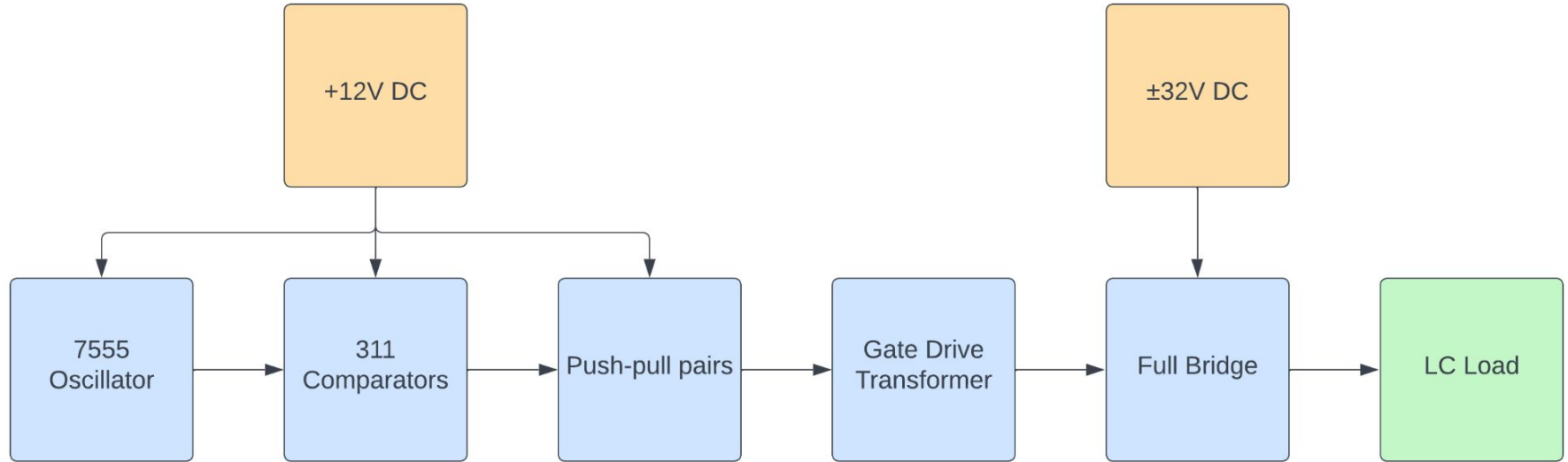


# Single-Mug Induction Heater

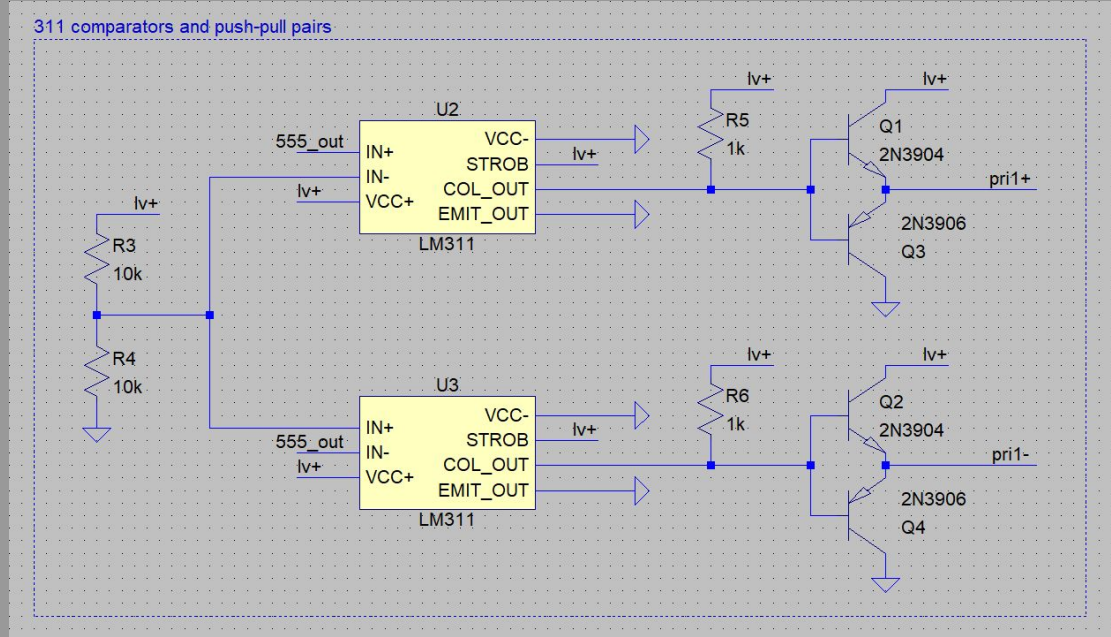
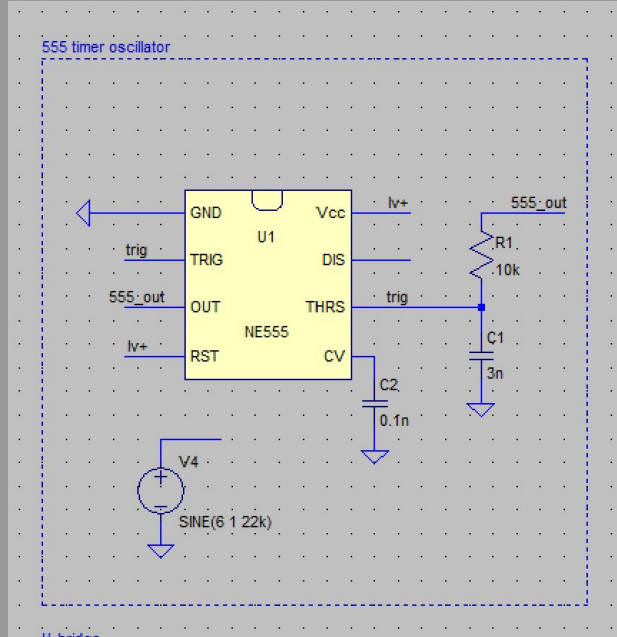


