L6924D

Li-Ion/Li-Polymer Battery Charger System with Integrated Power Switch

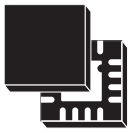
DATA BRIEF

Features

- Fully integrated solution with Power pass MOSFET, reverse blocking diode, sense resistor and thermal protection
- Ideal for Coke and Graphite anode Single cell Li-Ion packs
- Both Linear and Quasi Pulse operation
- Programmable charge current
- Programmable Pre-Charge voltage threshold
- ±1% output voltage accuracy
- Status outputs to drive LEDs or Host Processor interface
- Programmable charge timer and charge end current
- Small VFQFPN package (3mm x 3mm)
- Low thermal resistance: 80°C/W
- Charge current thermal loop

Applications

- PDA's
- Handheld Devices
- Cellular Phones
- Digital Cameras
- Stand-alone Chargers
- Usb Powered Chargers
- Mp3 Players



VFQFPN 16

Description

The L6924D is a fully monolithic linear battery charger, ideal for coke and graphite anode single cell Li-Ion packs that allows a charge management system in a very compact application.

It is the ideal way for space limited applications, like PDA's, hand held, cellular phones and digital cameras. It is realized in BCD6 technology and, in a small VFQFPN 3x3 16 pins package, that integrates all the power elements (the Power pass MOSFET, the reverse blocking diode and the sense resistor).

The maximum application flexibility of the L6924D, is given by the possibility of programming all the features (like pre-charging current, charging current, the pre-charging voltage threshold, the end of charge current threshold and the charging time). When a real basic external wall adapter is used, the L6924D works in Linear Mode and charges the battery in a CC/CV (Constant current/ Constant voltage) profile.

Order codes

Part number	Package	Packing
L6924D	VFQFPN 16	Tube

However, when a current-limited adapter is used, the device works in Quasi Pulse Mode thanks to its low input voltage. The device has an operating input voltage ranging from 2.5V to 14V. On the L6924D is possible to select the output voltage (4.1V-4.2V) with ±1% voltage accuracy.

This allows to use both coke and graphite anode cells. The L6924D offers two open collector outputs, for diagnostic purpose, which can be used to drive two external LEDs, or to communicate with a host microcontroller.

Moreover, the voltage across the resistor connected between IEND and GND gives the status about the charging current (working as a gas gauge) and some eventual faults, like battery over temperature, the battery absence and the over time charge.

Figure 1. Basic Application Diagram

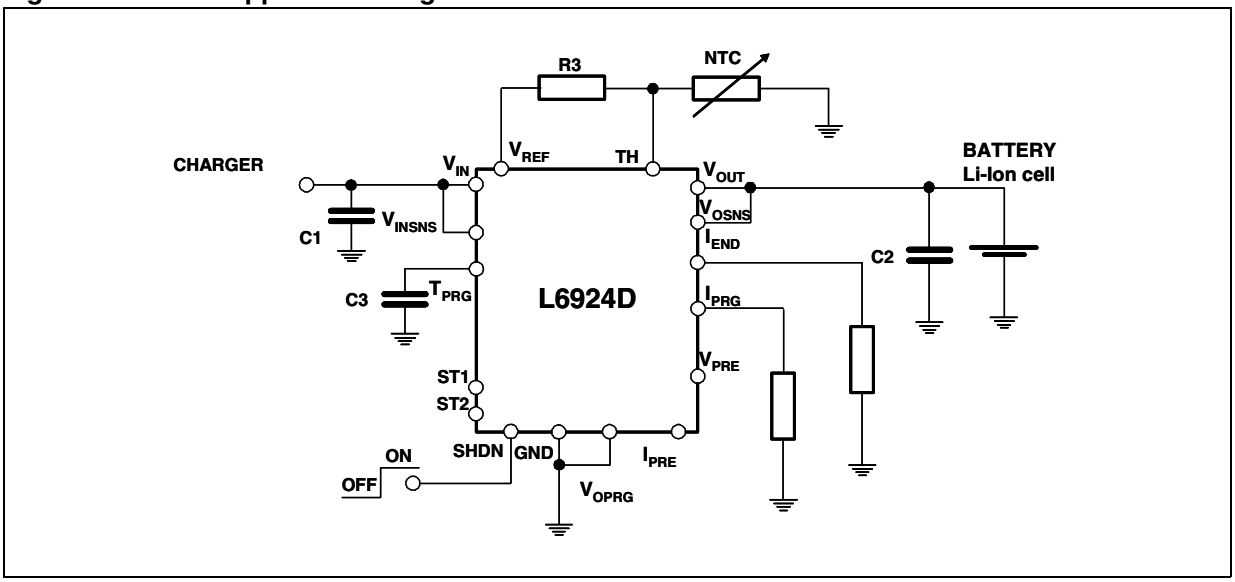
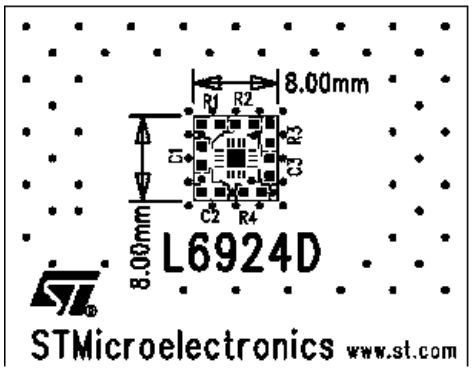


