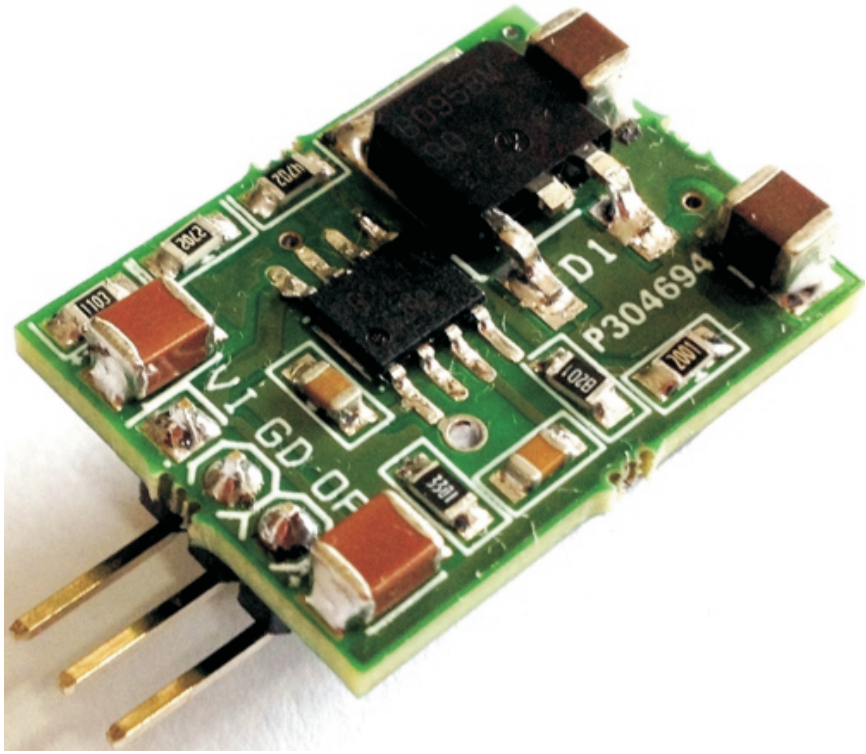
24-48V Input Voltage range, 5V 3A Output Current DC-DC Converter

24-48V Input voltage range 3A output current DC-DC Converter using BD9G341AEFJ IC from ROHM semiconductor, This IC is very ideal for high voltage to low voltage converter with 3A output current, pin configuration of the board with 3 Pin horizontal mounting of the regulator is similar to LM7805 LDO regulator make suitable to use this IC as replacement which can provide more current and take high voltage input.

Different voltage output are possible by changing few components value, refer data sheet for the same. Example circuit can provide 5.1V/3A with input supply range 24-48V DC and operating frequency 200 KHz.

