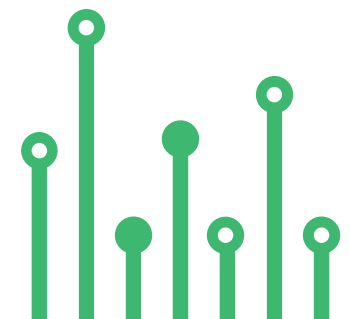THE

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Step up DC-DC Converter 12V Output, 5V Input
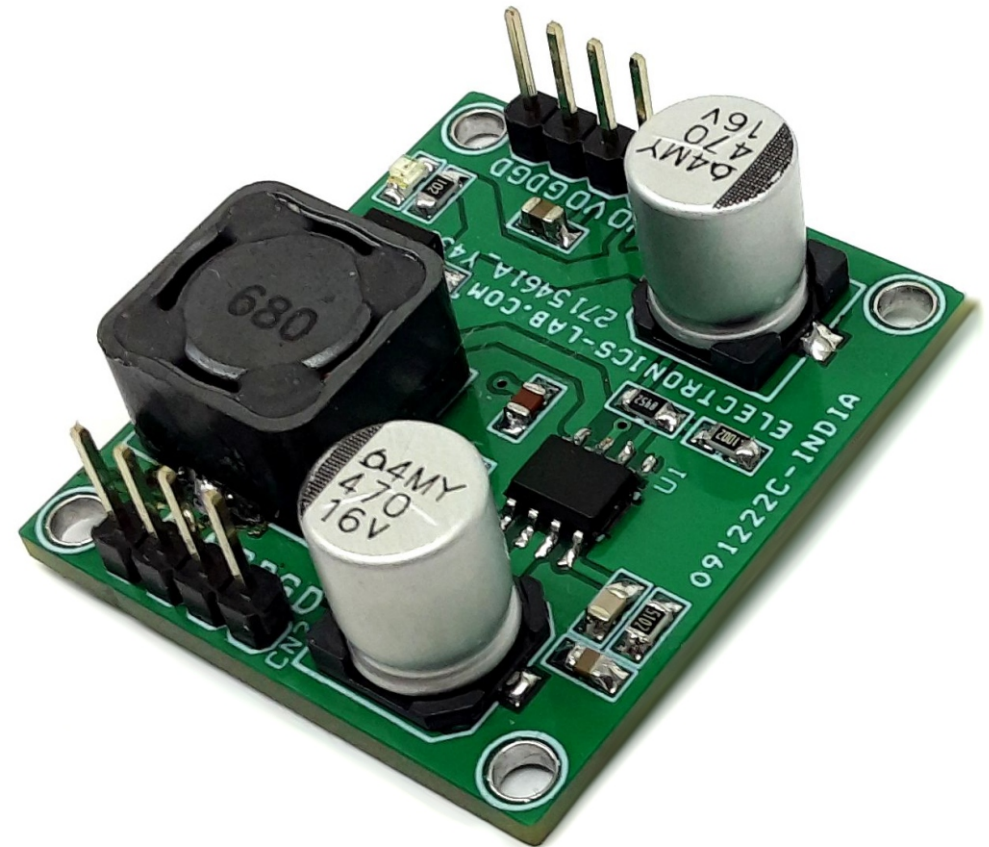
SKU: EL134940

