



eDesignSuite

Untitled

Converter Specifications

IC: LED5000
Topology: floating boost
Input: 11 - 13 V
LED Device: Custom
Number of LED: 1
Number of Strings: 1
VF: 36 V **IF:** 100 mA **Rd:** 360 Ω

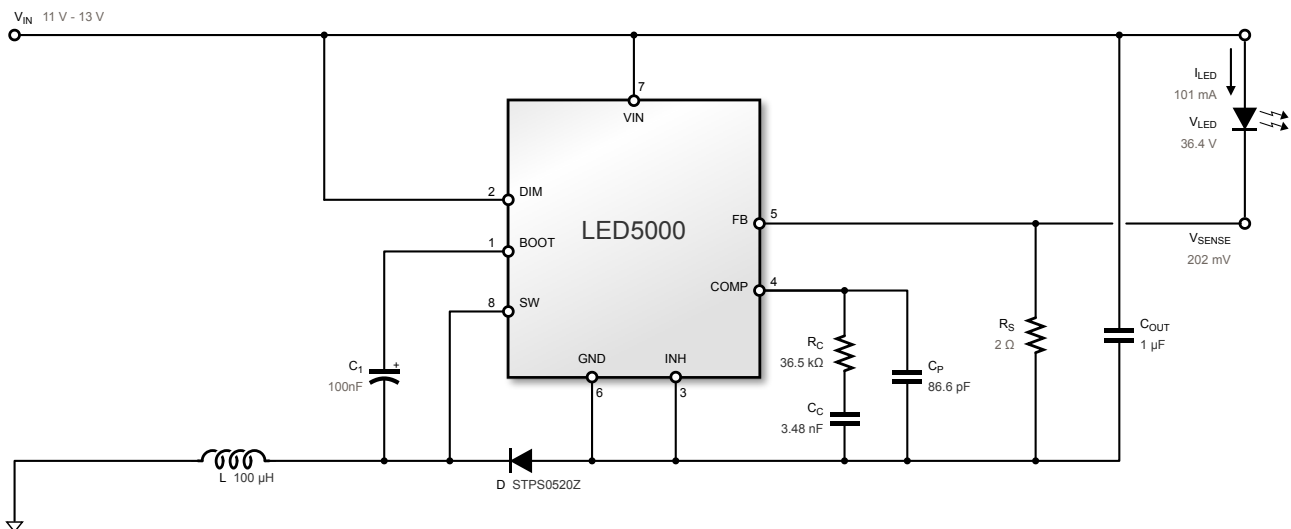
Operating Conditions

@Vin - min 11 V / max 13 V: 12V
@Ta - min -40 °C / max 150 °C: 25°C



Actuals

fsw: 800 kHz
Ton: 873.36 ns
ILed: 101 mA
bandwidth: 1.16 kHz
phase margin: 100.08°
IC Tj: 41.1 °C
 ΔTj : 16.1 °C

