



# Evaluation Board DB\_SY7152ABC\_1

## Introduction

The SY7152 is a high efficiency boost regulators targeted for general step-up applications.

## Design Specifications

Input Voltage (V)	Input Current (A)	Output Voltage (V)	Test conditions
3~4.2	2	5	K close

## Schematic

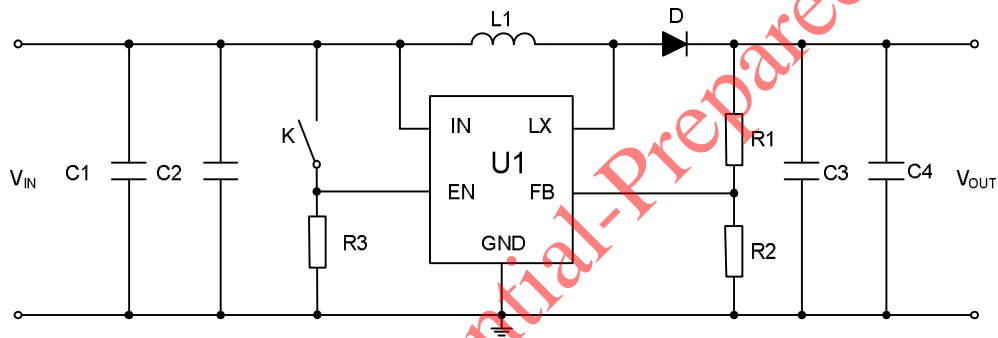
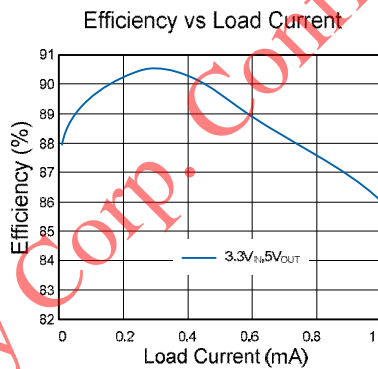
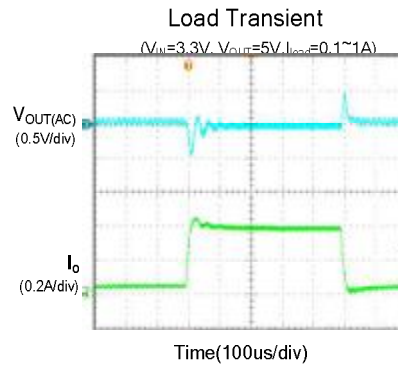


Figure1. Schematic Diagram



(a)



(b)

Figure2. Test Results

(a) Efficiency vs Load Current

(b) Load Transient:  $V_{OUT}$  (0.5V/div),  $I_L$  (0.2A/div). Load current changes between 0.1A and 1A.



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### 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 3V and 4.2V. Turn the supply off. Connect the input supply to  $V_{IN}$  and GND input connectors.
3. Short jumper K.
4. Turn on the input supply and measure the output voltage.