POWER SUPPLY

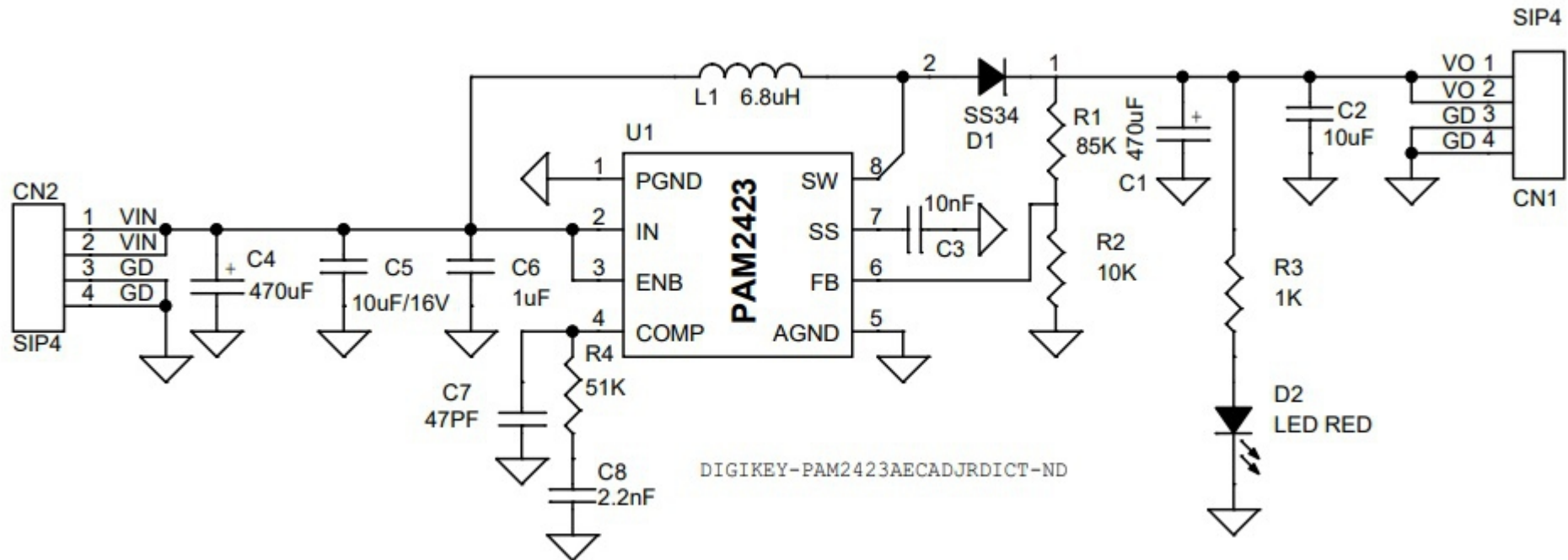# Step up DC-DC Converter 12V Output, 5V Input

This high-performance, fixed frequency, current-mode PWM step-up DC/DC converter efficiently produces 12V from input voltages between 3.6V to 5.5V. The project is built using the PAM2423 chip, which includes an integrated power MOSFET that supports a peak current of up to 5.5A. The IC utilizes simple external loop compensation allowing optimization between component size, cost, and AC performance across a wide range of applications. Additional functions include an externally programmable soft-start function for easy inrush current control, internal over-voltage protection (OVP), cycle-by-cycle current limit protection, under-voltage lock-out, and thermal shutdown.
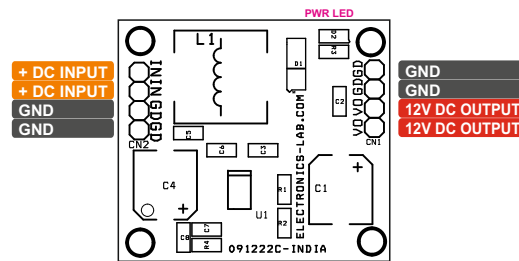
Features

–   Input Supply 5V DC (Range 3.6V to 5.5V)
–   Output 12V DC
–   Load Current Up to 500mA
–   Output Power LED
–   PCB Dimensions 35.08 X 31.12MM
–   Efficiency Up to 90%
–   Operating Frequency 520Khz
–   Soft-Start Function
–   Built-in Over-Voltage Protection (OVP)
–   Under-Voltage-Lockout
–   Under Voltage Lockout Threshold 2.5V, Hysteresis 200mV
–   Over-Current Protection – Threshold 5.5A
–   Thermal Shutdowns – Threshold 150 Degree Cent.
–   4 X 2.5MM Mounting Holes
–   PCB Dimensions 35.08 X 31.12MM

