



# Evaluation Board DB\_SY21051FCC\_1

High Efficiency, 1.0A, 100V Input  
Synchronous Step Down Regulator

## Introduction

DB\_SY21051FCC\_1 is intended for evaluating 1A, 100V synchronous step down regulator.

## Design Specifications

Input Voltage (V)	Output Current (A)	Output Voltage (V)	Test conditions
7-100	0-1	5	K <sub>1</sub> Close

## Schematic

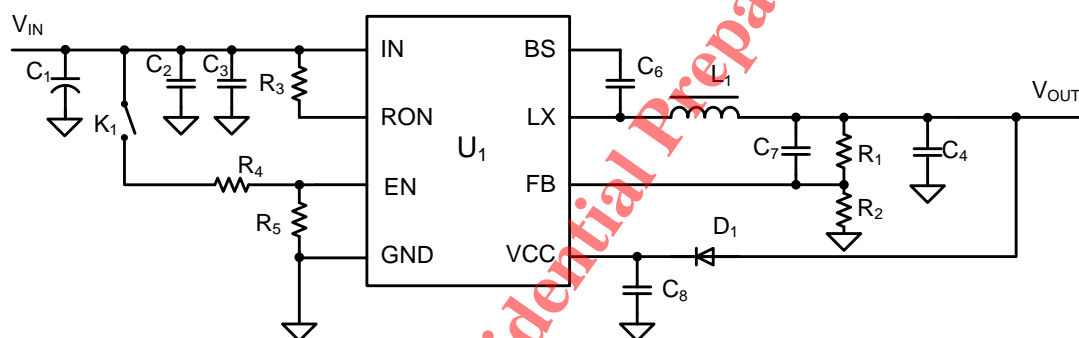


Figure1. Schematic Diagram

## Recommended Table

V <sub>OUT</sub> (V)	R <sub>1</sub> (kΩ)	R <sub>2</sub> (kΩ)	L <sub>1</sub> (μH)
5	100	31.6	33
12	100	11.11	47