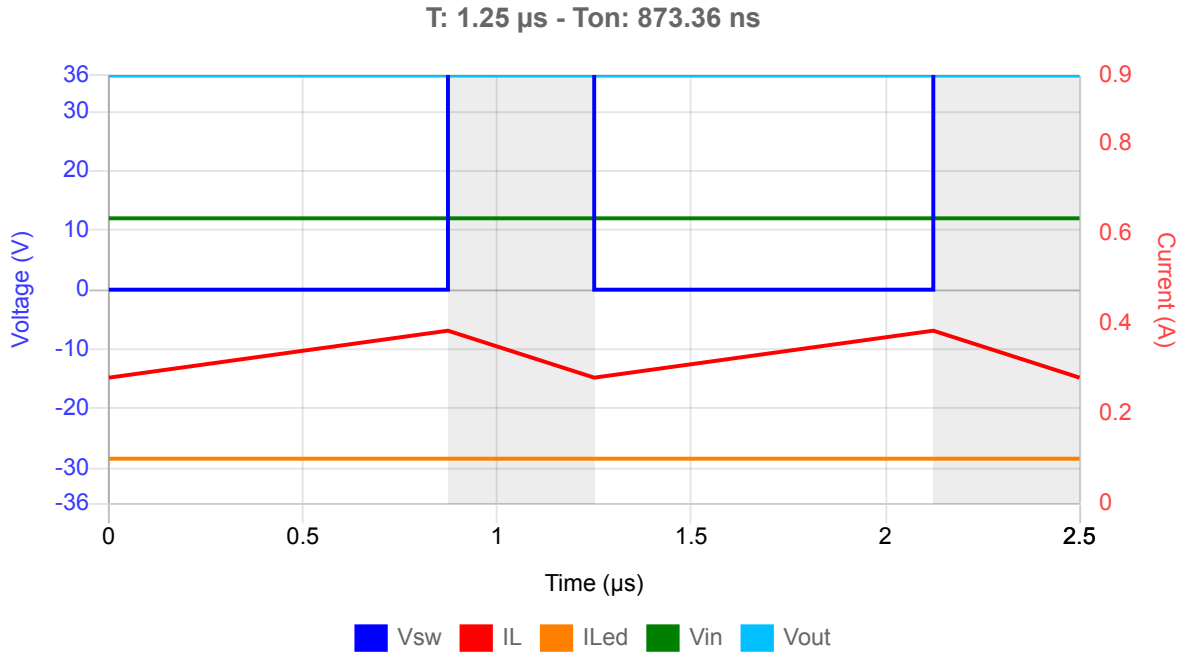
Circuit - Schematic



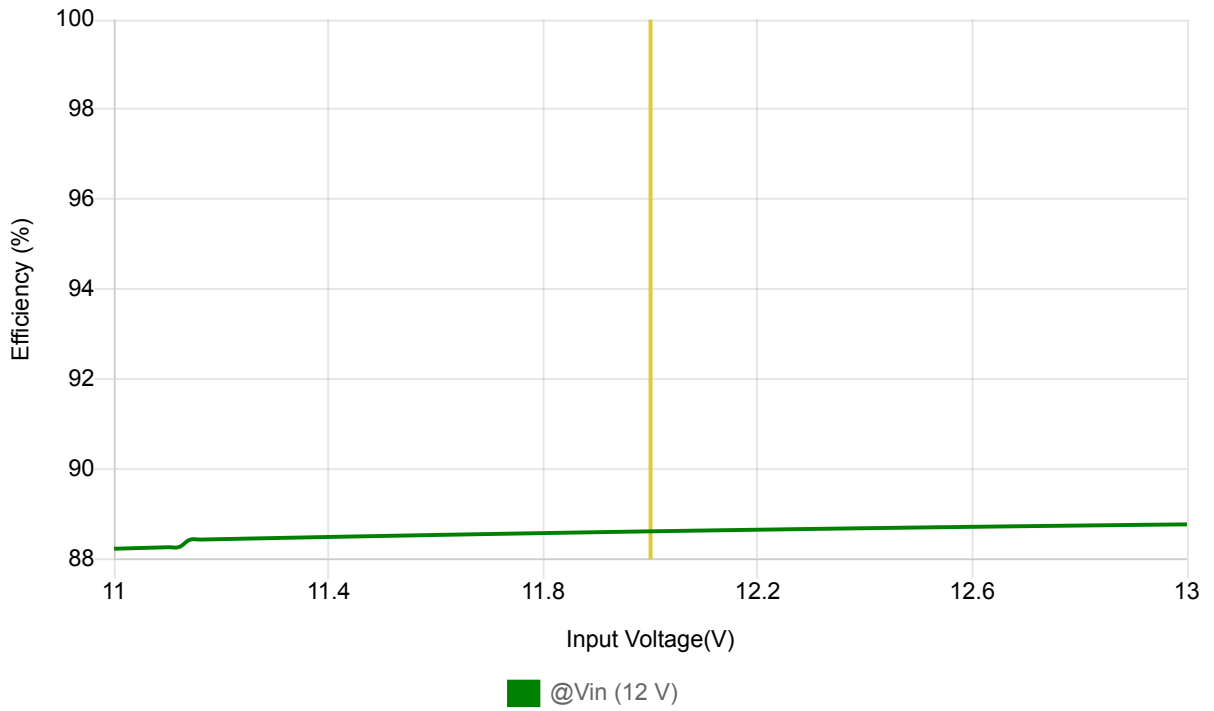
Circuit - BOM

Type	Ref	Value	Description	
LED Device	LED	LED	LED	36 V - 100
IC 	IC	LED5000	LED5000	LED5000 -
Capacitor	Cout	1 μ F	1 μ F	50 V - 10%
Inductor	L	100 μ H	100 μ H	3.6 A - Coil
Diode 	D	STPS0520Z	STPS0520Z	500 mA, 20
Capacitor	Cc	3.48 nF	3.48 nF	3.48 nF
Resistor	Rc	36.5 k Ω	36.5 k Ω	36.5 k Ω
Capacitor	Cp	86.6 pF	86.6 pF	86.6 pF
Capacitor	C1	100nF	100nF	50 V
Resistor	Rs	2 Ω	2 Ω	2 Ω - PLo:

