## DRIVER

The FM modulated carrier from the oscillator is coupled through capacitor C107 to the base of transistor Q103. Transistors Q101, Q102, and Q103 form a 2-stage emitter-follower amplifier that boosts the power of the signal. The signal is then coupled into the AC line through resistor R103 and capacitor C105. Capacitor C102 is the return path for the signal. Transistors Q101, Q102, and Q103 also act as a buffer between the oscillator and the AC line.

## MASTER CONTROL

Transistor Q107 and diodes D112 and D113 form a control circuit to disable the burst generator and the oscillator circuits when the Transmitter is not activated.

The operation of the control circuit will be explained in the following paragraphs, with the pushbutton switch pushed in for use with normally-closed contacts. See Figure 6.

### Transmitter Not Activated (Sensor contacts closed)

When the sensor contacts are closed, supply voltage is fed through resistors R136 and R134 to the base of Q108. This high on the base of Q108 causes the transistor to conduct and act as a short circuit from emitter to collector. Since the transistor has supply voltage on the collector, it is then also on the emitter. The high on the emitter is coupled through the switch to the base of transistor Q107. The high on the base of Q107 now causes this transistor to act as a short from emitter to collector. The ground potential on the collector is then coupled through diode D113 to pin 2 of integrated circuit A101B and, by keeping capacitor C115 from charging, it turns off the burst generator. The ground potential is also coupled through diode D112 to the base of transistor Q105 which turns the oscillator off. The Transmitter is therefore not activated.

