Ag6400 Power Supply

The Ag6400 requires two power supplies, +3.3V for the on-board controller and -45V to -57V to provide power to the 4 outputs. To fully conform to the IEEE802.3at specification both of these supplies must be isolated from ground (as shown below in Figure 1).

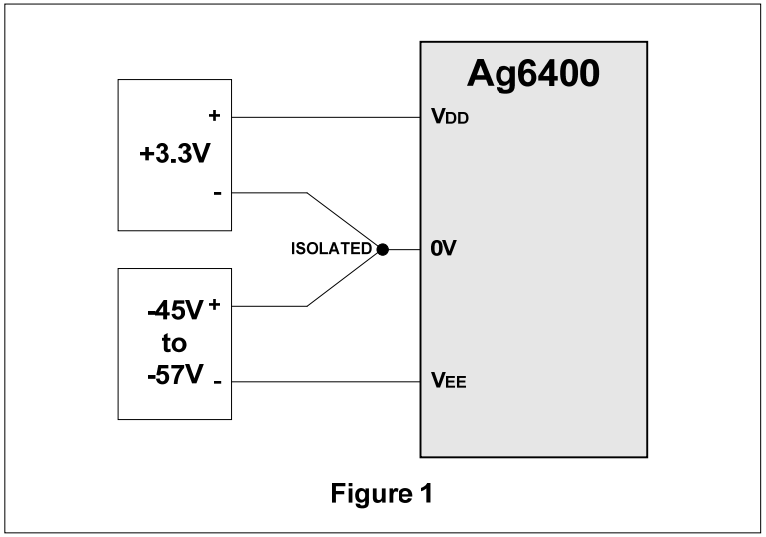


Figure 1

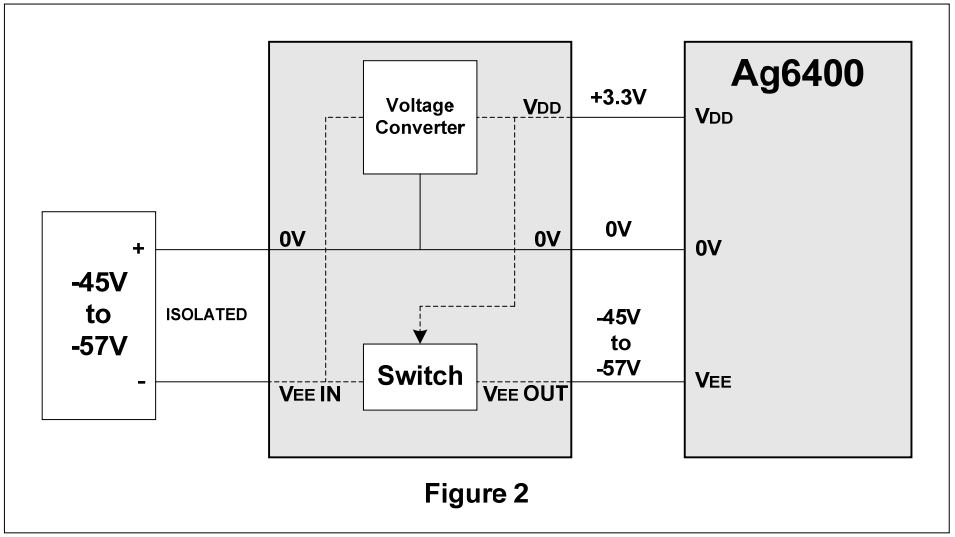
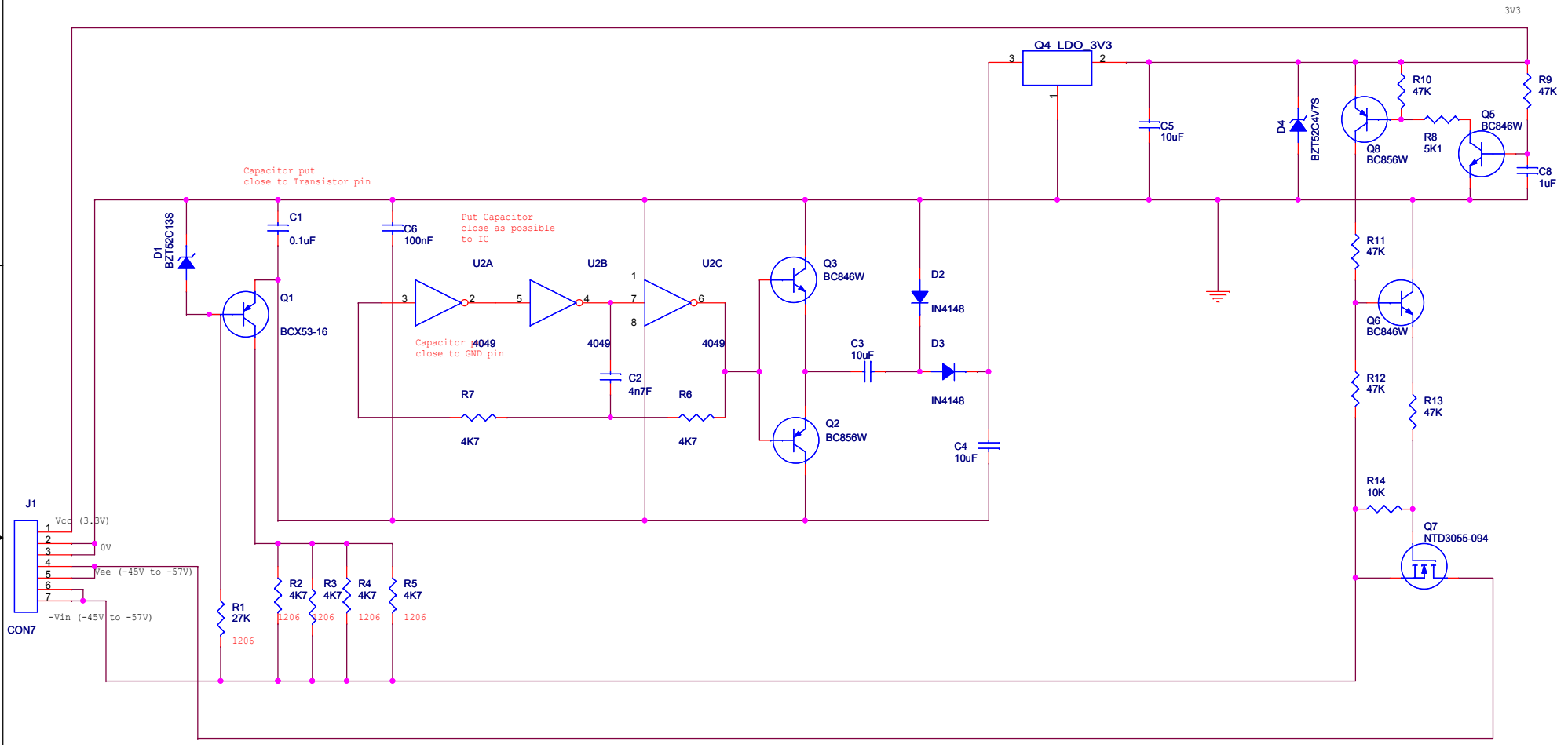
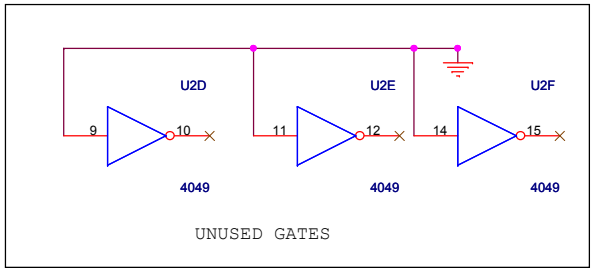


Figure 2

In the Ag6400 datasheet, Section 5.1 “Power Supplies” states that it is very important that the V_{DD} supply rail powers up before the V_{EE} supply rail and that if this does not happen then the Ag6400 controller chip may be damaged. The block diagram shown in Figure 2 gives an overview of how this can be avoided. When the (-45V to -57V isolated) supply is switched ON, the Voltage Converter generates the 3.3V rail. This rail controls a Switch that then connects V_{EE} IN to V_{EE} OUT, the results of this is that the Ag6400 always sees the V_{DD} (+3.3V) rail before the V_{EE} (-45V to -57V) rail.

The attached circuit shows a simple method of generating the +3.3V rail from the -45V to -57V supply and controls the power up sequence to the Ag6400.





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