

8mΩ R_{SS(ON)}, One Cell Li-ion and Li-poly Battery Protection IC

PRELIMINARY DATASHEET

Datasheet Brief

General Description

The FH7088 is a high integration solution for Li-ion/polymer battery protection. FH7088 contains internal power MOSFET, high-accuracy voltage detection circuits and delay circuits.

FH7088 has all the protection functions required in the battery application including overcharging, over discharging, over-current and load short circuiting protection etc.

The accurate overcharging detection voltage ensures safe and full utilization charging. The low standby current drains little current from the cell while in storage.

The device is not only targeted for digital cellular phones, but also for any other Li-Ion and Li-Poly battery-powered information appliances requiring long term battery life.

The FH7088 requires a minimal number of readily available, external components and is available in a space saving ESOP8 package.

Device Information ⁽¹⁾

PART NUMBER	PACKAGE	BODY SIZE (NOM)
FH7088	ESOP (8L) (Exposed pad)	4.90mm × 3.91mm

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

Applications

- Power Bank
- One-Cell Li-ion Battery Pack
- One-Cell Li-poly Battery Pack
- IoT Sensor/Electronic Toys

Typical Application Circuit

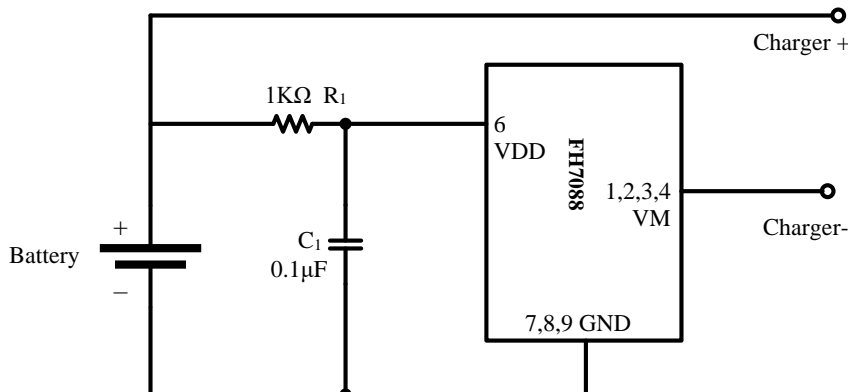


Figure 1. Typical Application Circuit

Key Features

- Protection of Battery Cell Reverse Connection without External load
- Over-temperature Protection
- Overcharge Current Protection
- Two-step Over-current Detection:
 - ▶ Over Discharge Current
 - ▶ Load Short Circuiting
- Charger Detection Function
- 0V Battery Charging Function
- 8mΩ Low R_{SS(ON)} Internal Power MOSFET
- Delay Times are generated inside
- High-accuracy Voltage Detection
- Low Current Consumption
 - ▶ Operation Mode: 0.7µA typ.
 - ▶ Power-down Mode: 0.5µA typ.
- Only One External Capacitor Required
- Available in ESOP-8L Package
- Temperature Range: -40°C to +85°C
- RoHS Compliant and Lead (Pb) Free

