



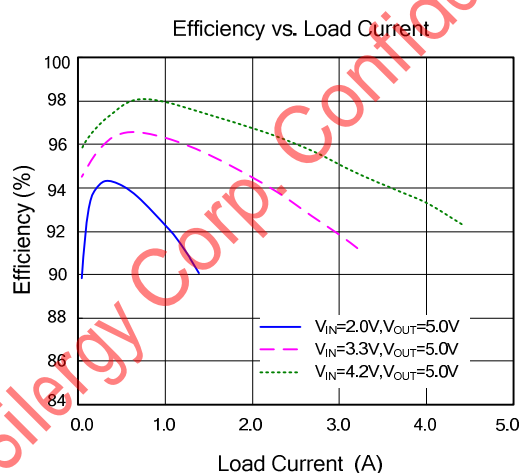
## 5A Peak Current

## Synchronous Boost with Output Disconnect

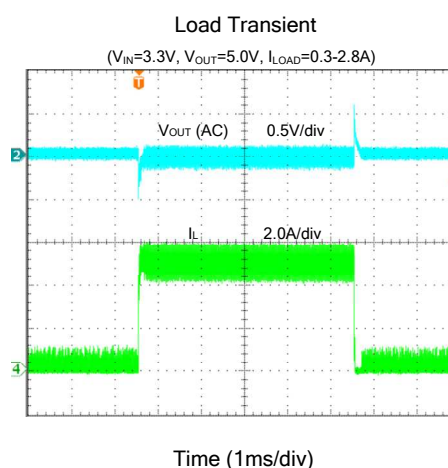
SY7065A is a high efficiency synchronous boost regulator. It can disconnect the output during the shutdown operation.

Input Voltage	Output Current	Output Voltage	Test conditions
1.8-5.0V	2A	5.0V	

### Figure 1. Schematic Diagram



**(a)**



**(b)**

### Figure2. Test Results (Preliminary)

(a) Efficiency vs Load Current

(b) Load Transient:  $V_{OUT}$ (500mV/div),  $I_L$ (2A/div). Load current changes between 0.3A and 2.8A.

## Quick Start Guide (Refer to Figure 3)

1. Preset the input supply to a voltage between 1.8V and 5.0V. Turn the supply off. Connect the input supply to VIN and GND input connectors.
2. Turn on the input supply and measure the output voltage.

