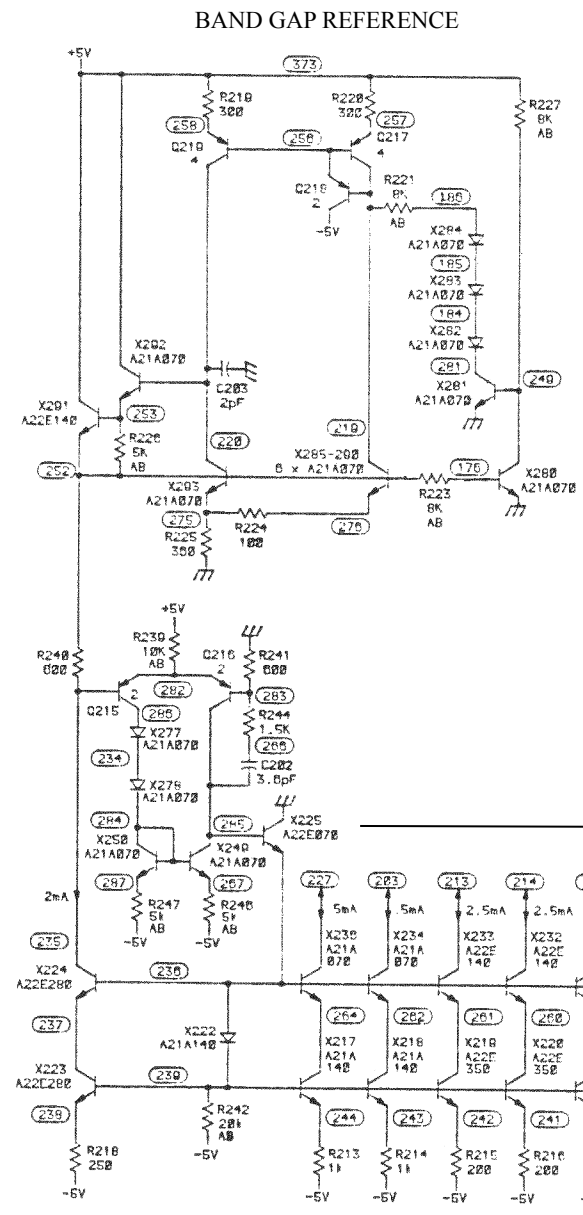


X331 and X332 are Schottky Barrier Diodes in the Full Bandwidth Signal path on this page.

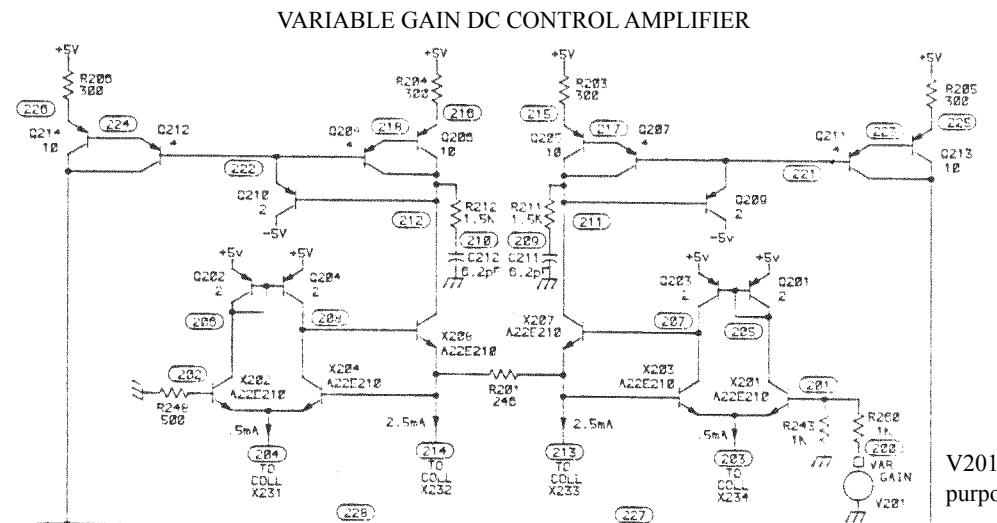
The Band Gap reference has two functions in the M377.

Since the Band Gap circuit depends on the +5V and -5V power supplies to function, loss of either supply shuts down the entire chip, making power supply sequencing unnecessary and the chip safe under fault conditions.

Most currents on the chip are determined by the Band Gap and multiples of a standard geometry 100 ohm resistor. This makes external voltage inputs such as VARIABLE GAIN be sensitive to absolute voltage without trimming.



BAND GAP REFERENCE



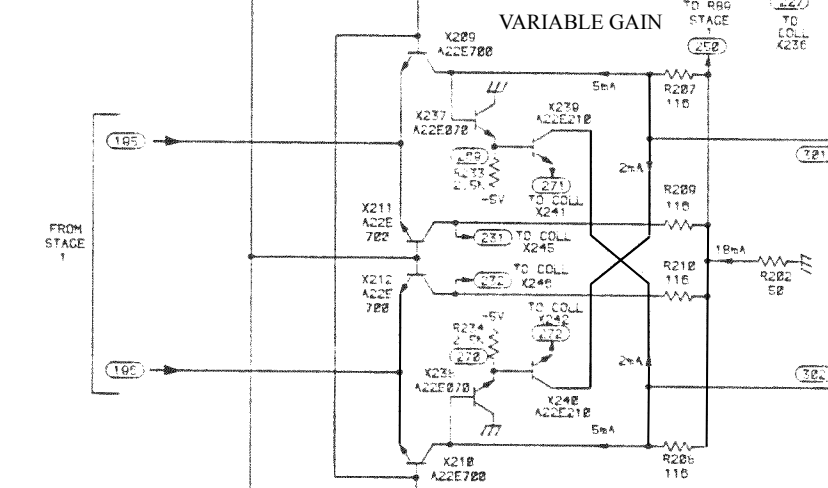
VARIABLE GAIN DC CONTROL AMPLIFIER

The Bandwidth Limit Filters are of the Sallen-Key type with unity gain amplifiers. The unity gain amplifiers are bootstrapped emitter followers. The bootstrapping and very high impedance current sources ensure that the gain is indeed +1.

One advantage of this is that the input impedance of the emitter followers is very high. Their capacitance is so low that collector-base capacitance does not affect the filter parameters.

Small resistors such as R347 and R348 introduce a very high frequency zero to compensate for a pole in the emitter follower's transfer function.

IC process variation in neither R nor C affects the filter's transient response but do affect the filter's bandwidth which is loosely specified.



X229 and X230 are catch diodes

V201 is for SPICE purposes only.

R209 and R210 are necessary to thermally balance the Gilbert multiplier at all gain settings.

