



Evaluation Board DB_SY8023FCC

Dual High Efficiency 1MHz, Dual 3A Synchronous Step Down Regulator

Introduction

DB-SY8023FCC_1 is intended for evaluating dual 1 MHz, Dual 3A synchronous buck regulator. It features Enable controls.

Design Specifications

Input Voltage (V)	Output Current (A)	Output Voltage (V)
3~5.5V	0~3A (each channel)	$V_{out1}=1.8V$

Schematic

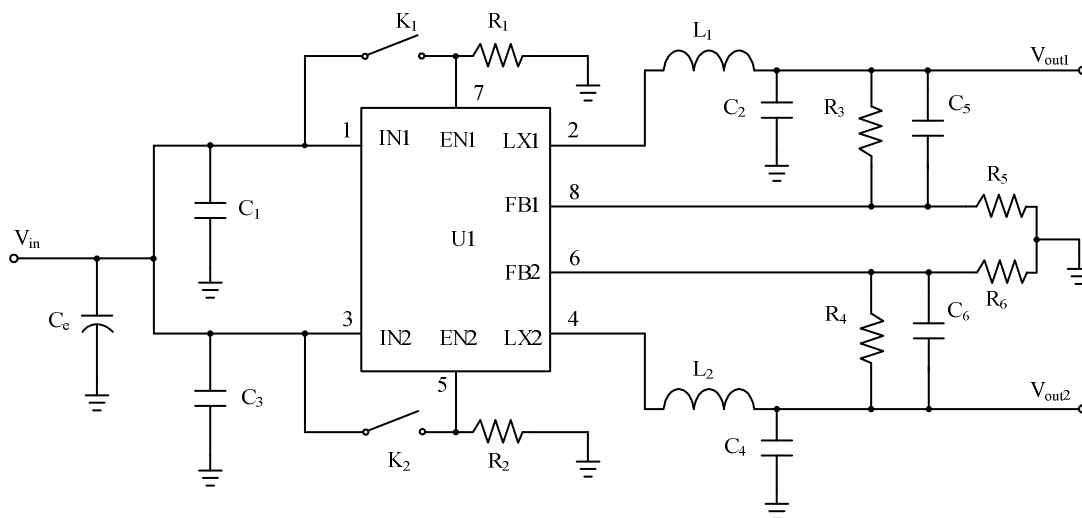


Figure1. Schematic Diagram



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Quick Start Guide (Refer to Figure 2)

1. Connect the output load to VOUT and GND output connectors. Preset the load current to between 0A and 3A.
2. Preset the input supply to a voltage between 3V and 5.5V. Turn the supply off. Connect the input supply to VIN and GND input connectors.

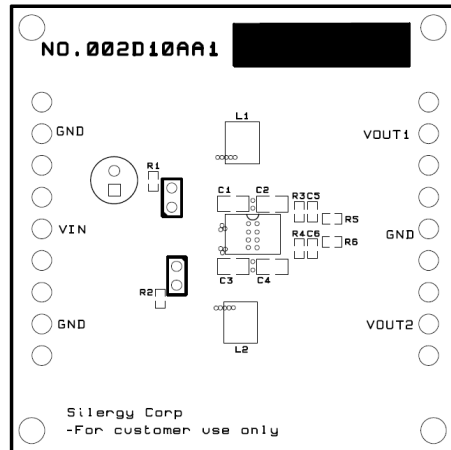
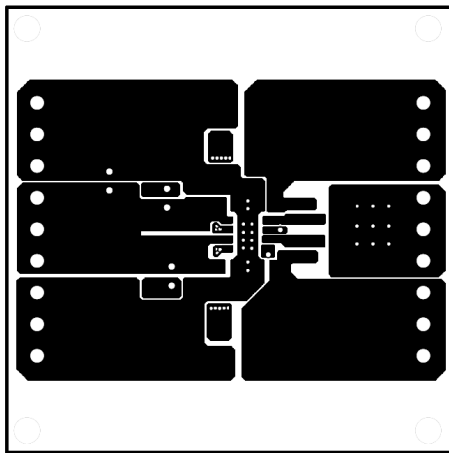
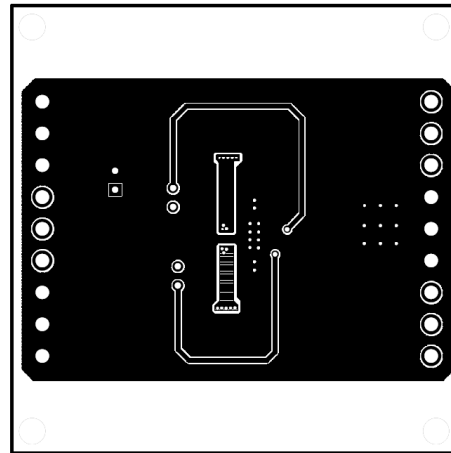


Figure 2. Top Silkscreen

PCB Layout



(a) Top layer



(b) Bottom layer

Figure 3. PCB Layout Plots: (a) top layer, (b) bottom layer

Reference Designator	Description	Part Number	Manufacturer
U1	1MHz ,Dual 3A Sync Buck (SO8E)		
Ce	100uH/16V (electrolytic capacitor)		
L1, L2	2.2uH/5A Inductor	VLC5045-2R2N	TDK
C1, C3,	22uF/6.3V, 0805, X5R	C2012X5R0J226M	TDK
C2, C4	44uF/6.3V, 0805, X5R	C2012X5R0J226M	TDK
C5, C6	22pF/50V, 0603, X5R	C1608C0G1H220J	TDK
R1, R2	1M Ω , 0603		
R3, R4	200k Ω , 1%, 0603		
R5, R6	100k Ω , 1%, 0603		

Output voltage ripple test

A proper output ripple measurement should be done according to Figure 4 setup. Output voltage ripple should be measured across the output ceramic cap near the IC.

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.4.
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.4).

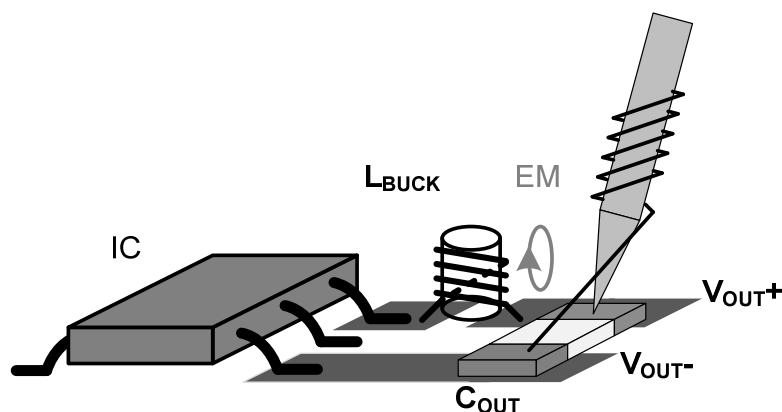


Figure 4. Recommended way to measure the output voltage ripple