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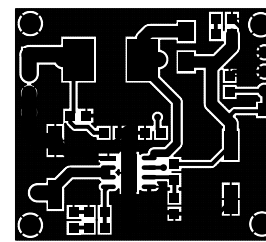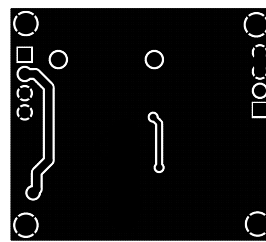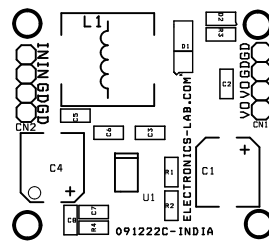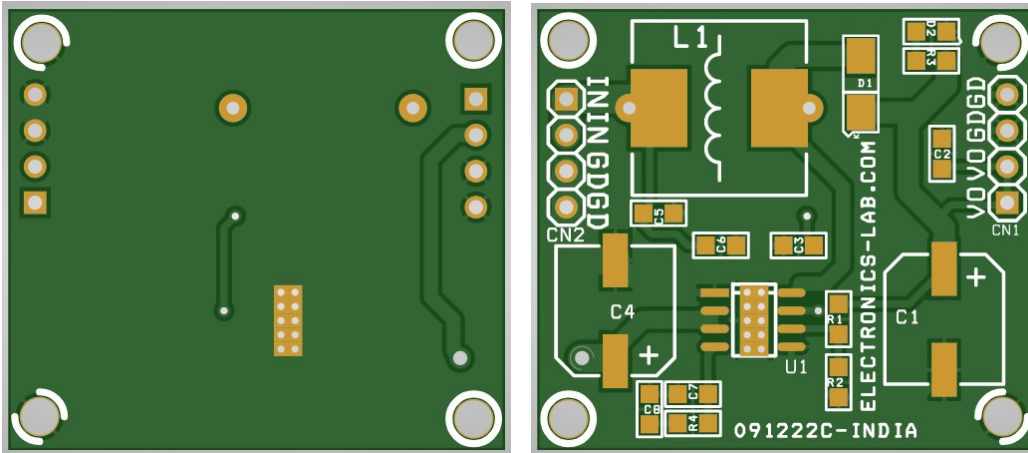# Schematic

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Connections

Connections and Other Details

- CN1: Pin 1 & 2 = V-Output 12V DC, Pin 3 & 4 = GND
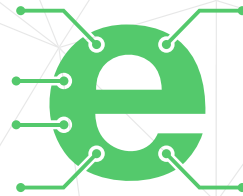- CN2: Pin 1 & 2 = V-Input 5V DC, Pin 3 & 4 = GND
- D2: Output LED

PCB

PCB GERBER FILES AVAILABLE

SILK SCREEN TOP

BOTTOM LAYER

TOP LAYER

PCB DIMENSIONS 35.08 X 31.12MM

Open Source Hardware Projects

Parts List

BOM					
NO.	QNTY.	REF.	DESC.	MANUFACTURER	SUPPLIER
1	1	CN1	2 PIN SCREW TERMINAL PITCH 5.08MM	PHOENIX	DIGIKEY
2	1	CN2	4 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY
3	1	CN3	2 PIN SCREW TERMINAL PITCH 5.08MM	PHOENIX	DIGIKEY
4	1	C1	47uF/63V ELECTROLYTIC	ILLINOIS CAPACITOR	DIGIKEY
5	1	C2	1uF/63V CERAMIC SMD SIZE 1206	MURATA/YAGEO	DIGIKEY
6	1	C3	0.1uF/50V CERAMIC SMD SIZE 0805	MURATA/YAGEO	DIGIKEY
7	3	C4,C5,C6	10uF/63V CERAMIC SMD SIZE 1210	MURATA/YAGEO	DIGIKEY
8	1	D1	RED LED SMD SIZE 0805	LITE ON INC	DIGIKEY
9	1	D2	RED LED SMD SIZE 0805	LITE ON INC	DIGIKEY
10	1	D3	GREEN LED SMD SIZE 0805	DIALIGHT	DIGIKEY
11	1	PR1	5K OR 10K TRIMMER POT	BOURNS	DIGIKEY
12	3	R1,R2,R3	4.7K 5% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY
13	1	R4	0.2E/2W 1% SMD SIZE 2512	MURATA/YAGEO	DIGIKEY
14	1	U1	DRV8251	TI	DIGIKEY

Notes

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