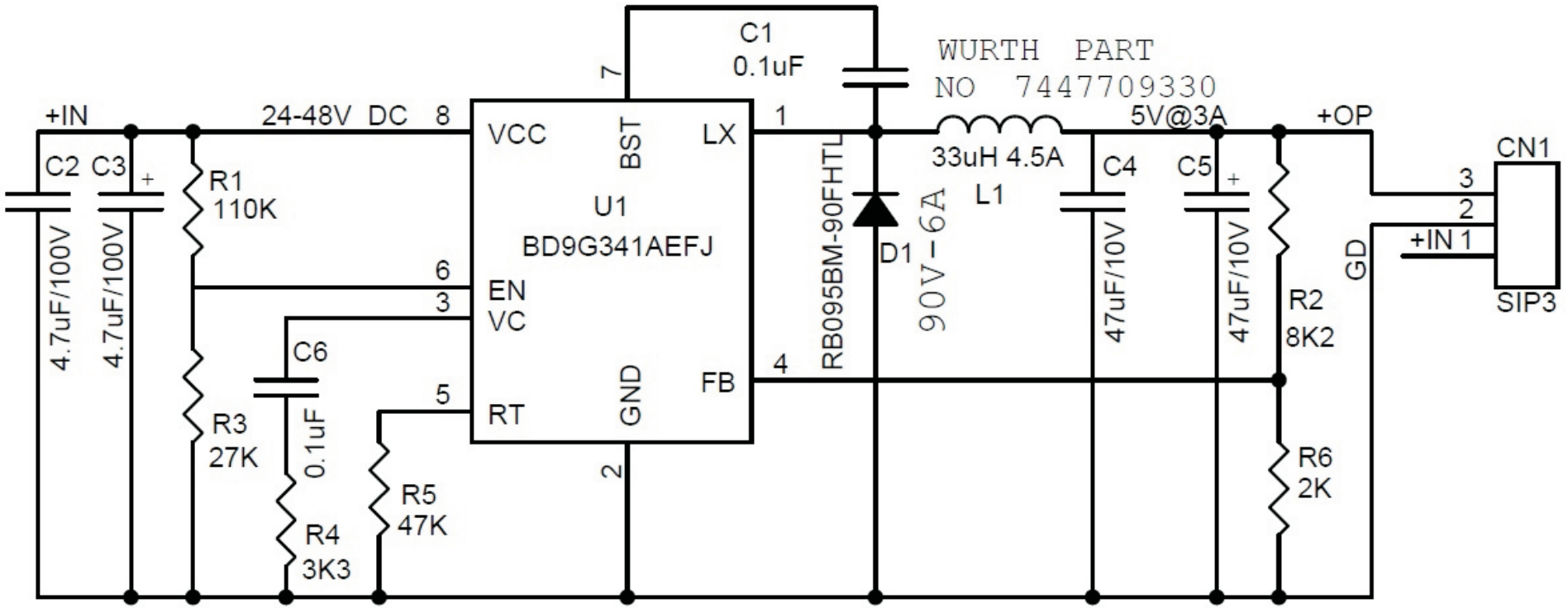
The BD9G341AEFJ is a buck switching regulator with integrated 150mΩ power MOSFET. Current mode architecture provides fast transient response and a simple phase compensation setup. The operating frequency is programmable from 50kHz to 750kHz. Additional protection features are included such as Over Current Protection, Thermal shutdown and under voltage lockout. The under voltage lockout and hysteresis can be set by external resistor.

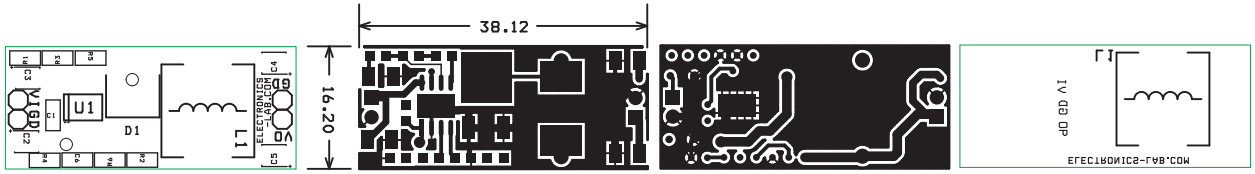
Note: Refer data sheet to change output voltage and input volatge



Features

Supply 24-48V DC Input (12-76V Range)
Output 5.1V/3A
Pin Configuration is directly replacement LM7805
Frequency 200 Khz.


+IN
24-48V DC
C2
C3
4.7uF/100V
4.7uF/100V
R1
110K
R3
27K
C6
0.1uF
R4
3K3
R5
47K
U1
BD9G341AEFJ
VCC
BST
LX
EN
VC
RT
GND
FB
7
8
1
6
3
5
2
4
C1
0.1uF
WURTH PART
NO 7447709330
33uH 4.5A
L1
RB095BM-90FHTL
D1
90V-6A
5V@3A
+OP
C4
47uF/10V
C5
47uF/10V
R2
8K2
R6
2K
GD
CN1
3
2
+IN 1
SIP3



BOM			
SR.	***QNTY.***	***REF.***	***DESC.***
1	1	CN1	3 PIN HEADER CONNECTOR
2	2	C1,C6	0.1uF SMD 0805
3	2	C2,C3	4.7uF/100V SMD 1210
4	2	C4,C5	47uF/10V SMD 1210
5	1	D1	RB095BM-90FHTL DPAK
6	1	L1	33uH 4.5A WURTH
7	1	R1	110K SMD 0805
8	1	R2	8K2 SMD 0805
9	1	R3	27K SMD 0805
10	1	R4	3K3 SMD 0805
11	1	R5	47K SMD 0805
12	1	R6	2K SMD 0805
13	1	U1	BD9G341AEFJ SMD SO8
ALL RESISTOR 1%			