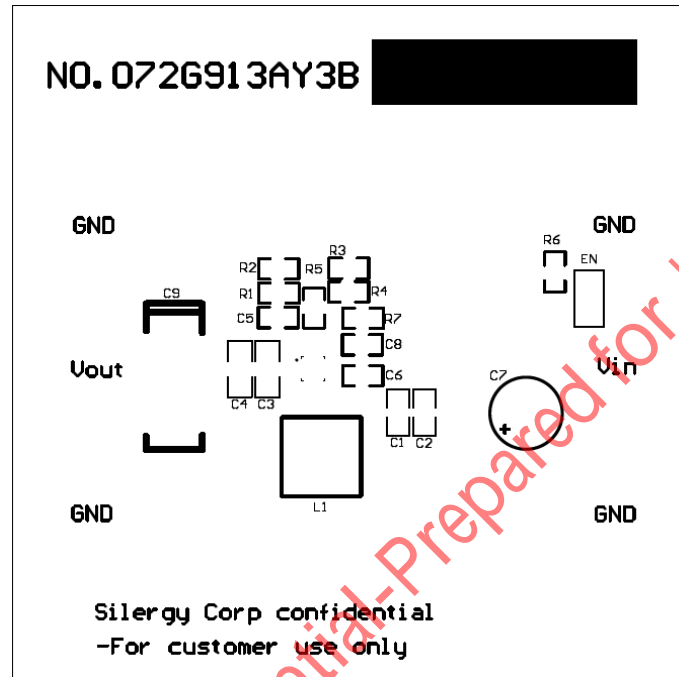


Figure 3. Top Silkscreen

## PCB Layout

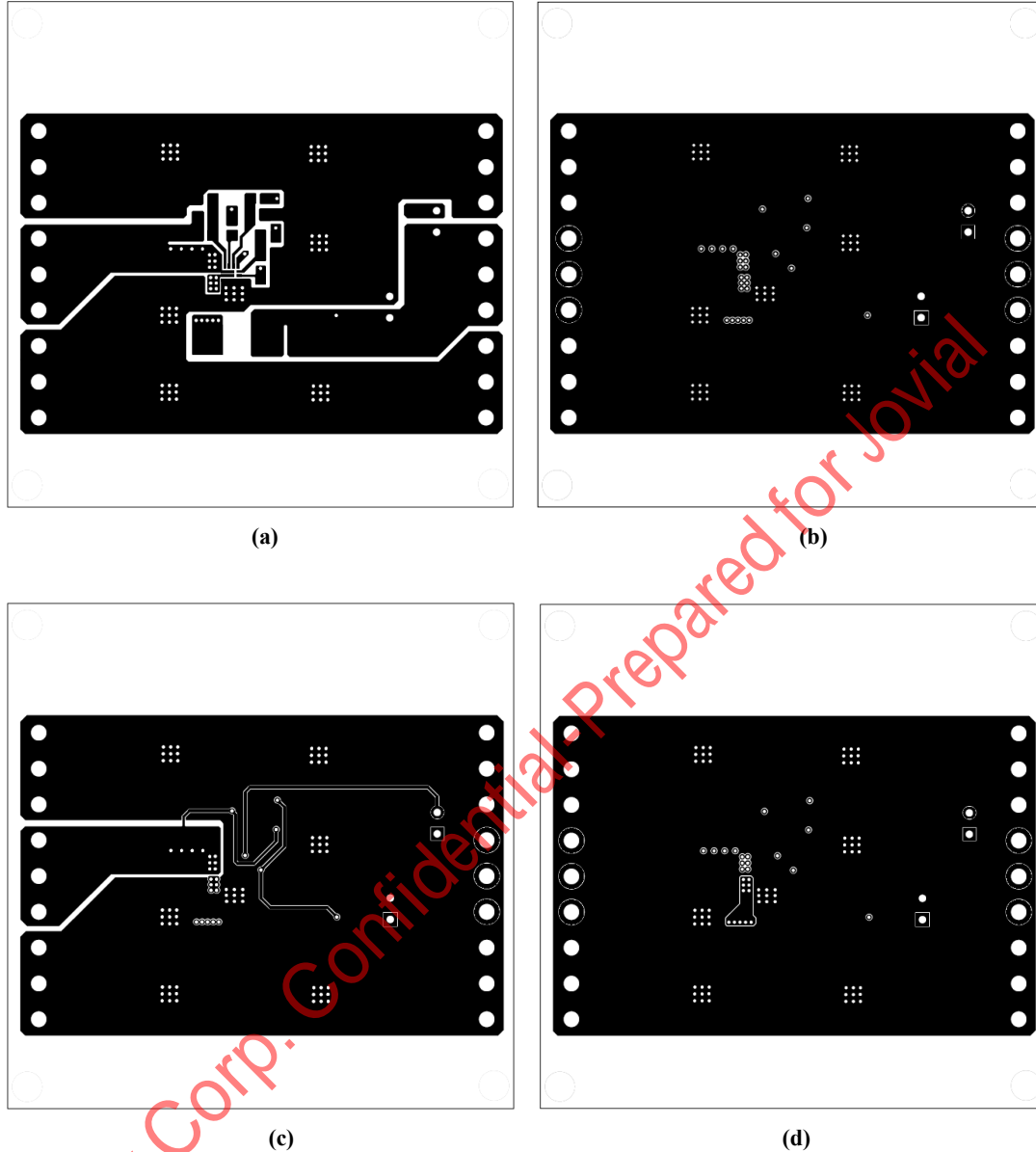


Figure 4. PCB Layout Plots: (a) top layer, (b) middle layer 1, (c) middle layer 2, (d) bottom layer

## BOM List

Reference Designator	Description	Part Number	Manufacturer
L <sub>1</sub>	1.5uH/10A	SPM6530T-1R5M	TDK
C <sub>1</sub> , C <sub>2</sub>	22uF/6.3V, 0805, X5R	C2012X5R1A226M	TDK
C <sub>4</sub>	22uF/10V, 1206, X5R	C3216X5R1A226M	TDK
C <sub>6</sub>	1uF/25V, 0603, X5R	C1608X5R1E105K	TDK
C <sub>8</sub>	1uF/25V, 0603, X5R	C1608X5R1E105K	TDK
C <sub>9</sub>	100uF/25V Electrolytic Capacitor		
R <sub>1</sub>	470kΩ, 0603, 1%		
R <sub>2</sub>	150kΩ, 0603, 1%		
R <sub>3</sub>	300kΩ, 0603, 1%		
R <sub>4</sub>	200kΩ, 0603, 1%		
R <sub>5</sub>	100kΩ, 0603, 1%		
R <sub>6</sub>	1MΩ, 0603, 1%		
R <sub>7</sub>	0Ω, 0603		

## Output voltage ripple test

A proper output ripple measurement should be done according to Figure 5 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<sub>OUT</sub>. Touch the probe tip to the positive node of the C<sub>OUT</sub>. Refer to Figure 5.
2. Minimize the loop formed by C<sub>OUT</sub> 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).

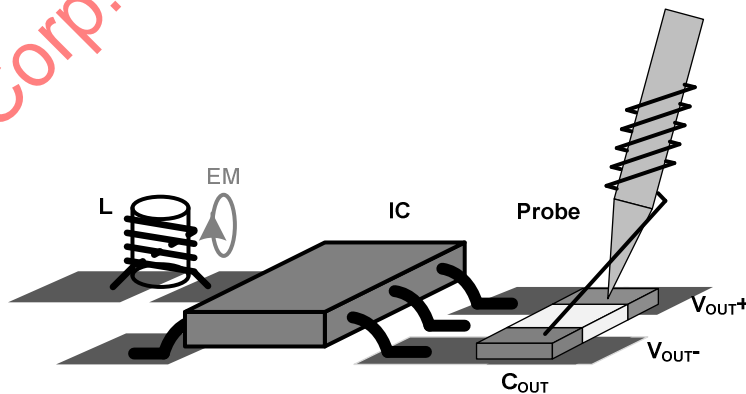


Figure.5 Recommended way to measure the output voltage ripple