



BOOST LED Driver Demoboard with High Dimming Ratio and Excellent Current Regulation

Input 12VDC, Output 0.225A/0.375A/0.600A, 36V (22W max.)

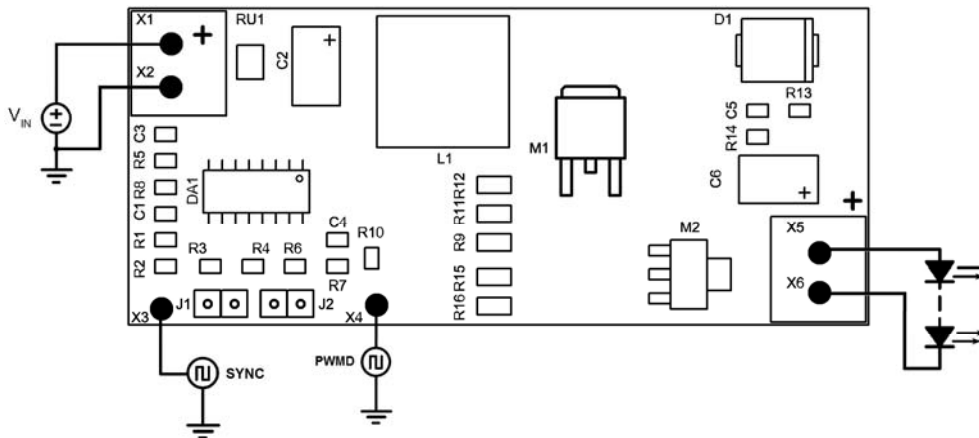
General Description

The AN9911DB3 demoboard uses Angstrom's AN9911 in a BOOST topology to drive LED string voltages higher than the input voltage. The converter has a very good initial regulation (+/-2%), and excellent line and load regulation over the entire input and output voltage range (<+/-2%). The full load efficiency of the converter is typically greater than 90%.

The AN9911DB3 is also protected against open LED and output short circuit conditions. It is protected against over load conditions by limiting the input current. It has an excellent PWM dimming response. The switching frequency of the AN9911DB3 can be synchronized to other HV9911 boards or to an external 165kHz clock by connecting the clock to the SYNC pin of the AN9911DB3.

