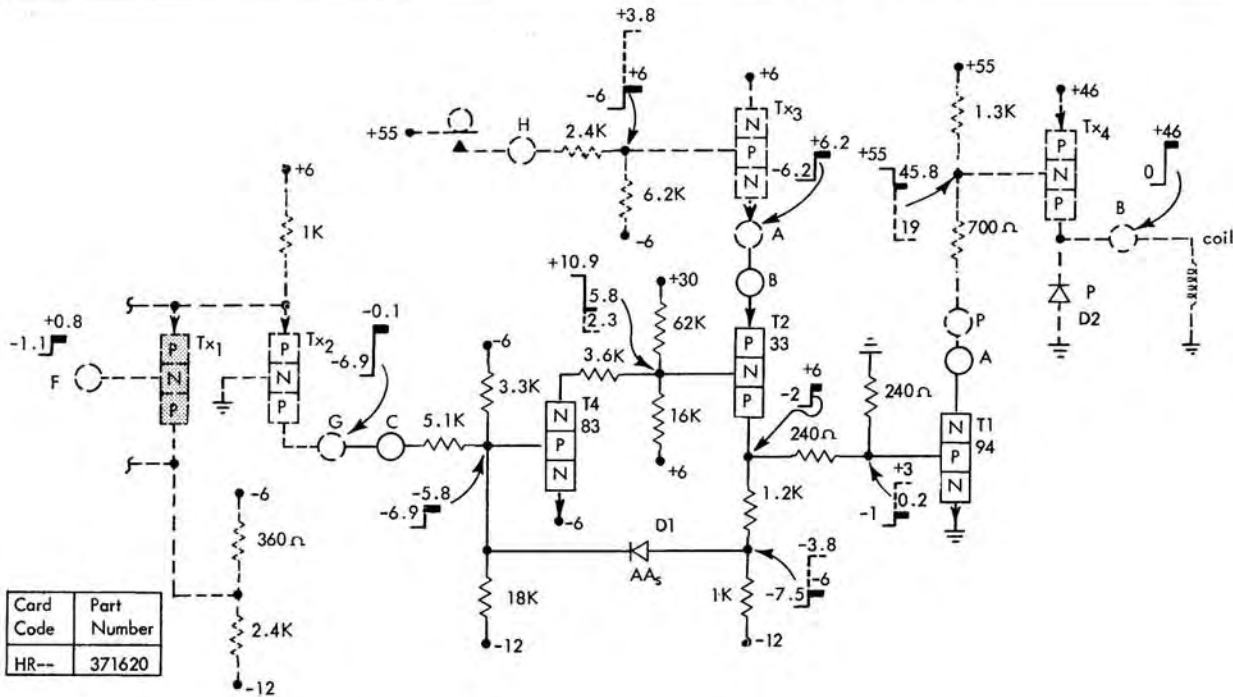


Typical Application of Coil Driver Circuit



Current Mode, Coil Driver Latch

The HR -- coil driver latch is designed to work with the FU -- gate and reset card and the HS -- coil driver card. The HR -- driver develops a negative output when it recognizes a coincidence of plus inputs. Once picked, it latches for the duration of the gate signal supplied to it by the FU -- gate and reset driver (see logic application above). The FU -- driver accepts a +55v CB input and provides a +6v output to gate HR --. The HS -- card is a power inverter which, when impulsed by HR --, develops a +46v output and provides enough current to pick a coil. The HR -- card is described here as part of a multi-card coil driver circuit so over-all circuit function and purpose are better visualized.

Circuit Description

As shown, tx1 is forward-biased and tx2 is reverse-biased. T4, T2, and T1 are reverse-biased because divider currents have established their base levels as shown. Tx3 and tx4 are reverse-biased by their base return potentials. The output of tx4 is 0v and the coil is not picked.

When the CB closes, the base divider of rx3 attempts to rise to +38v but its collector-to-base is forward-biased

and the base clamps to +6v. The emitter of rx3 follows its base upward so the emitter of T2 is now gated to receive an input to its base. When the input to tx1 rises, rx2 is forward-biased and rx1 is cut off. Current flow from -12v through 18K, 5.1K, and rx2 to +6v raises the base potential of T4 and it conducts. Current flow from -6v through T4, 3.6K, and 62K to +30v attempts to lower the base of T2 to +2.3v which forward-biases T2. Current flow from -12v through 1K, 1.2K, T2, and rx3 to +6v raises the base level of T1 and it conducts. The drop across the 1K resistor attempts to raise the anode of D1 to -3.8v which forward-biases D1. Current flows from -12v through 18K, D1, 1.2K, T2, and rx3 to +6v. Thus, the base of T4 remains forward-biased after rx2 is cut off because T4 is now latched by D1. This latch is maintained until the +55v CB source is removed. Current flow through T1 to +55v lowers the base level of rx4 and it conducts. Current flows through the coil and rx4 to +46v and the coil picks. D2 absorbs the coil voltage on dropout.

The circuit is dropped out by opening the CB which lowers the base and emitter potential of rx3 to -6v which drops out T2 and rx3. With T2 cut off, D1, T4, T1, and rx4 cut off.