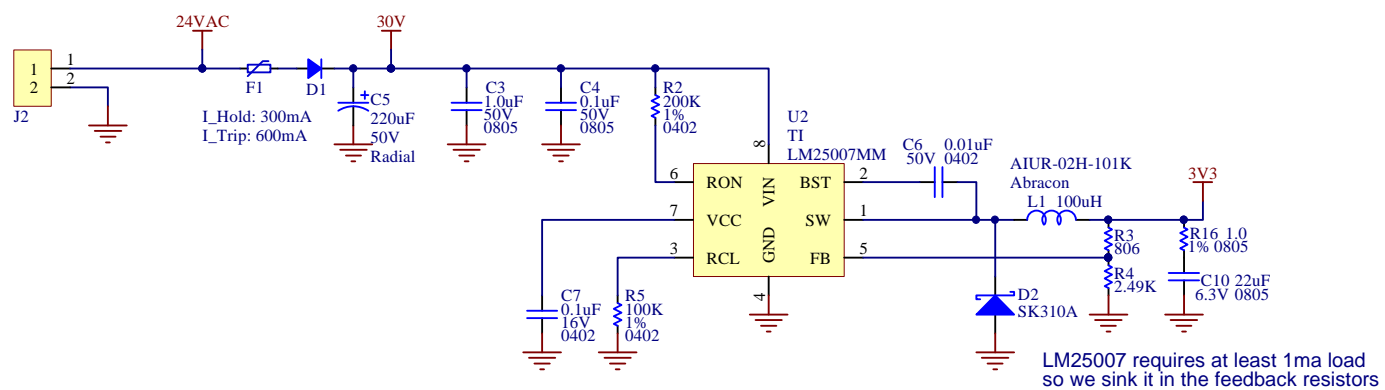
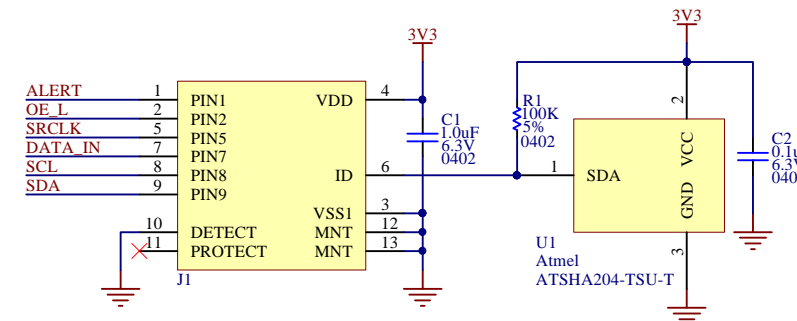


Rectifier and 3V3 Supply

24VAC half wave rectifies to 34Vpk. Based on load Vavg should be around 30V but will have large, load dependent, ripple.