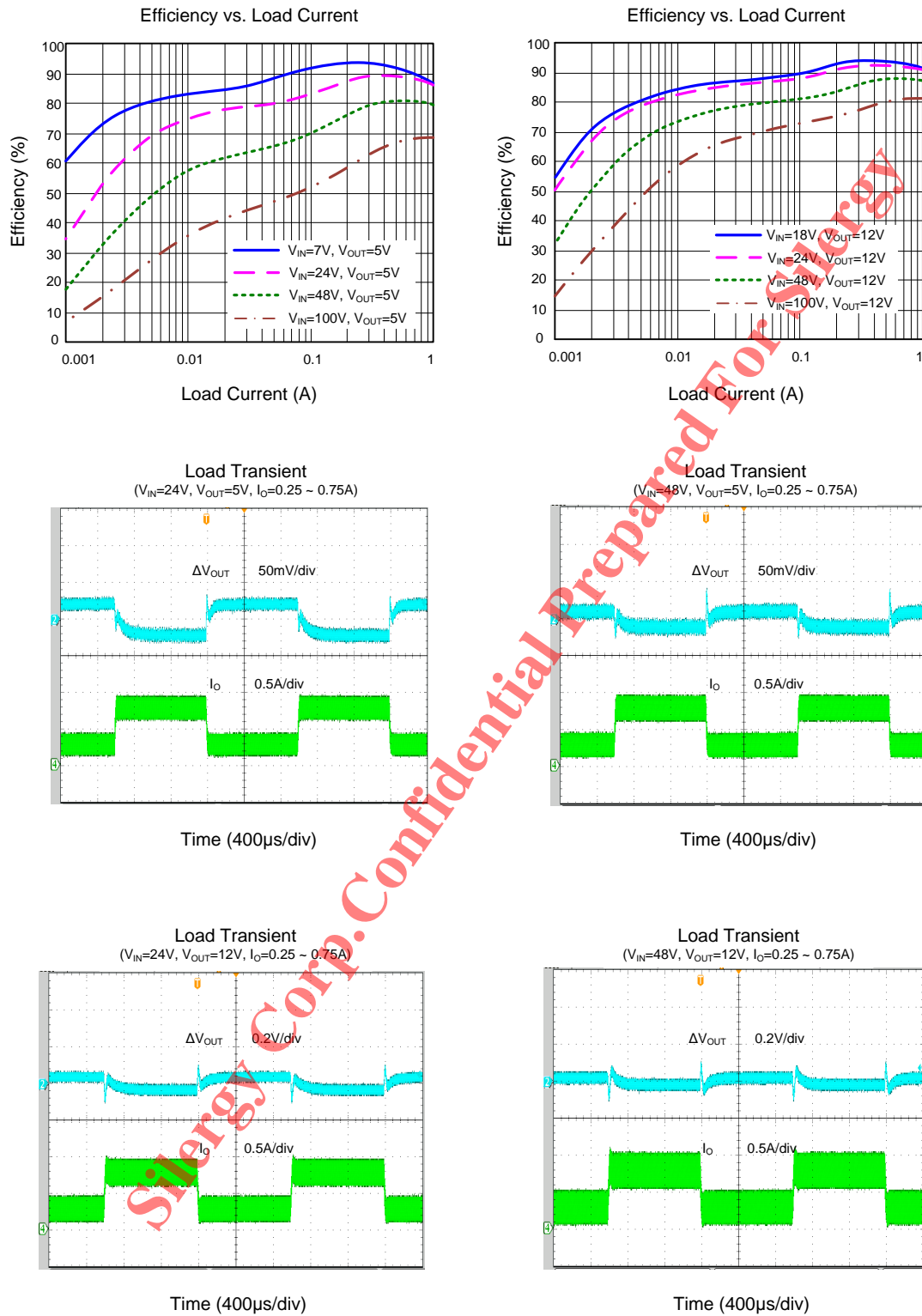


Figure2. Test Results

## Quick Start Guide (Refer to Figure 3)

1. Connect the output load to  $V_{OUT}$  and GND output connectors. Preset the load current to between 0A and 1A.
2. Preset the input supply to a voltage between 7V and 100V. Turn the supply off. Connect the input supply to  $V_{IN}$  and GND input connectors.
3. Short jumper  $K_1$ . Change  $R_2$  to achieve the desired output voltage. See Table 1.
4. Turn on the input supply and measure the output voltage.