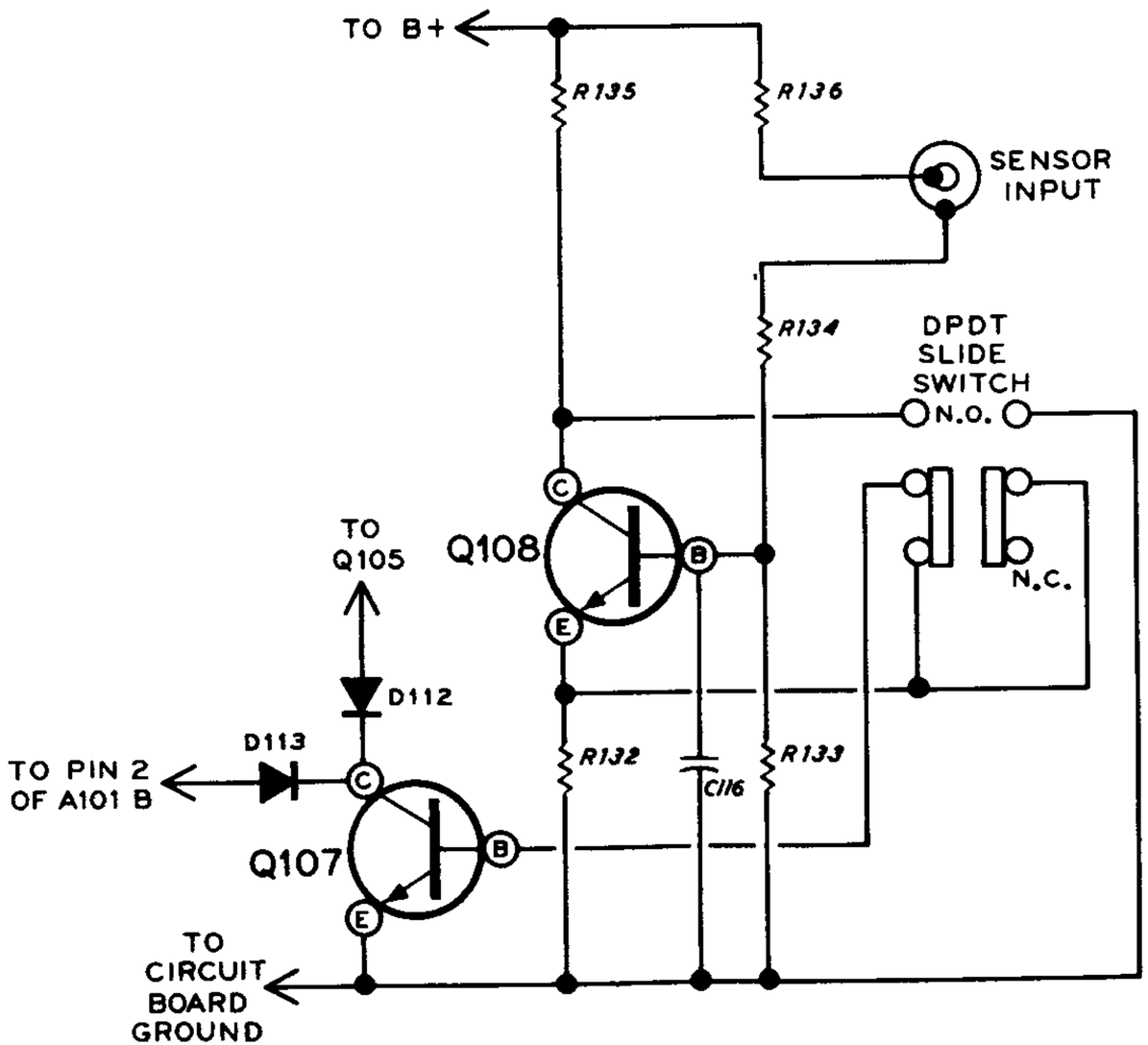


**Figure 6 (Normally closed contacts)**

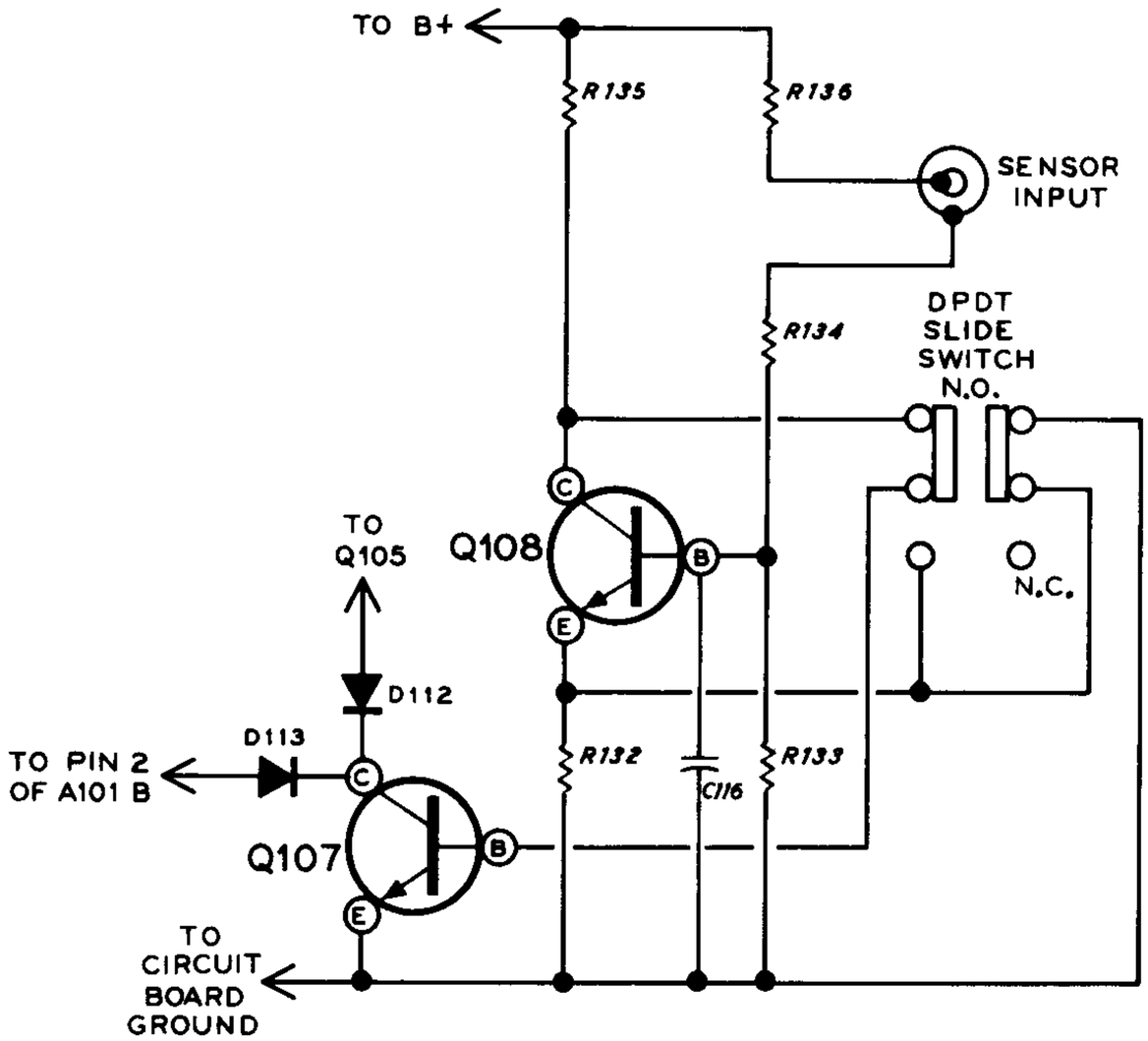


**Figure 7 (Normally open contacts)**

## Transmitter Activated (Sensor contacts open)

When the sensor contacts are open, the base of transistor Q108 goes low. The low on the base causes the transistor to stop conducting which causes the emitter to go low. The low on the emitter of Q108 is coupled through the switch to the base of transistor Q107. Q107 now stops conducting and allows the collector to go high. This high on the collector of Q107 allows the burst generator and the oscillator to be turned on. The Transmitter is now activated.

The action of the switching circuit will now be explained with the pushbutton switch released for use with normally-open contacts. See Figure 7.

## Transmitter Not Activated (Sensor contacts open)

When the sensors contacts are open, the base of transistor Q108 is at a low potential. The emitter of Q108 is grounded through the switch. With a low on the base, transistor Q108 does not conduct. The high potential on the collector of Q108 is coupled through the switch to the base of transistor Q107. The high on the base causes the transistor to conduct heavily, which keeps the collector at ground potential. The ground potential on the collector of Q107 keeps the burst generator and the oscillator turned off. The Transmitter is therefore not activated.

## Transmitter Activated (Sensor contacts closed)

When the sensor contacts are closed, the base of transistor Q108 is high. This causes the collector to go low since the emitter is grounded through the switch. The low on the collector of Q108 is coupled through the switch to the base of transistor Q107. Q107 now stops conducting and causes the collector to go high. The high potential on the collector of Q107 allows the burst generator and the oscillator to be turned on. The Transmitter is now activated.