



Evaluation Board DB_SY6912AFAC

2A Multi-Cell High Efficiency Switching Charger Preliminary Specification

Introduction

SY6912A is a 4.0-23V_{IN}, 2A multi-cell synchronous buck Li-Ion battery charger. The compact package SO8E is widely suitable for portable application. Integrated 800 kHz synchronous buck regulator consists of 23V rating FETs with extremely low ON resistance to achieve high charge efficiency and simple peripheral circuit design.

Schematic

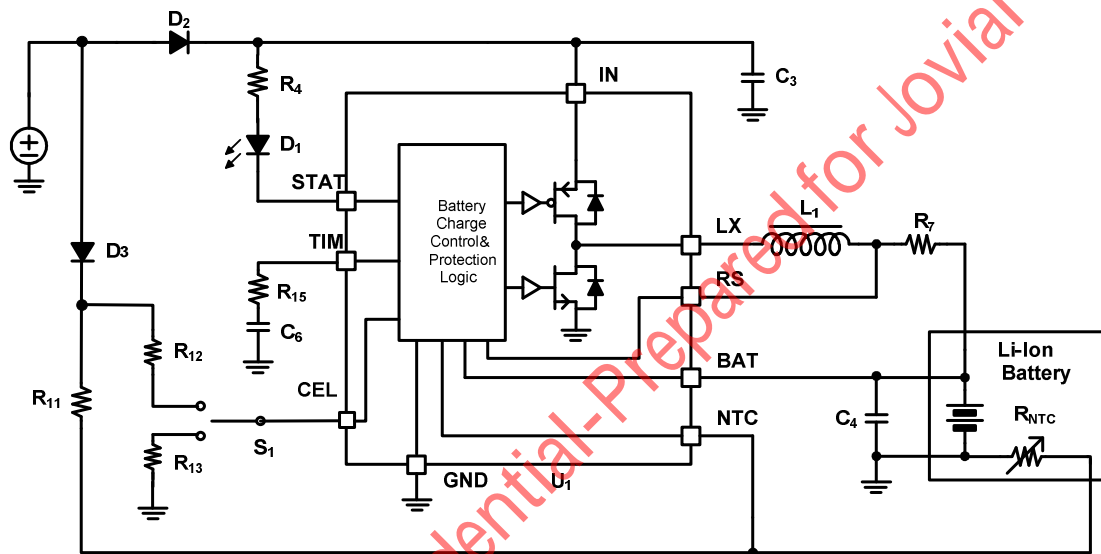


Figure1. Schematic Diagram

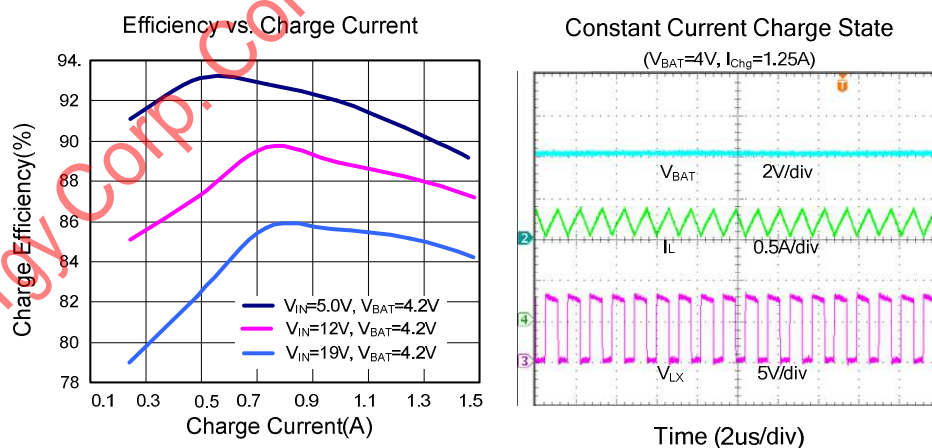


Figure2. Test Results



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Quick Start Guide (Refer to Figure 3)

1. Connect ACIN and GND to Power supply. Connect load (Battery) to BAT and GND.
2. Turn on supply power. Measure the Battery voltage.
3. **LED ON** means **Charge-in-Process**, **LED off** means **Charge Done**, **LED Flash** means **Fault Mode**.

