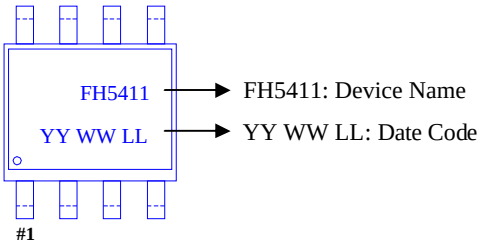
ORDERING INFORMATION

Part Number	Input Voltage	Features	Operating Temperature	Package Type	Top Mark	SPQ
FH5411S8	9.0V~13.5V	● 8.40V Charge Voltage (#2Cell Battery) ● Charge Current: 1.0A ● #2 LED Charge Status ● Temperature Monitoring	-40℃ to +85℃	SOP-8L	FH5411 YY WW LL	4000EA/Reel (Vacuum packing)

Note:

- **FH5411** 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.
- FOCMCU Inc. reserves the right to amend and legally interpret the electrical parameters of this chip device. (http://www.fordevices.com)

Device Name: SOP-8L



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.

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▲ Update by May.2022