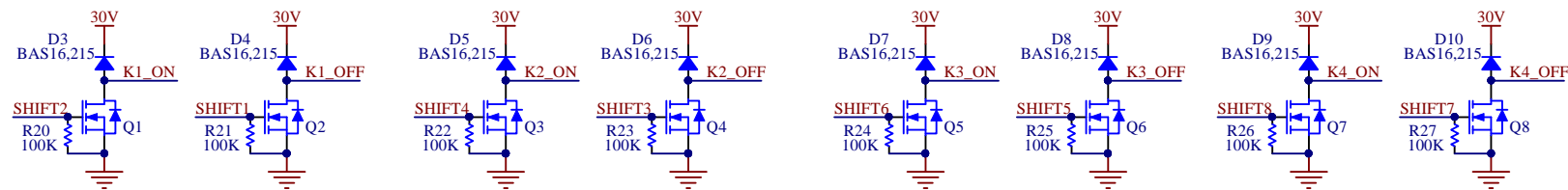


Imp Slot and ID Chip



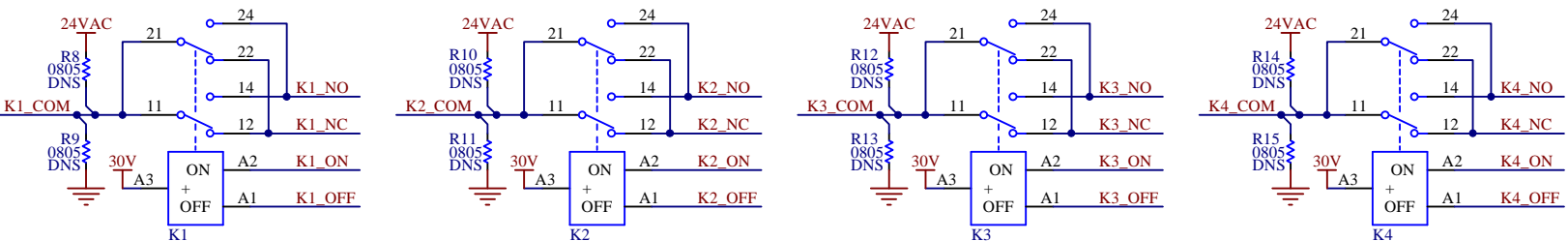
NFETs and Catch Diodes

Catch diodes prevent inductive ringing from damaging the FETs

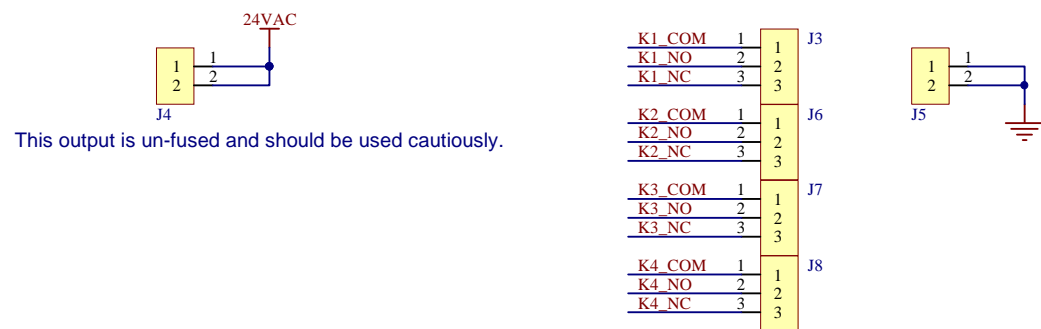


Bi-Stable Relays

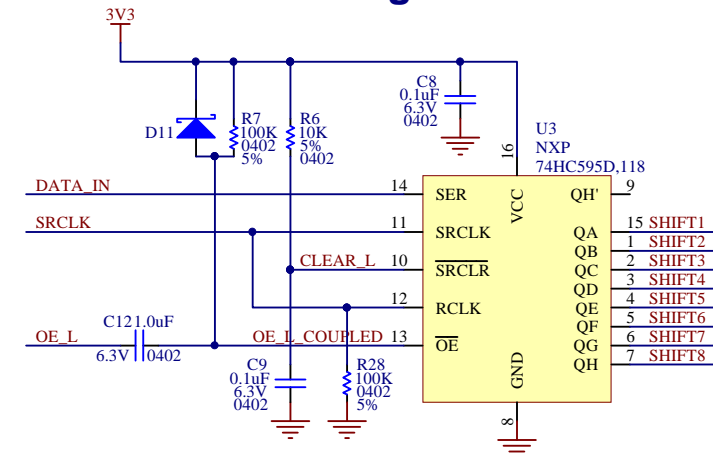
Populate R8 or R9 for non-isolated operation which is useful for applications with such as irrigation controllers which have a common wire.



Terminal Block Outputs

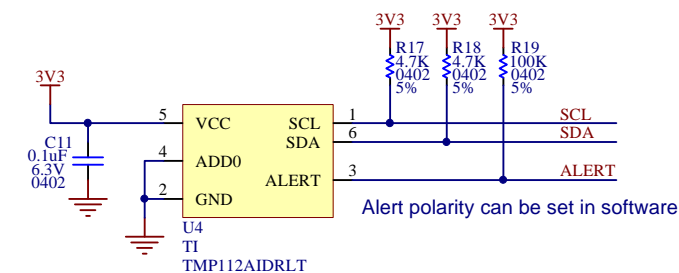


Shift Register



The RC on OE_L ensures that the coils can't be energized continuously. Software must pulse OE_L low when the output is valid. D11 prevents positive voltage spikes from damaging U3. The RC on CLEAR_L ensures that it starts with all outputs low. By adding a 555 timer it would be possible to ensure that on power up or card removal all relays would return to their NO position.

I2C Temperature Sensor



M1 and M2 are in the isolated region around the relays so they are not connected to GND.

