

5V to Dual 12V Step Up DC-DC Converter Using LM2588-ADJ

Lots of op-amp based circuits required dual (symmetrical) power supply. This tiny circuit is simple solution which provides +/-12V DC 300mA from single 5V DC input. The board is based LM2588-ADJ IC from Texas instruments. Step up from 5V to dual 12V is the best part of the circuit since 5V is easily available.

The LM2588-adj regulator IC specifically designed for fly back, step-up (boost) and forward converter applications, this regulator are cost effective and simple to use due to minimum number of external components. The power switch is a 5A NPN device that can stand-off 65V. Protecting the power switch are current and thermal limiting circuits, and an adjustable frequency that can be programmed up to 200Khz. other feature include soft start mode to reduce in rush current during start up, and current mode control for improved rejection of input voltage and output load transient and cycle-by-cycle current limiting.

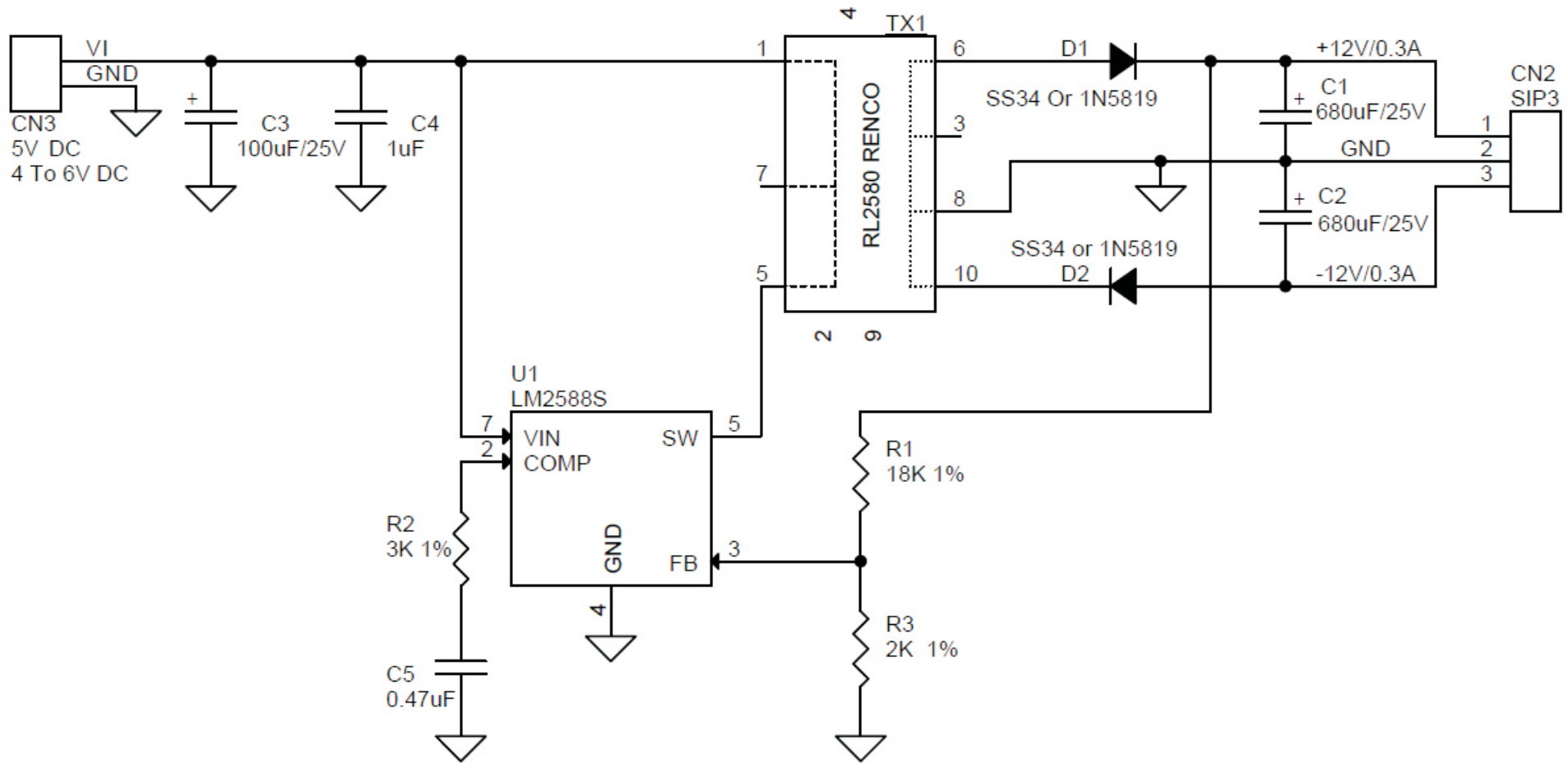
Note : Different Output Voltages are possible by changing Resistors R1, R3 value, refer data sheet of LM2588-adj for more information and calculations.

Features

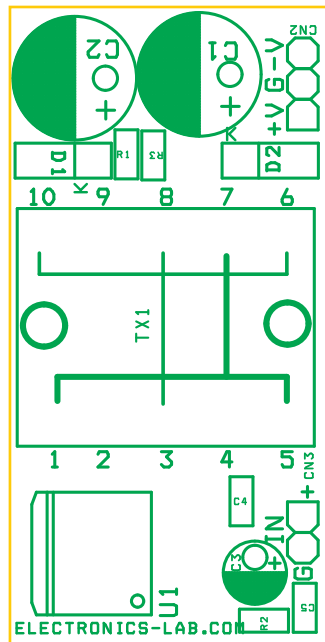
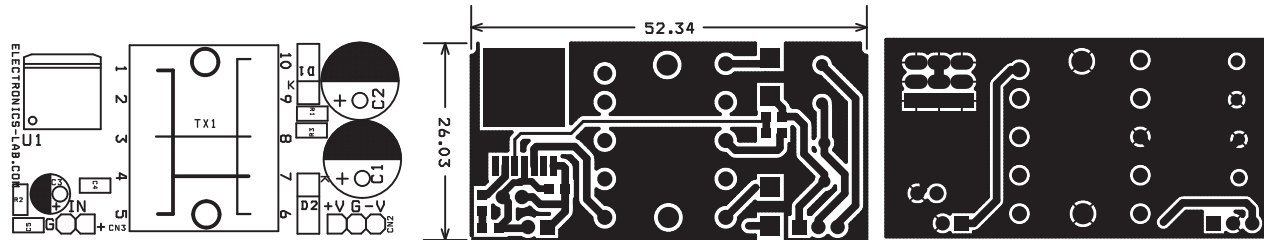
- Input 5V DC (4 to 6V DC Possible)
- Output Dual +/-12V DC 300mA
- 3 Pin Header Connector for output
- 2 Pin Header Connector for Input supply



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-12V DC OUT
GND
+12V DC OUT

5V DC IN (4 to 6V)
GND

BOM			
SR.	QNTY.	REF.	DESC.
1	1	CN2	3 PIN HEADER CONNECTOR
2	1	CN3	2 PIN HEADER CONNECTOR
3	2	C1,C2	680uF/25V
4	1	C3	100uF/25V
5	1	C4	1uF SMD 0805
6	1	C5	0.47uF SMD 0805
7	2	D1,D2	SS34 or 1N5819
8	1	R1	18K 1% SMD 0805
9	1	R2	3K 1% SMD 0805
10	1	R3	2K 1% SMD 0805
11	1	TX1	RL2580 RENCO TRANSFORMER
12	1	U1	LM2588S-ADJ