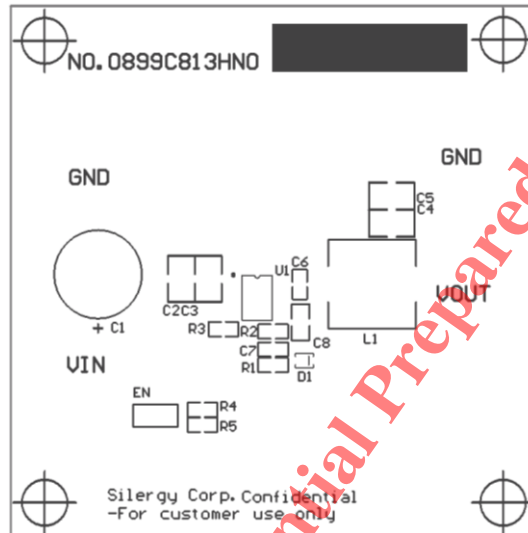


Figure 3. Top Silkscreen

## PCB Layout

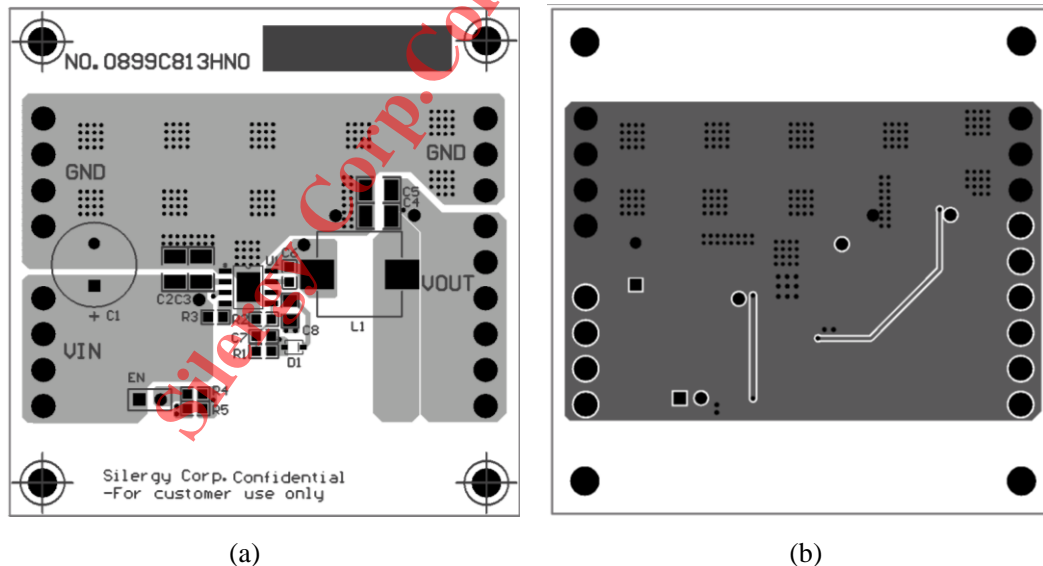
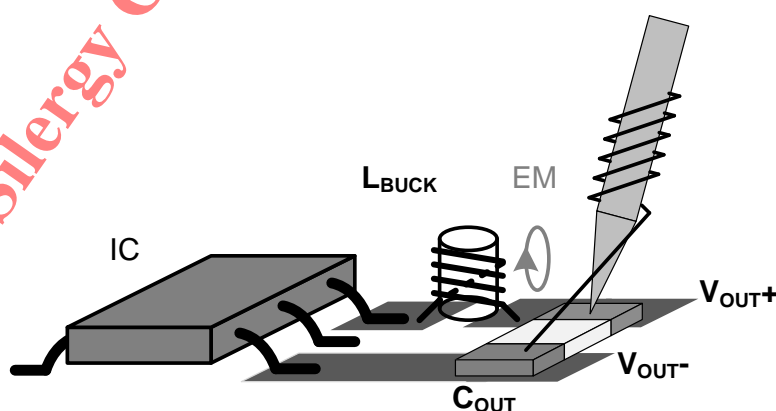


Figure 4. PCB Layout Plots: (a) top layer, (b) bottom layer



Reference Designator	Description	Part Number	Manufacturer
U1	100V Input synchronous step down regulator	SY21051FCC	SILERGY
C1	22uF/200V Electrolytic Cap		
C3	1uF/100V/X7R, 1206	C3216X7R2E105K	TDK
C4	10uF/25V/X5R, 1206	C3216X5R1E106M	TDK
C6,C8	0.1uF/50V/X7R, 0603	C1608X7R1H104K	TDK
C7	100pF/50V/X5R, 0603		
C2	Spare		
R1	100k , 1%, 0603		
R2	31.6k , 1%, 0603		
R3,R5	1M $\Omega$ , 1%, 0603		
R4	10k $\Omega$ , 1%, 0603		
D1	BAT54		
L1	Inductor 33uH 2.2A	CDRH8D43NP-330NC	

1. Remove the ground clip and head of the probe. Wind thin wires around the ground ring of the probe. Solder the end of the ground ring wire to the negative node of the  $C_{OUT}$ . Touch the probe tip to the positive node of the  $C_{OUT}$ . Refer to Figure.5.
2. Minimize the loop formed by  $C_{OUT}$  terminals, probe tip and ground ring.
3. Change the probing direction to decouple the electromagnetic noise generated from the nearby buck inductor (Refer to Figure.5).



**Figure.5 Recommended way to measure the output voltage ripple**