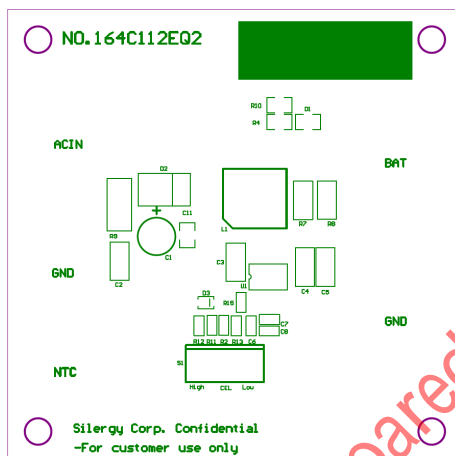


Figure 3. Top Silkscreen

PCB Layout

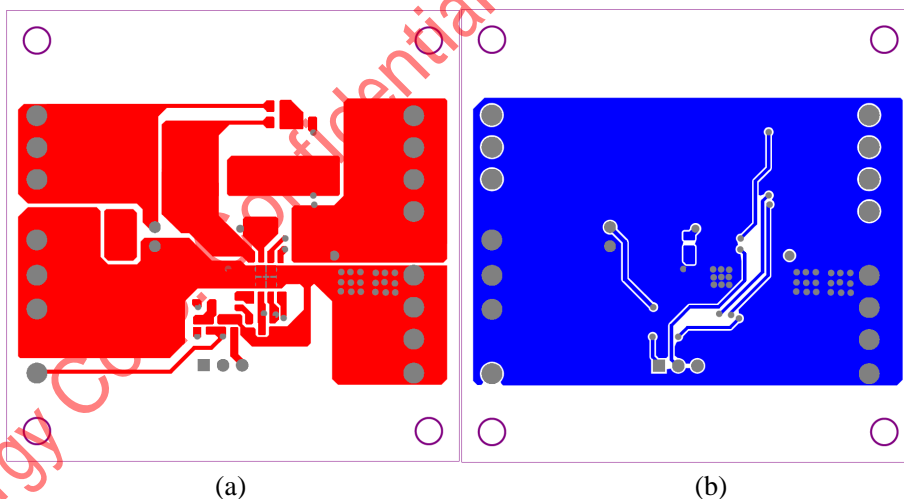


Figure 4. PCB Layout Plots: (a) Top layer, (b) Bottom layer

**SILERGY**

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BOM List

Designator	Description	Part Number	Manufacturer
U1	2A multi-cell High Efficiency Switching Charger	SY6912A	Silergy
L1	INDUCTOR 6.8uH 2.5A	CDRH5D28KHPNP-6R8NC	Sumida
C3	50V/2.2uF,1206,X5R	C3216X5R1H225K	TDK
C4	16V/10uF,1206,X7R	C3216X7R1C106K	TDK
C6	470nF		
D1	Chip LED		
D2	40V/3A, Schottky Diode		
D3	30V/0.2A, Schottky Diode	BAT54	
R4	5.1k Ω , 0805, 1%		
R7	20m Ω , 1206, 0. 1%		
R11	100k Ω , 0603, 1%		
R12,R13,R15	0 Ω , 0603, 1%		
S1	Switch		

*Note: The voltage divider resistor R2 on the EVB is used to set the NTC pin's voltage at 50% V_{in} (25%~75% V_{in}), thus can make the IC enter charge mode. In real Battery application circuit, we can just leave R2 floating, to achieve OTP and UTP protection.