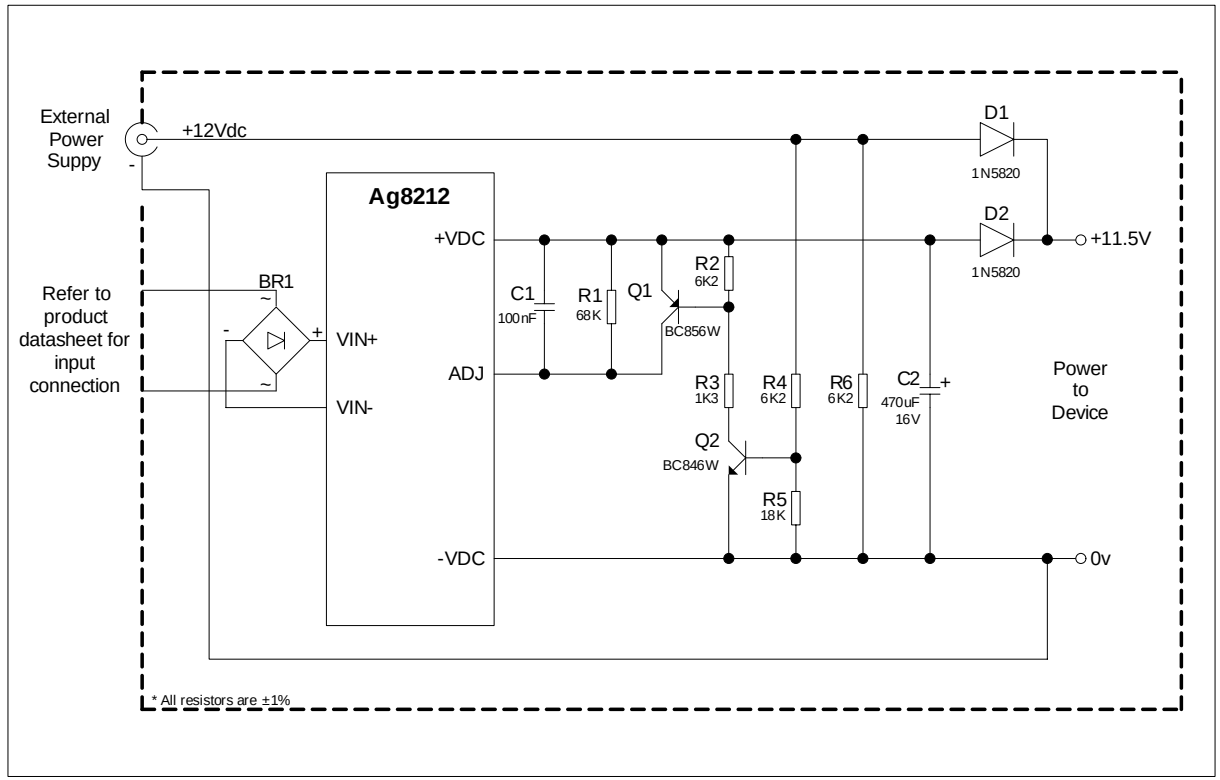
Gating an Ag8212 Output with an External Power Supply

In this application note the +12Vdc “External Power Supply” has priority over the Ag8212 output. D1 is a 1N5820 Schottky diode with a forward voltage drop of approximately 0.5V, therefore the voltage supplied to the device will be +11.5V.

With the external +12Vdc supply present, both Q2 and Q1 transistors will be ON. Q1 will bypass Ag8212 adjust resistor “R1” (68K), connecting the ADJ input to +VDC. This will set the Ag8212 output voltage to approximately +7.5V (because +VDC is less than the +11.5V output, D2 will not conduct).

If the external +12Vdc supply is removed, then Q2 and Q1 will turn OFF and Ag8212 adjust resistor will set the output to +12V. C1 slows down the rate of change to prevent the Ag8212 protection circuit from seeing this as a fault condition and shut down.

With the Ag8212 output voltage at +12V, D2 will conduct maintaining the +11.5V output to the device. There will be a slight dip in the output voltage during the transitions between the external +12V supply and the Ag8212 output. This will depend on the current drawn by the device and its capacitance.