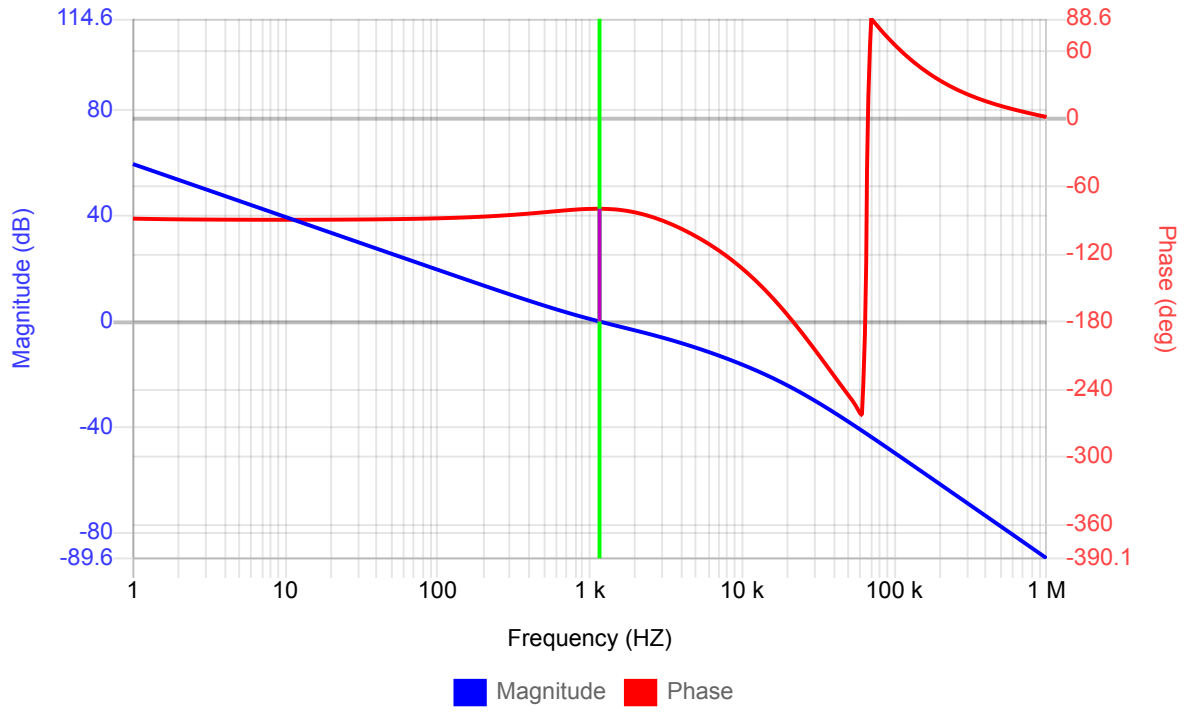
Simulation: duty cycle 69.9 %



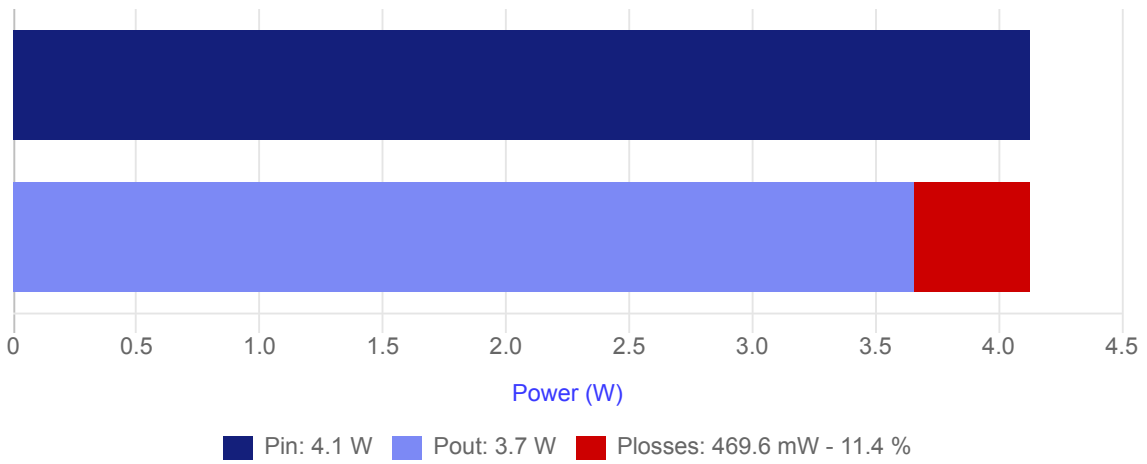
Efficiency: 88.6 %



Bode: $f_c = 1.16 \text{ kHz}$ - phase margin = 100.1°



Efficiency: 88.6 %



Losses details