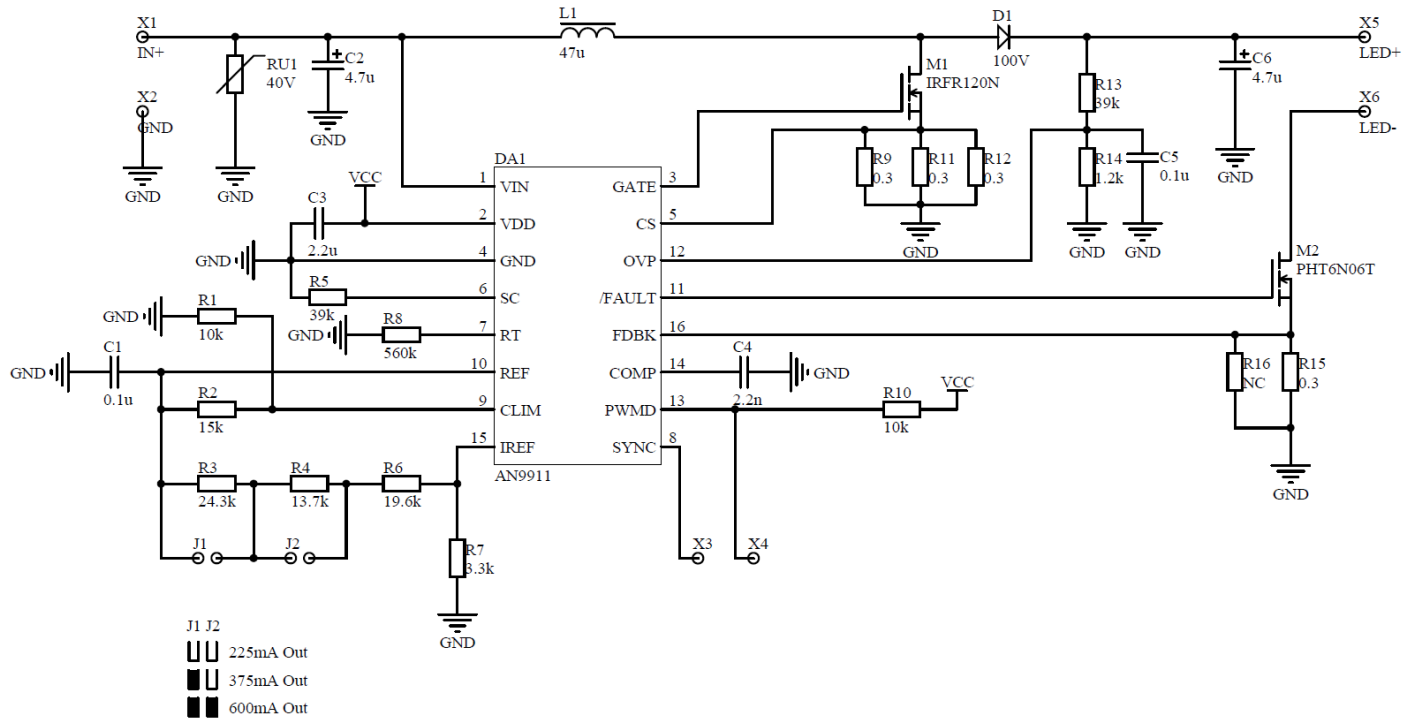
Specifications	
Input voltage	12VDC
Output voltage:	36VDC
Output current:	0.225A/0.375A/0.600A
Output power:	22W
Efficiency (full load)	90%
Output 100Hz current ripple	<1%
Output short circuit protection	Yes
Open LED protection	Yes
Switching frequency	165kHz
Dimensions:	70 x 30mm

Board Layout and Connections



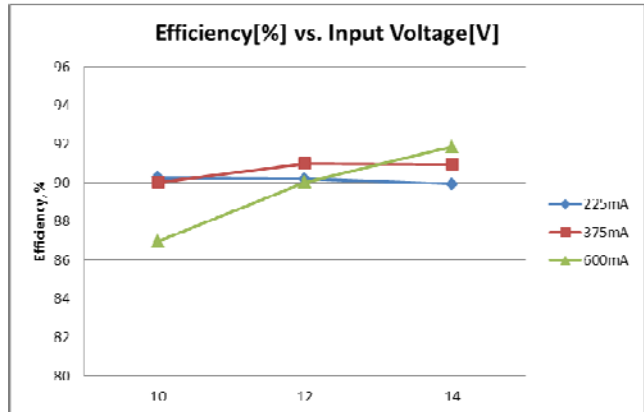
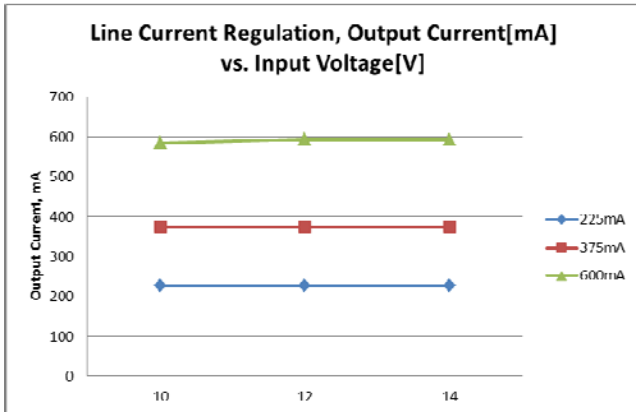