Thomas Coor, Evan Murphy, Cat Van West

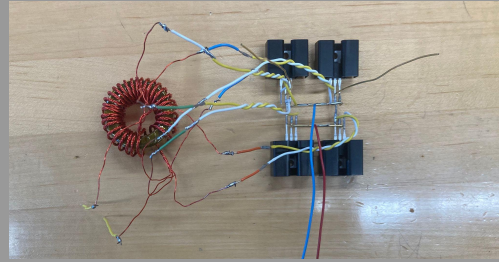
# System overview



# Low-voltage control circuit

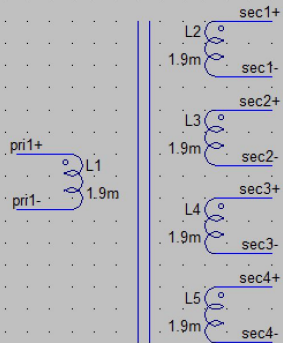


# Gate-drive transformer

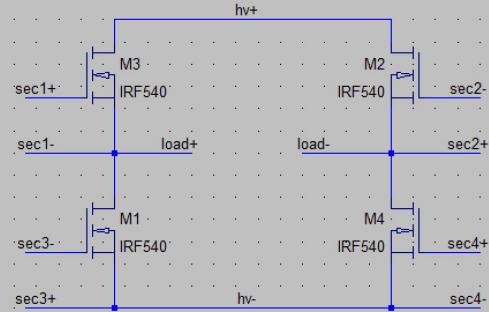


1:1:1:1 transformer

