

# Demo Board

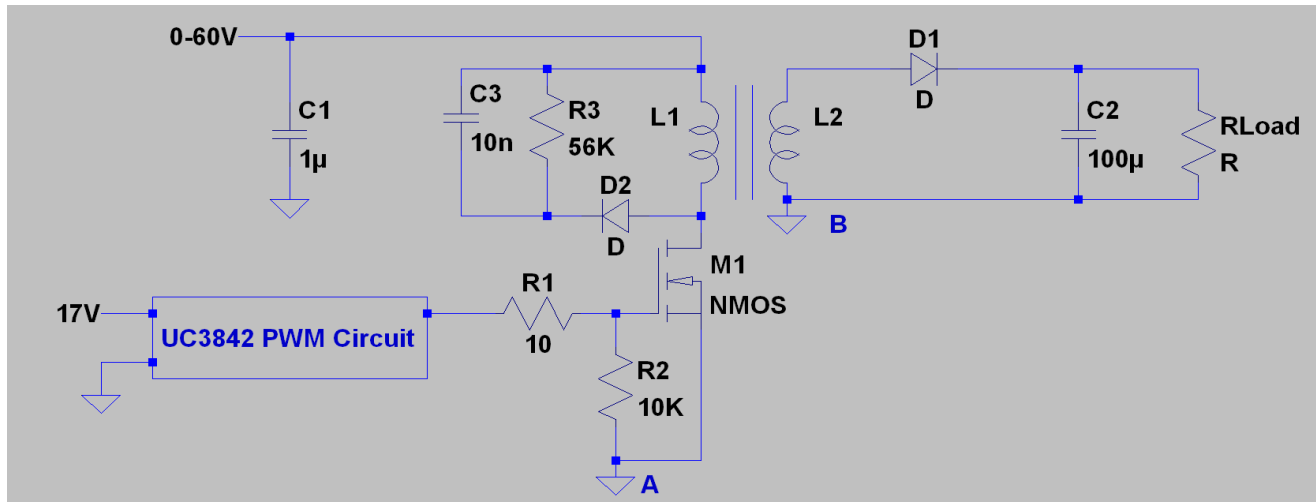
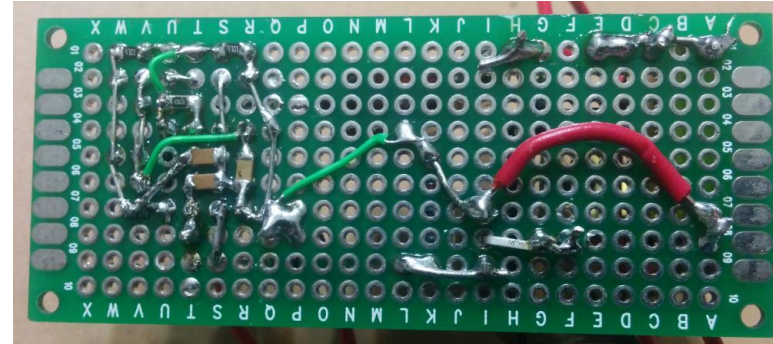
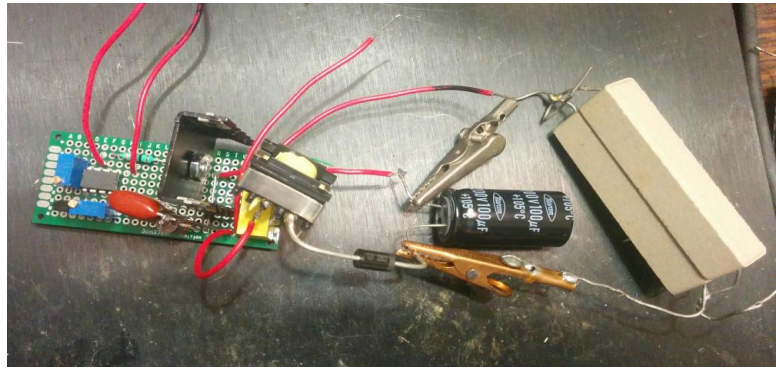
