

One Cell Li-ion/Polymer Battery Protection IC

DESCRIPTION

The FH7089 product is a high integration solution for lithium-ion/polymer battery protection. FH7089 contains advanced power MOSFET, high-accuracy voltage detection circuits and delay circuits. FH7089 is put into an ESOP-8L package and only one external component makes it an ideal solution in limited space of battery pack.

FH7089 has all the protection functions required in the battery application including overcharging, overdischarging, overcurrent 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.

APPLICATIONS

- One-Cell Lithium-ion Battery Pack
- Lithium-Polymer Battery Pack

Typical Application Circuit

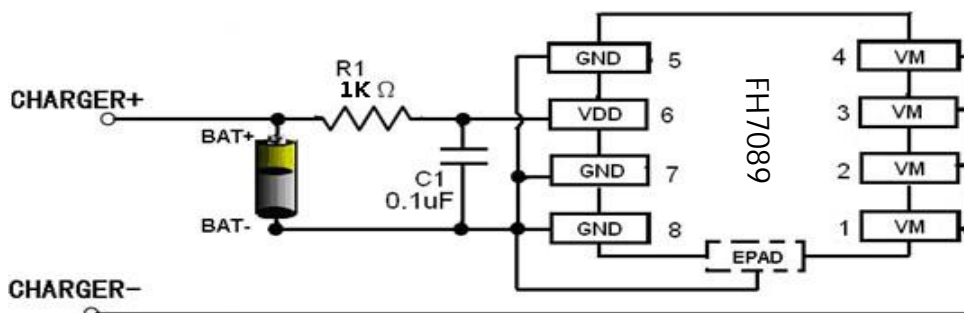


Figure 1. Typical Application Circuit



(ESOP-8L Physical Diagram)

FEATURES

- Protection of Charger Reverse Connection
- Protection of Battery Cell Reverse Connection
- Integrate Advanced Power MOSFET with Equivalent of $20\text{m}\Omega R_{\text{SS(ON)}}$
- Only One External Capacitor Required
- Over-temperature Protection
- Overcharge Current Protection
- Two-step Overcurrent Detection:
 - > Overdischarge Current
 - > Load Short Circuiting
- Charger Detection Function
- 0V Battery Charging Function
- Delay Times are generated inside
- High-accuracy Voltage Detection
- Low Current Consumption
- Overcurrent Detection Current: 10.0A
- Operation Mode: $6.0\mu\text{A}$ typ.
- Power-down Mode: $3.0\mu\text{A}$ typ.
- RoHs Compliant and Lead (Pb) Free
- ESOP-8L Package

■ PIN CONFIGURATION

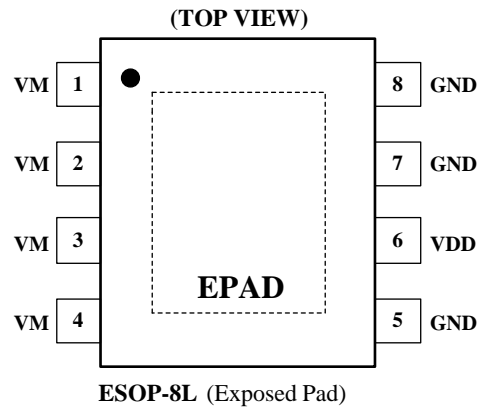


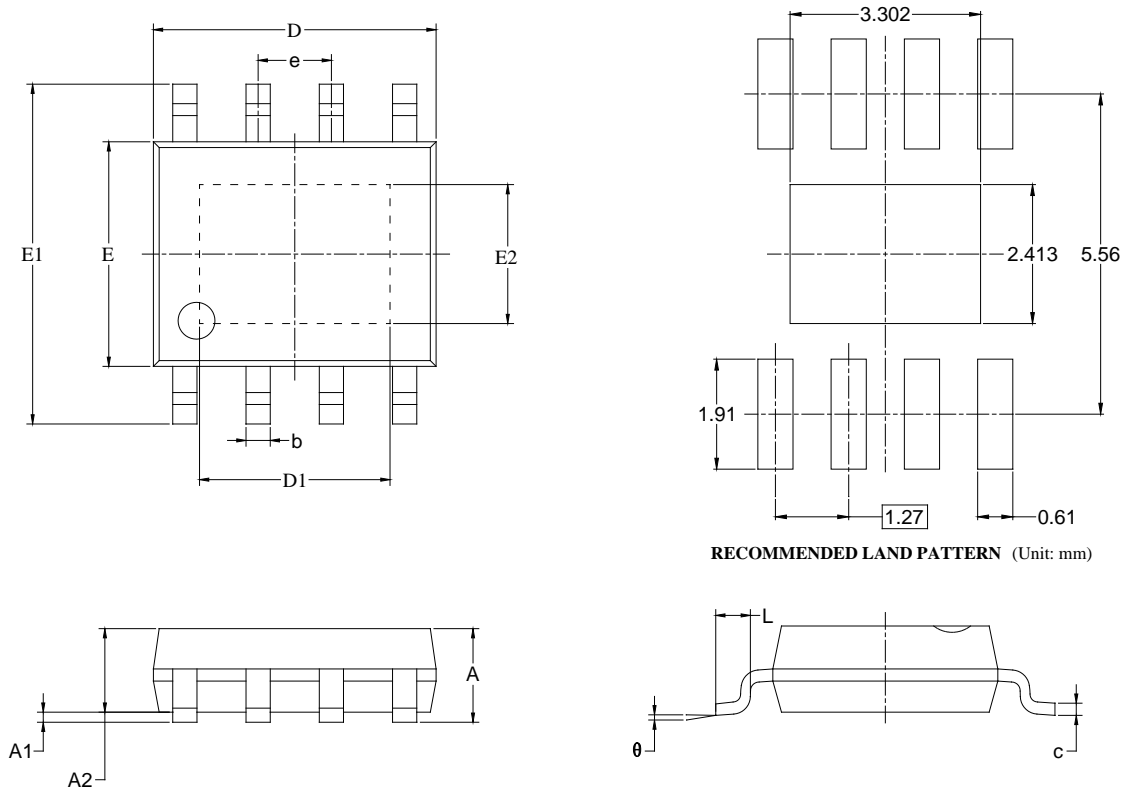
Figure 2. PIN Configuration

■ PIN DESCRIPTION

PIN NUMBER	PIN NAME	PIN DESCRIPTION
1,2,3,4	VM	The negative terminal of the battery pack. The internal FET switch connects this terminal to GND
5,7,8	GND	Ground, connect the negative terminal of the battery to this pin
6	VDD	Power Supply
9	EPAD	Exposed pad, please connect with GND of FH7089

■ PACKAGE OUTLINE

ESOP-8L PACKAGE OUTLINE AND DIMENSIONS



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

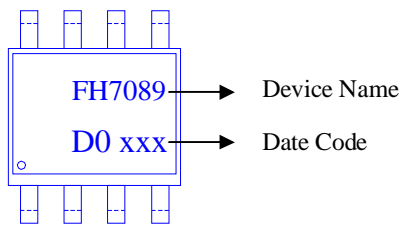
PART NUMBER	[VCU] (V)	[VCL] (V)	[VDL] (V)	[VDR] (V)	[IOV1] (A)	Package	Top Mark	SPQ
FH7089S08	4.250	4.10	2.90	3.0	10.0	ESOP-8L	FH7089 D0 ***	4000PCS/Reel

Note:

- FH70□9 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: 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 Oct.2019