Schematic Diagram



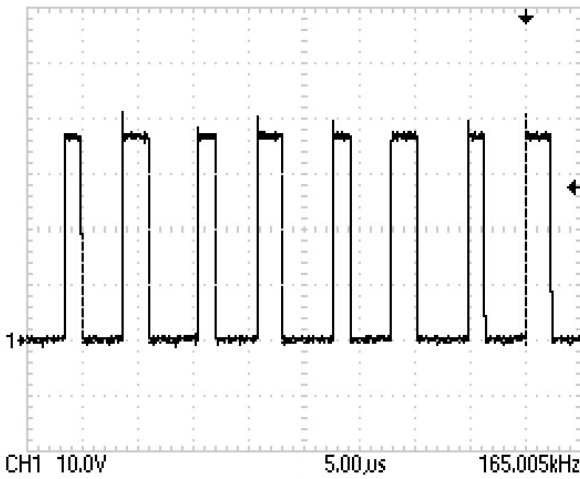


Typical Characteristics

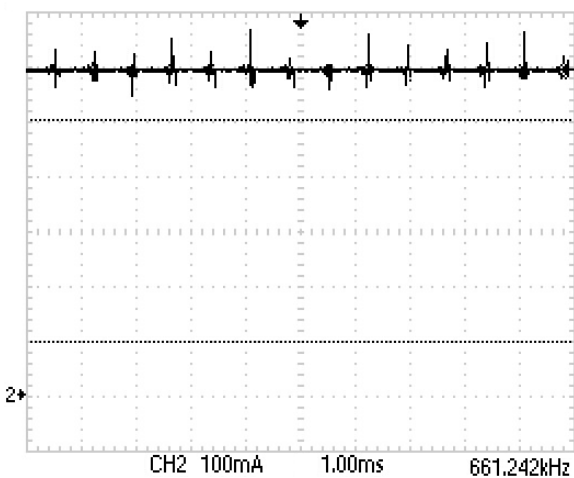


Waveforms

Drain voltage

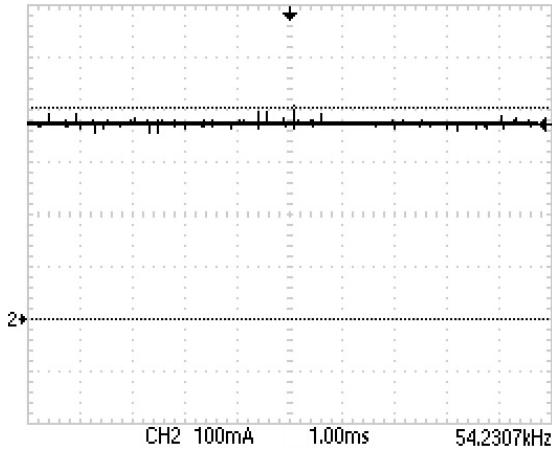


Output current (600mA)

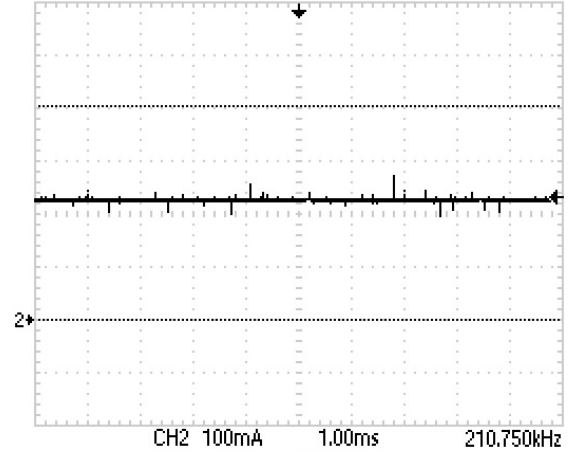




Output current (375mA)