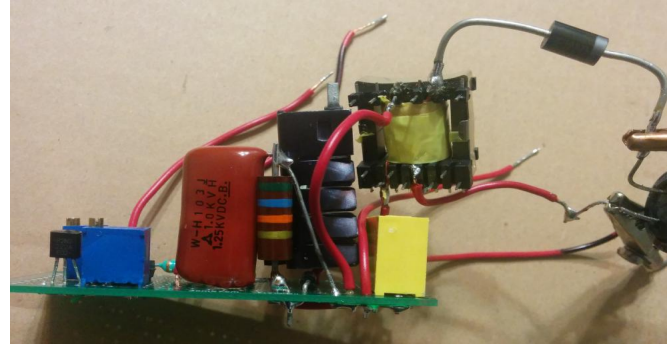
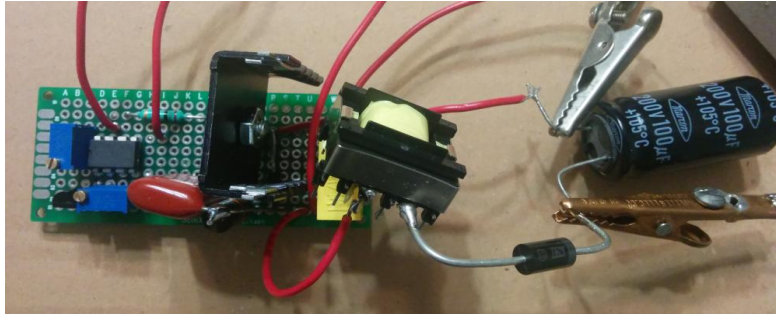
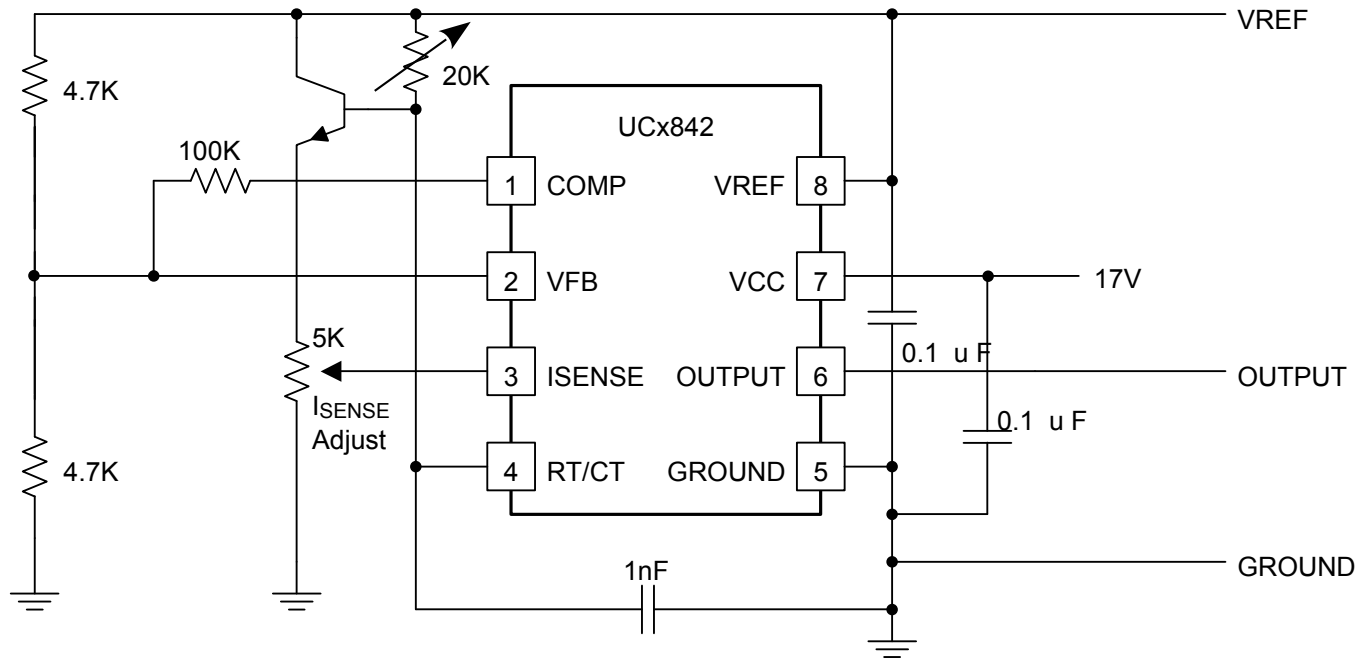
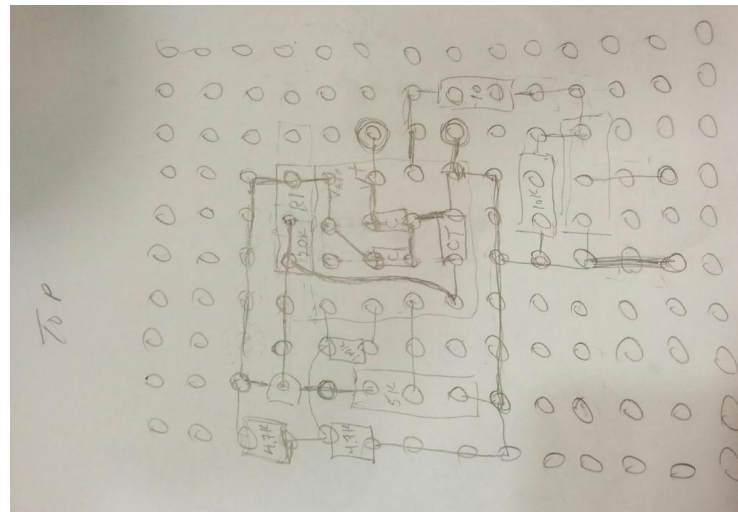