Pin Configuration

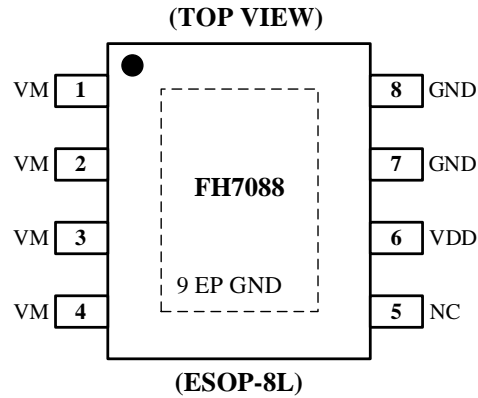


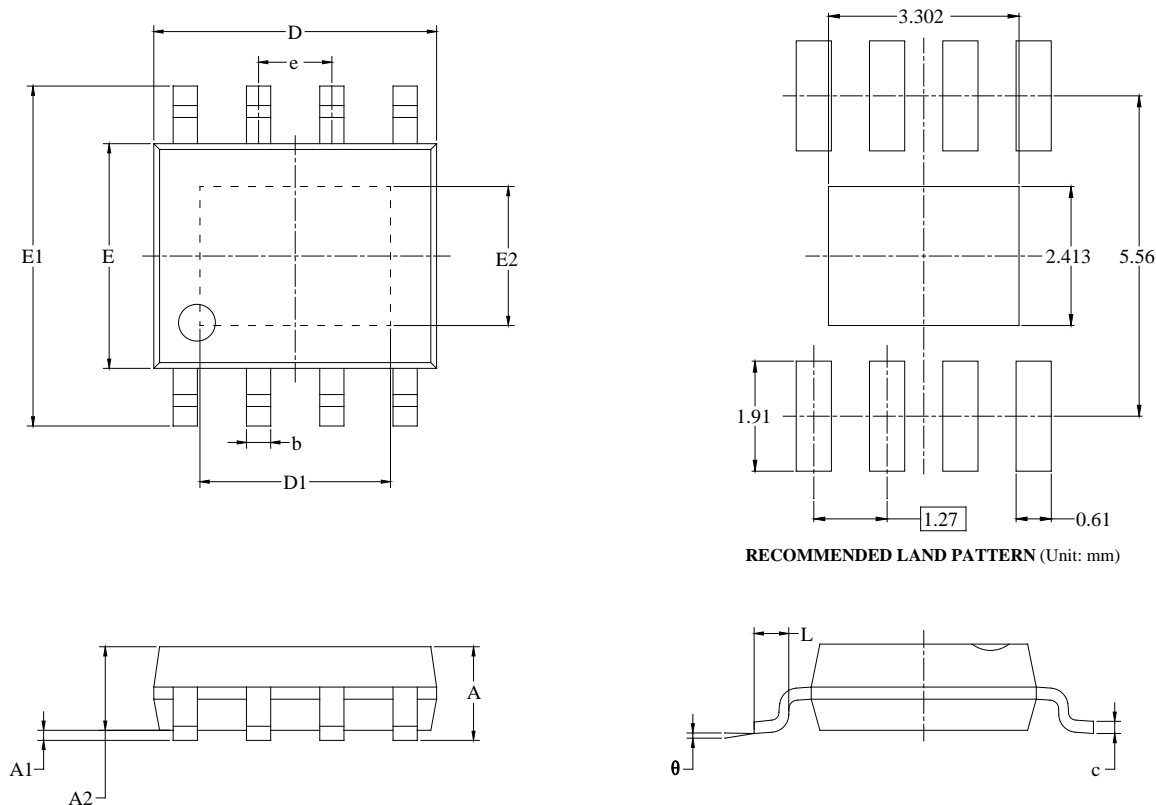
Figure 2. Pin Configuration

Pin Description

Pin	Name	Function
1	VM	The negative terminal of the battery pack. The internal FET switch connects this terminal to GND
2	VM	The negative terminal of the battery pack. The internal FET switch connects this terminal to GND
3	VM	The negative terminal of the battery pack. The internal FET switch connects this terminal to GND
4	VM	The negative terminal of the battery pack. The internal FET switch connects this terminal to GND
5	NC	No connect
6	VDD	Power Supply Pin
7	GND	Ground Pin
8	GND	Ground Pin
9	EPAD	Connected to Ground

PACKAGE OUTLINE DIMENSIONS

ESOP-8L (Exposed Pad)



RECOMMENDED LAND PATTERN (Unit: mm)

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A		1.700		0.067
A1	0.000	0.100	0.000	0.004
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.700	5.100	0.185	0.201
D1	3.202	3.402	0.126	0.134
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
E2	2.313	2.513	0.091	0.099
e	1.27 BSC		0.050 BSC	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

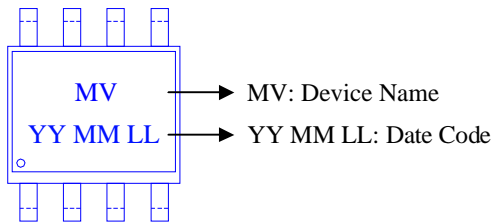
ORDERING INFORMATION

Part Number	Input Voltage	Features	Operating Temperature	Package Type	Top Mark	SPQ
FH7088S8	~ 6.0V	<ul style="list-style-type: none"> • #1 Cell battery protection IC • OTP/OCP/Charger detection • 0V battery charging • I_{CU}: 6.0A(typ.) • I_{IOVI}: 16.0A(typ.) 	-40°C to +85°C	ESOP-8L	MV YY WW LL	3000EA/Reel

Note:

- FH7088 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: ESOP-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 Aug.2022