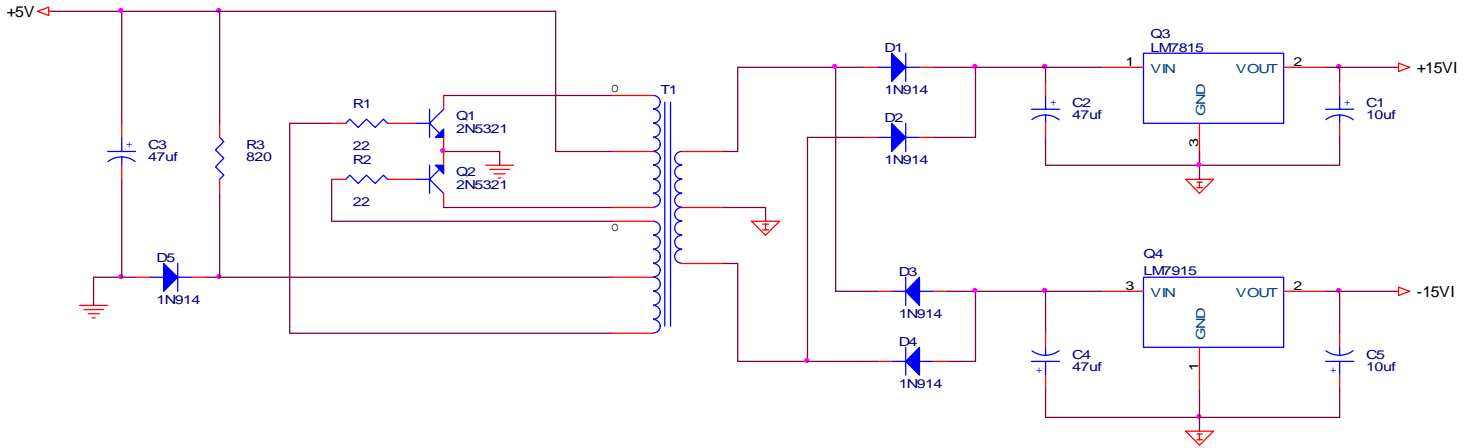


Self Oscillating DC to DC Converter



Isolated DC to DC Power Supply is Inexpensive and Flexible

When designing mixed signal circuits, the need arises for a clean Analog power supply. Often, the only power available is the noisy switching power that powers the 5 volt logic.

When you choose an analog power supply, it is always advisable to use clean regulated power. The switching power supply for the logic circuits typically injects unwanted noise into the analog circuits. The self-oscillating circuit shown above is constructed on less than 2 square inches of board space and uses only dollars of parts.

This simple circuit is a self-oscillating DC to DC converter. We have successfully used it to provide isolated and regulated power of +/-5V, +/-12V, and +/- 15V for powering of analog circuits. The DC to DC converter circuits derives its power from the +5 volt logic supply.

Specifications:

Vin = 4.75-5.25 volts
Short circuit protection (current limit)
Efficiency > 50%
Input to Output isolation > 10 meg ohm
Output ripple < 30 mv p-p
Vout = +/- 15vdc at 250ma

Our circuit uses a miniature toroid transformer. The transformer is packaged in an 10 pin DIP at .400 or .600 spacing, depending on the VA rating. We have used this design for ratings up to 5VA.

Also shown below is a variation of the circuit for a single isolated output voltage of +8vdc.