Figure 1: UC3842 circuit



This was a tentative board layout. The main switching transistor is on the right hand side. A good layout with short lead lengths and careful grounding is necessary for proper function of the demo board. 17V was used as the power supply for the IC. A BK Precision 1671A variable supply was used for the power section.



## Demo BOM

Component	Part Count	Digikey Part #	Amazon Part Ref	Alternate	Price
Ferrite Core N87	2	495-5423-ND			\$0.88
Ferrite Core N27	2	495-5421-ND			\$0.76
E20x10x6 Bobbin	1	495-5367-ND			\$1.27
Core Clip	1	495-5363-ND			\$0.75
#32 AWG magnet wire	1		32SNSP.125		\$7.26
PCB (assortment)	1		0647726921242		\$10.99
UC3842	1	UC3842BNGOS-ND			\$0.62
STTH102 Diode 200V 1A	1	497-3666-1-ND			\$0.51
STTH3R02RL Diode 200V 3A	1	497-5257-1-ND			\$0.44
100nF Cap X7R 50V	2	399-1249-1-ND		BC1101CT-ND	\$0.22
4.7K Resistor	2	311-4.70KFRCT-ND		CF14JT4K70CT-ND	\$0.20
5K, 20K Potentiometer (kit)	1		HDR-3296-1		\$11.97
10K Ohm Resistor	1	311-10KERCT-ND			\$0.11
100K Resistor	1	311-100KFRCT-ND		CF14JT100KCT-ND	\$0.10
10 Ohm Resistor	1	CFM12JT10R0		RNCP1206FTD10R0	\$0.10
1nF Cap X7R 100V	1	1276-1772-1-ND		BC1108CT-ND	\$0.11
200V 9.3A Mosfet	1	IRF630NPBF-ND			\$1.02
56K 2W Resistor	1	56KW-ND			\$0.29
10nF 1.25KVdc	1	495-2316-ND			\$0.41
1uF 250V Capacitor	1	1EF2105-ND			\$0.58
2N2222 Transistor	1	KSP2222ABUFS-ND			\$0.21
100uF 200V Electrolytic Cap	1	399-6551-ND			\$1.07
Heatsink	1	HS336-ND			\$0.75
1K Ohm10W Resistor	4	1.0KW-10-ND			\$2.56
#6 machine screw 3/8"	1			Home Depot	\$1.18
#6 nut	1			Home Depot	\$1.18
#22AWG Solid Wire	1		HUWBUN100FT6		\$36.95
#18AWG Stranded Wire	1		4330098879		\$18.55
Mylar Tape	1		a16110900ux0371		\$12.81

\$113.85

### Flyback Transformer

Primary	6 x #32	20 Turns
Secondary	6 x #32	20 Turns
Gap	4 layers	Mylar tape

Circuit parameters:

