

LM2622 Step-Up DC/DC Converter Evaluation Board

National Semiconductor
Application Note 1198
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The LM2622 is a step-up converter with an adjustable switching frequency and a low power shutdown feature. The evaluation board was designed for boosting a 1-cell Li-Ion battery input voltage to a regulated output of 5V. The board includes 2 jumpers: One selects whether the part is running or is in shutdown mode, and the other selects a switching frequency

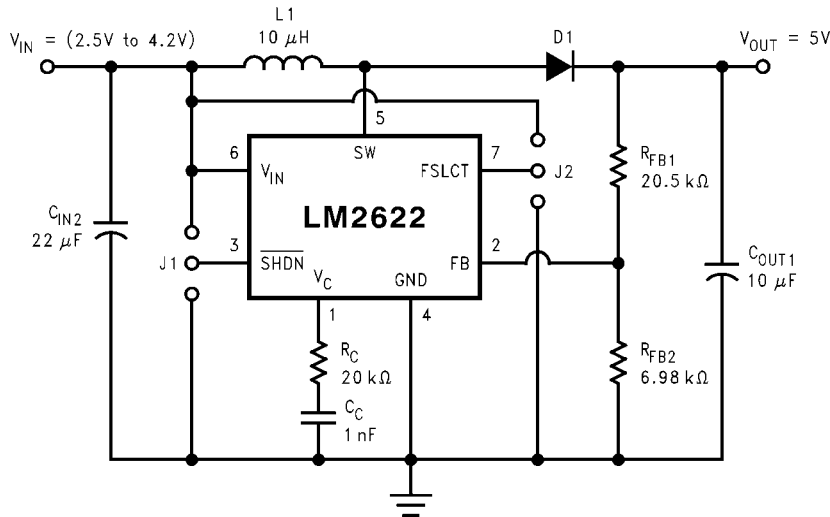
of either 600 kHz or 1.3 MHz. The component values on the board are designed for 600 kHz operation, but will work well at 1.3MHz. Smaller component values can generally be used if the part is operated at the higher frequency. The bill of materials and the schematic follows:

TABLE 1. Bill of Materials

Designator	Description	Manufacturer	Model Number
U1	Step-Up Regulator	National Semiconductor	LM2622
L1	Inductor (1.2A average rating)	Sumida	CDRH5D18-100NC
C _{IN2}	Input Capacitor (22 μ F, 10V rating)	Taiyo-Yuden	LMK432BJ226K
C _{OUT1}	Output Capacitor (10 μ F, 16V rating)	Taiyo-Yuden	EMK325BJ106K
D1	Output Diode	International Rectifier	15MQ040N
R _{FB1}	20.5 k Ω Feedback Resistor		
R _{FB2}	6.98 k Ω Feedback Resistor		
R _C	20 k Ω Compensation Resistor		
C _C	1 nF Compensation Resistor		

Because of the capacitor ratings, the input to the board should always be 10V or less and the output should not be set to higher than 16V. Higher voltages (to the IC limits) may be

used if higher voltage capacitors are used. A larger inductor may also be required if the input current is expected to exceed 1.2A, or if output short circuit conditions are anticipated.



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FIGURE 1.

Notes

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