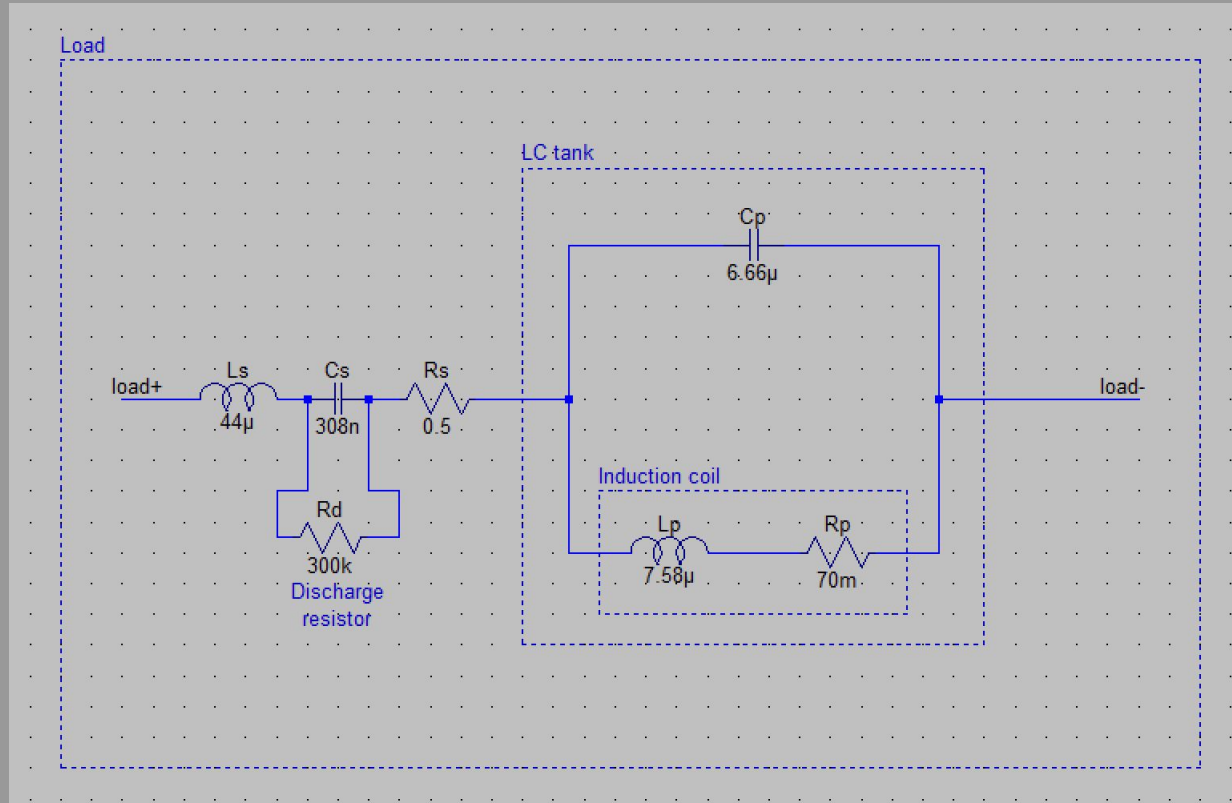
K L1 L2 L3 L4 L5 0.9994



H-bridge



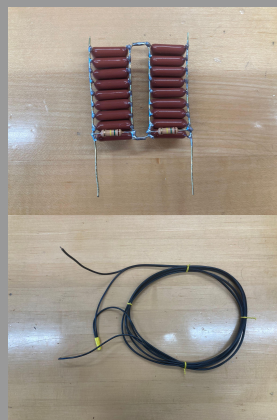
# Model of load circuit



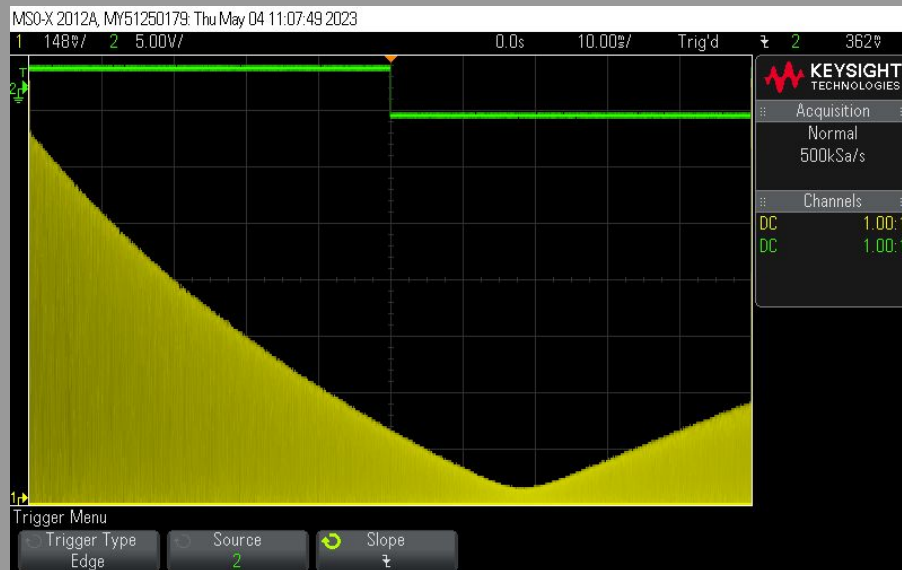
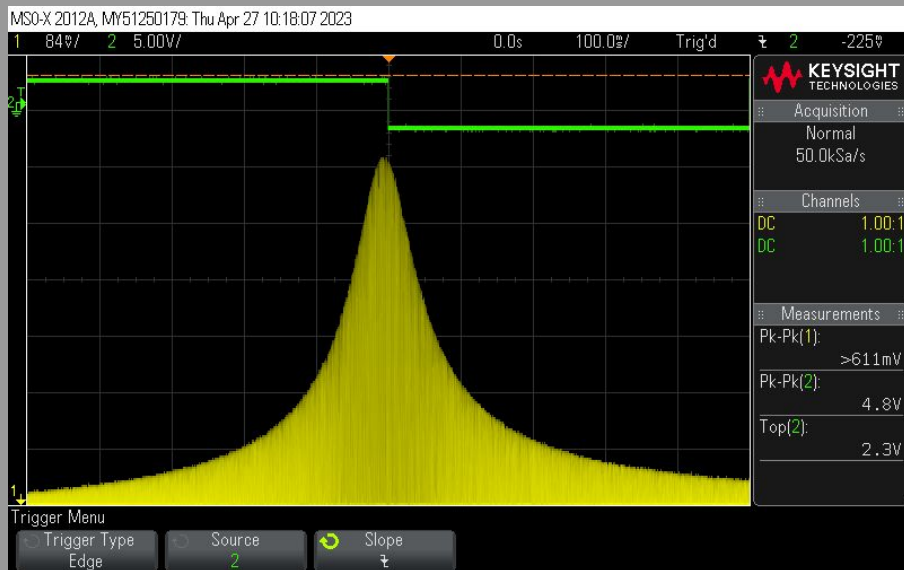
# Frequency response