$V_{in} = 23.4V$   
 $V_{out} = 70.0V$   
 $P_{out} = 10W$   
 $L_{pri} = 60\mu H$   
 $T = 5.2\mu S$   
frequency  $\sim 190KHz$

Figure 2

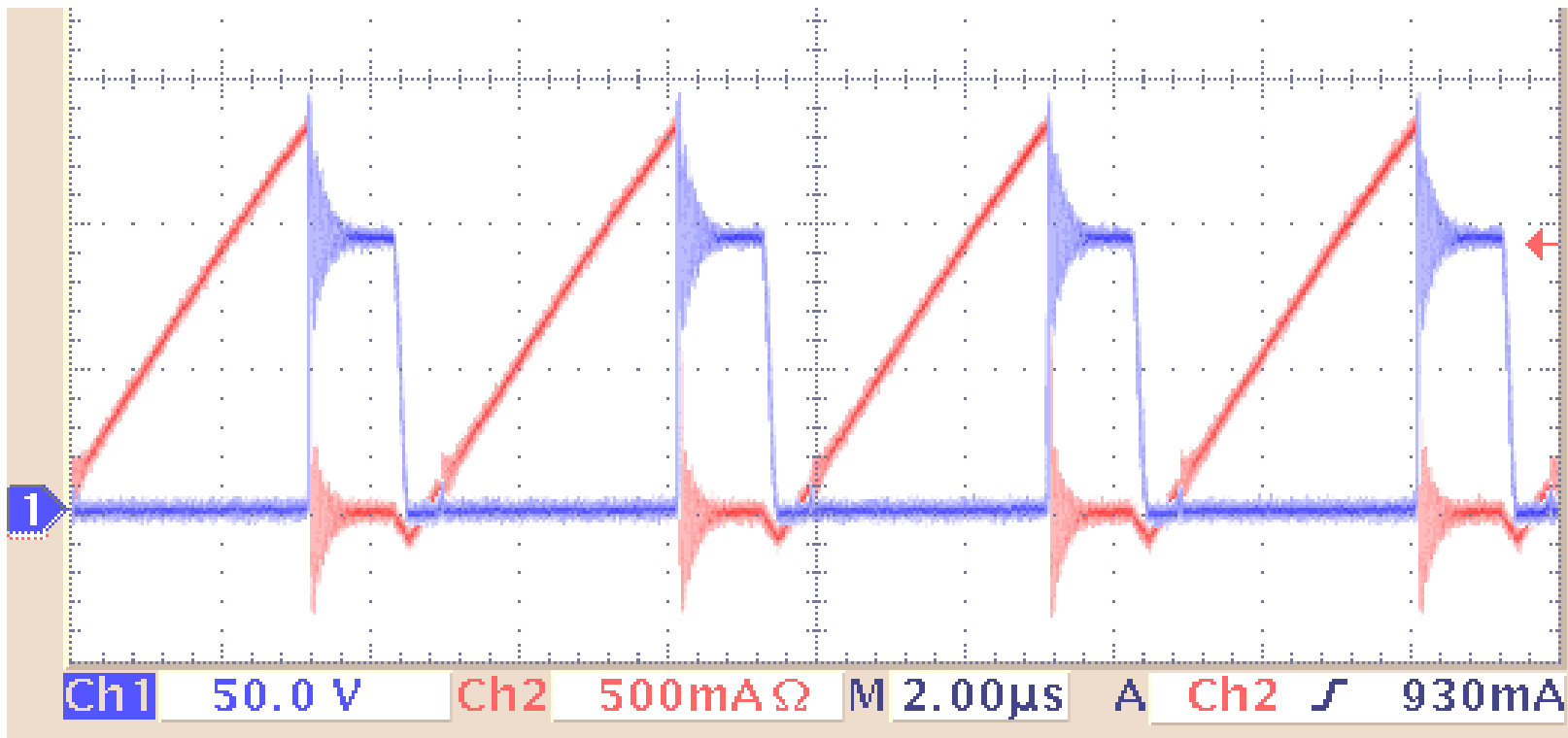


Figure 2 is a sample waveform of the demo unit showing primary current and the transistor voltage. Both the frequency and the duty cycle can be varied.