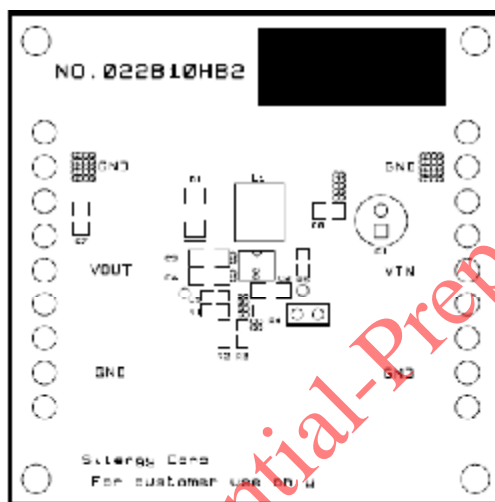


Figure3. Top Silkscreen

### PCB Layout

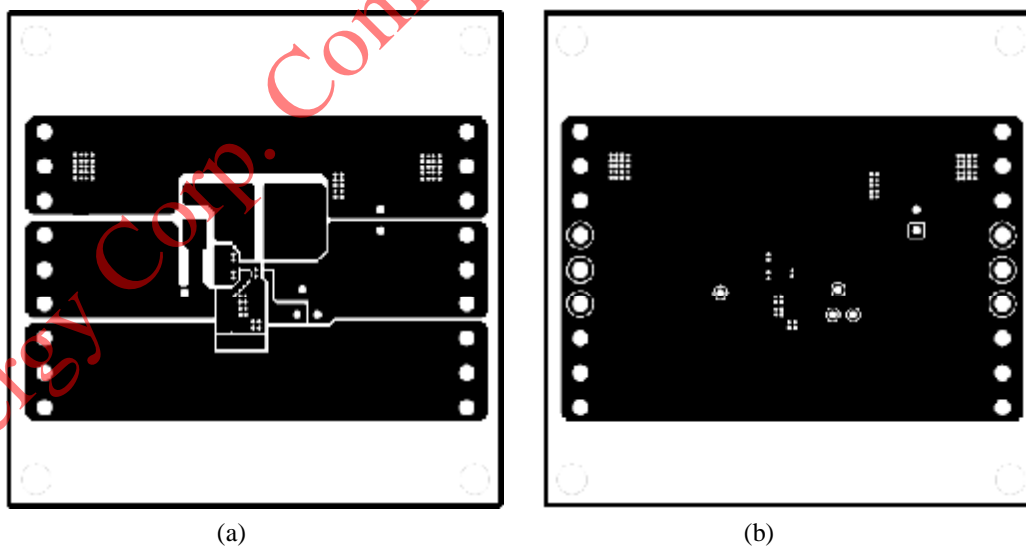


Figure 4. PCB Layout Plots: (a) top layer, (b) bottom layer



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### BOM List

Reference Designator	Description	Part Number	Manufacturer
U <sub>1</sub>	2A, 1MHz Step up (SOT23-6)	SY7152ABC_1	
L <sub>1</sub>	2.2uH/5A	VLC6045-100M	TDK
D	3A/40V, Schottky	SS34	
C <sub>1</sub>	47uF/50V (electronic capacitor)		
C <sub>3</sub>	10uF/25V,1206,X5R		TDK
C <sub>4</sub>	22uF/25V,1206,X5R		TDK
R <sub>1</sub>	100kΩ, 1%, 0603		
R <sub>2</sub>	13.7kΩ, 1%, 0603		
R <sub>3</sub>	1M Ω, 1%, 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>4</sub>. Touch the probe tip to the positive node of the C<sub>4</sub>. Refer to Figure.5.
2. Minimize the loop formed by C<sub>4</sub> terminals, probe tip and ground ring.
3. Change the probing direction to decouple the electromagnetic noise generated from the nearby inductor (Refer to Figure.5).

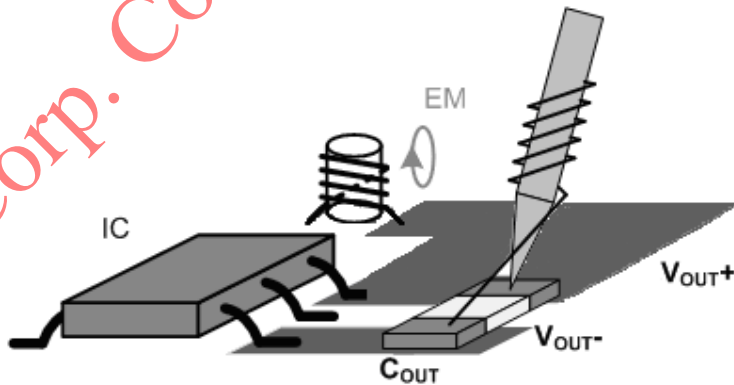


Figure.5 Recommended way to measure the output voltage ripple