

## 3V To 5V Boost DC-DC Converter

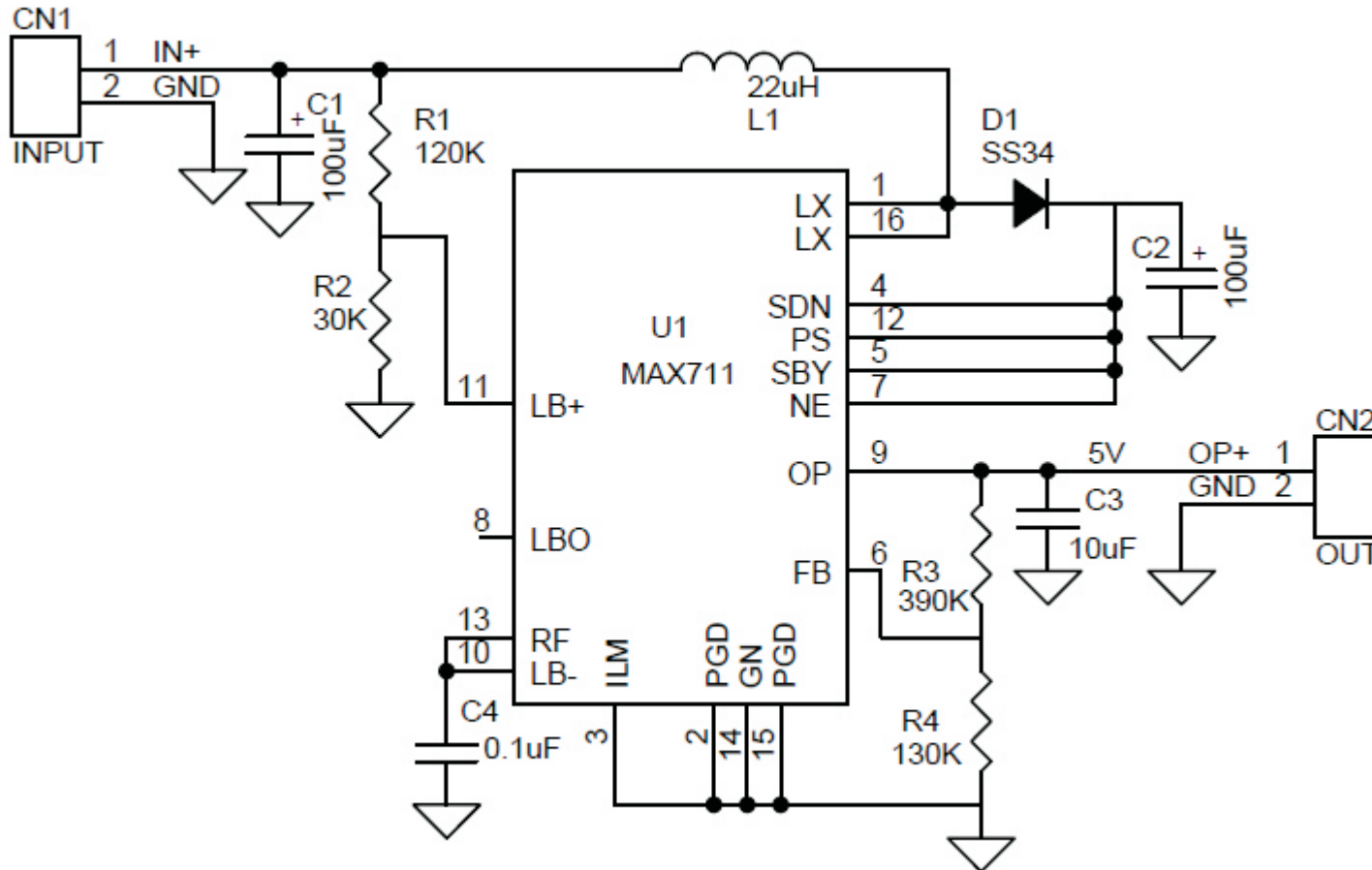
The circuit shown here is compact and high efficient boost converter has been designed for hand-held equipment. The boost converter converts 2 cell (3V) dc power into 5V DC with output load current up to 500mA. Typical efficiency when boosting battery inputs is 85%. Circuit is based on MAX711 integrates a step-up DC-DC converter with a linear regulator to provide step-up voltage conversion. The circuit is optimized for battery applications where the input varies above and below the regulated output voltage. The project has an input range from +1.8V to +11V. The circuit is set for 5V output but it has an adjustable output that can be set from +2.7V to +5.5V with two R3, R4 resistors. The IC contains a comparator for low battery detection. If the voltage at LBI+ falls below that at LBI- (typically connected to REF), LBO goes low. Hysteresis is typically 50mV. Set the low-battery monitor's threshold with two resistors, R1 and R2.