Figure 2. Demo Board Layout

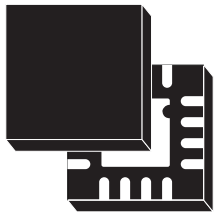


1 Package information

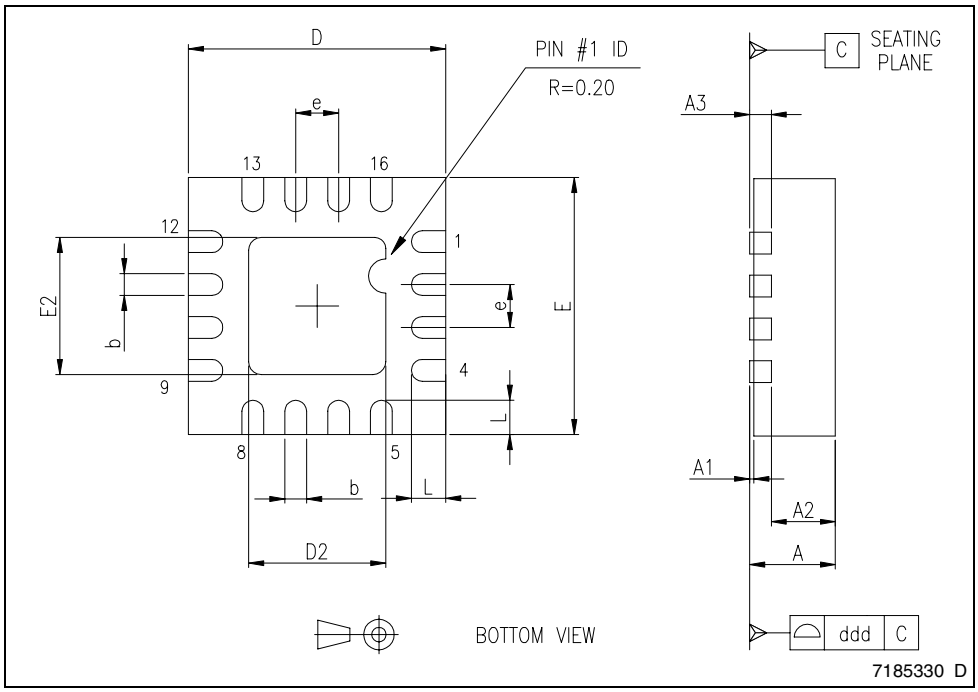
Figure 3. VFQFPN 16 (3mmx3mm) Mechanical Data & Package Dimensions

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	0.800	0.900	1.000	0.031	0.035	0.039
A1		0.020	0.050		0.0008	0.0019
A2		0.650	1.000		0.025	0.039
A3		0.250			0.01	
b	0.180	0.230	0.300	0.007	0.009	0.012
D	2.875	3.000	3.125	0.113	0.118	0.123
D2	0.250	0.700	1.250	0.010	0.027	0.050
E	2.875	3.000	3.125	0.113	0.118	0.123
E2	0.250	0.700	1.250	0.010	0.027	0.050
e	0.450	0.500	0.550	0.018	0.020	0.022
L	0.300	0.400	0.500	0.012	0.016	0.020
ddd			0.080			0.003

OUTLINE AND MECHANICAL DATA



VFQFPN-16 (3x3x1.0mm)
Very **F**ine **Q**uad **F**lat **P**ackage **N**o lead



2 Revision history

Date	Revision	Changes
12-July-2005	1	Initial release.