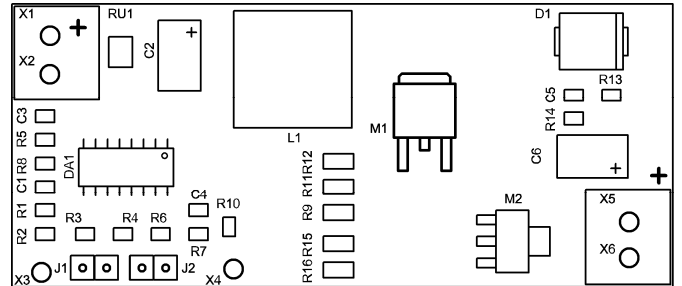
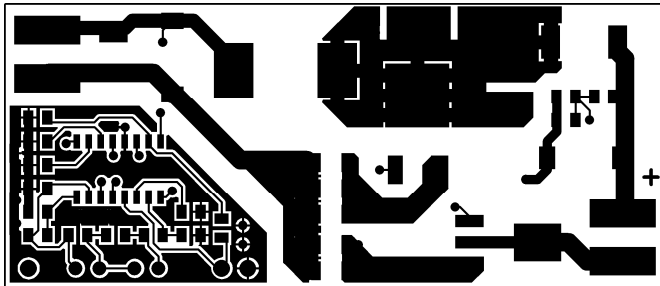


Output current (225mA)

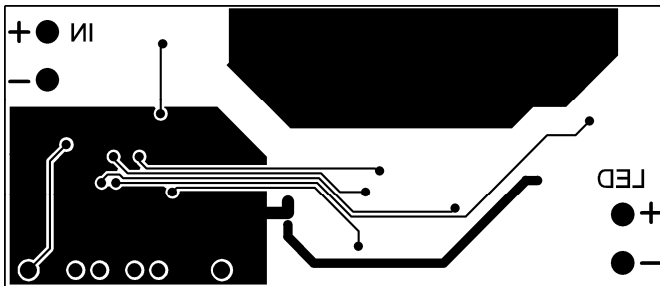


PCB Layout

Top



Bottom



**Bill of Materials**

Qty	REF	Description	Manufacturer	Product Number
2	C1, C5	Cap Cer X7R 0805 0.1uF 50V	-	-
2	C2, C6	Cap Tantalum Type D 4.7uF 50V	-	-
1	C3	Cap Cer X7R 0805 2.2uF 25V	-	-
1	C4	Cap Cer NP0 0805 2.2nF 25V	-	-
1	D1	Diode Shottky SMC 80V 3A	Micro Commercial Co	SK38-TP
1	DA1	IC LED Driver SO-16	Angstrem	AN9911
2	J1, J2	Jumper PLS-2	-	-
1	L1	Inductor 47uH 2.95A	Coiltronics	DR127-470-R
1	M1	Transistor N-MOS DPAK 100V 9.1A 0.21Ohm 16.7nC	International Rectifier Corporation	IRFR120N
1	M2	Transistor N-MOS SOT223 50V 5.5A 0.15Ohm 5.6nC	Philips Semiconductors	PHT6N06T
2	R1, R10	Res 0805 1% 10 kOhm	-	-
1	R2	Res 0805 1% 15 kOhm	-	-
1	R3	Res 0805 1% 24.3 kOhm	-	-
1	R4	Res 0805 1% 13.7 kOhm	-	-
2	R5, R13	Res 0805 1% 39 kOhm	-	-
1	R6	Res 0805 1% 19.6 kOhm	-	-
1	R7	Res 0805 1% 3.3 kOhm	-	-
1	R8	Res 0805 1% 560 kOhm	-	-
4	R9, R11, R12, R15	Res 1206 1% 0.3 Ohm	-	-
1	R14	Res 0805 1% 1.2 kOhm	-	-
-	R16	Open	-	-
1	RU1	Varistor 1210 40V 250A 2.3J	Epcos	B72530T400K62
2	X1, X5	Terminal Block 16A 300V	Deca Switchlab	MA522-500M2