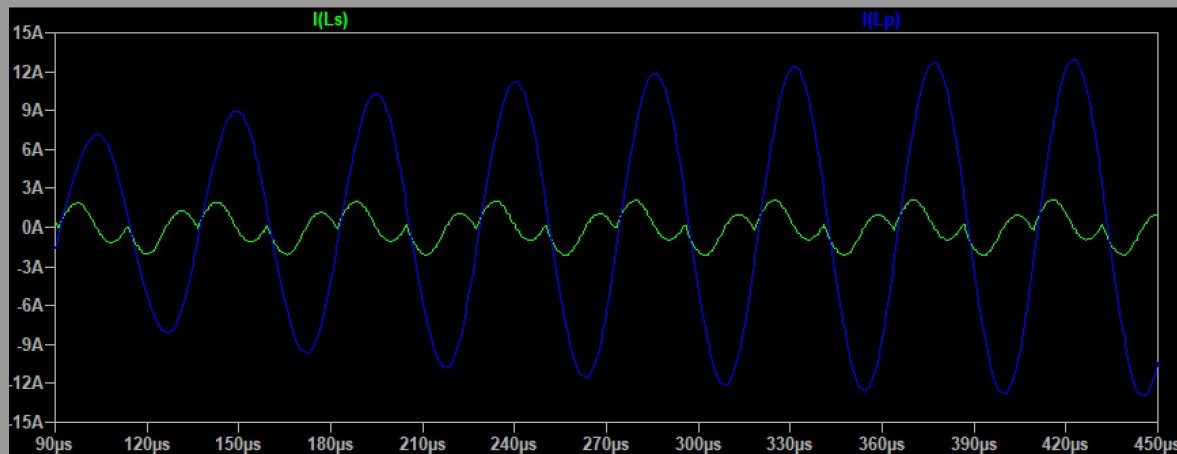
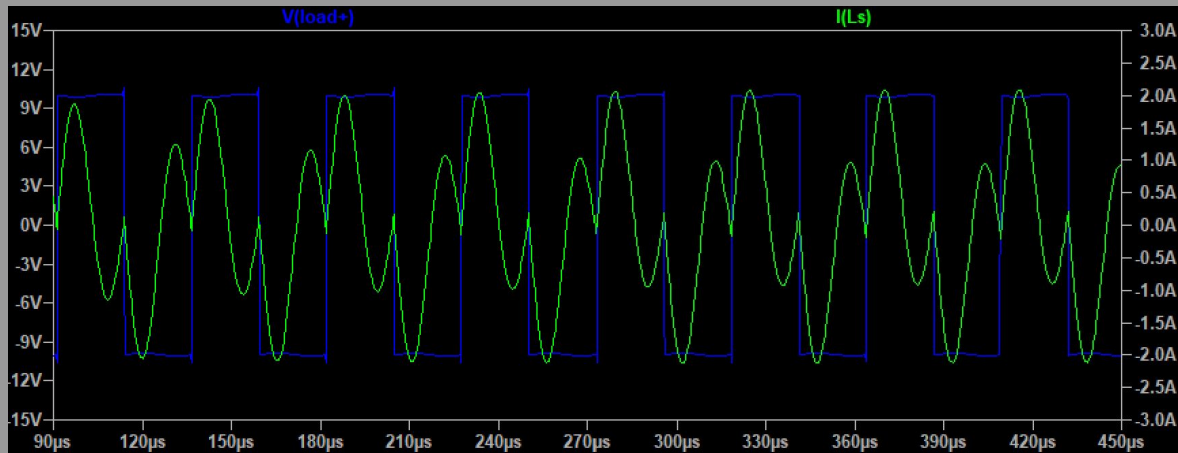
Parallel LC: ~23kHz



Series LC: ~46kHz



# Zero-current switching



Parallel:  $\sim 12\text{A}$  peak

Series:  $\sim 1.5\text{A}$  peak