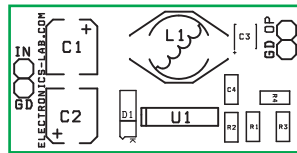
The **MAX711** integrate a step-up DC-DC converter with a linear regulator to provide step-up/down voltage conversion. The step-up switch-mode regulator contains an N-channel power MOSFET switch. It also shares a precision voltage reference with a linear regulator that contains a P-channel MOSFET pass element (Figure 1). Step-Up Operation A pulse-frequency-modulation (PFM) control scheme with a constant  $1\mu\text{s}$  off-time and variable on-time controls the N-channel MOSFET switch. The N-channel switch turns off when the part reaches the peak current limit or the  $4\mu\text{s}$  maximum on-time. The ripple frequency is a function of load current and input voltage.

### Features

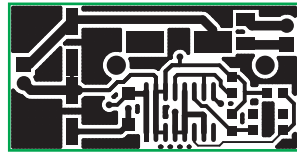
- Supply Input Two AA Cell- 3V DC (1.8V to 11V Possible)
- Output 5V DC (Adjustable 2.5V to 5.5V)
- Output Load 500mA Maximum
- Efficiency battery inputs is 85%



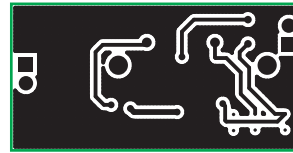




SILK SCREEN TOP



TOP LAYER

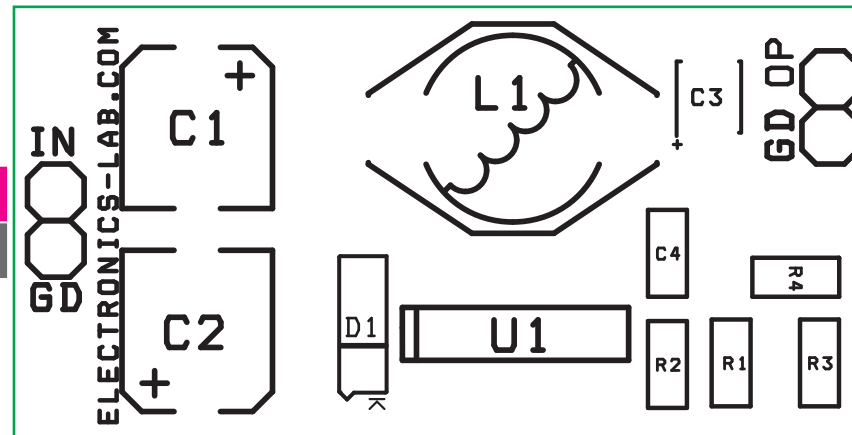


BOTTOM LAYER

BOM			
SR.	QNTY.	REF.	DESC.
1	1	CN1	2 PIN HEADER CONNECTOR
2	1	CN2	2 PIN HEADER CONNECTOR
3	2	C1,C2	100uF/25V SMD
4	1	C3	10uF SMD 1210
5	1	C4	0.1uF SMD 0805
6	1	D1	SS34 SMD
7	1	L1	22uH -1A SMD 12MM
8	1	R1	120K SMD 0805
9	1	R2	30K SMD 0805
10	1	R3	390K SMD 0805
11	1	R4	130K SMD 0805
12	1	U1	MAX711 SMD SO16

3V BATT IN

GND



5V DC OUTPUT

GND