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## **Basic Vox Circuit By N1HFX**

A recent look at some of the budget priced HF transceivers revealed that they were missing a VOX. Although most of these budget priced transceivers performed admirably, it would certainly be nice to have VOX capability. Figure 1 is a basic VOX circuit which will perform very well once the VOX level is set correctly. This circuit is low cost and all parts can be found at your local Radio Shack store.

The circuit in Figure 1 consists of the 1458 IC which is really two 741 op amps in a single package. The first op amp is used to amplify the mike audio. The second op amp is used as a comparator which is designed to saturate a switching transistor during periods of moderate mike audio. Capacitor C2 which holds a small charge when the second op amp goes high, provides the necessary delay before unkeying the PTT. Variable resistor R6 sets the desired VOX level and should be adjusted for the particular voice or microphone being used.

Using a VOX circuit for the first time will require some practice. Do not use a microphone with excessive gain unless you have a very quiet household. It is also a good idea to use headphones, since the audio from the transceiver's speaker could key the transceiver.

If you would like to increase the delay time, increase R8 to 10K. If you would like a little less delay, decrease C2 to about 22uf.

Make certain that you connect the microphone to both the VOX circuit as well as to the mike input on the transceiver. Failure to do so will result in the rig being keyed without any transmitted audio. Connect the PTT to collector of Q1 in the circuit.

Mike Martell N1HFX

### Parts List

R1	1K Resistor (brown, black, red)
R2,R4	47K Resistor (yellow, violet, orange)
R3	100K Resistor (brown, black, yellow)
R5,R7	33K Resistor (orange, orange, orange)
R6	10K Pot
R8	4.7K Resistor (yellow, violet, red)
R9	2.2K Resistor (red, red, red)
C1	.1 microfarad capacitor (104)
C2	47 microfarad electrolytic capacitor (observe polarity)
D1	1N914 or similar diode (observe color band)
IC-1	Type 1458 dual op amp chip
Q1	MPS2222A or similar NPN switching transistor

Vcc = +9 to +14VDC

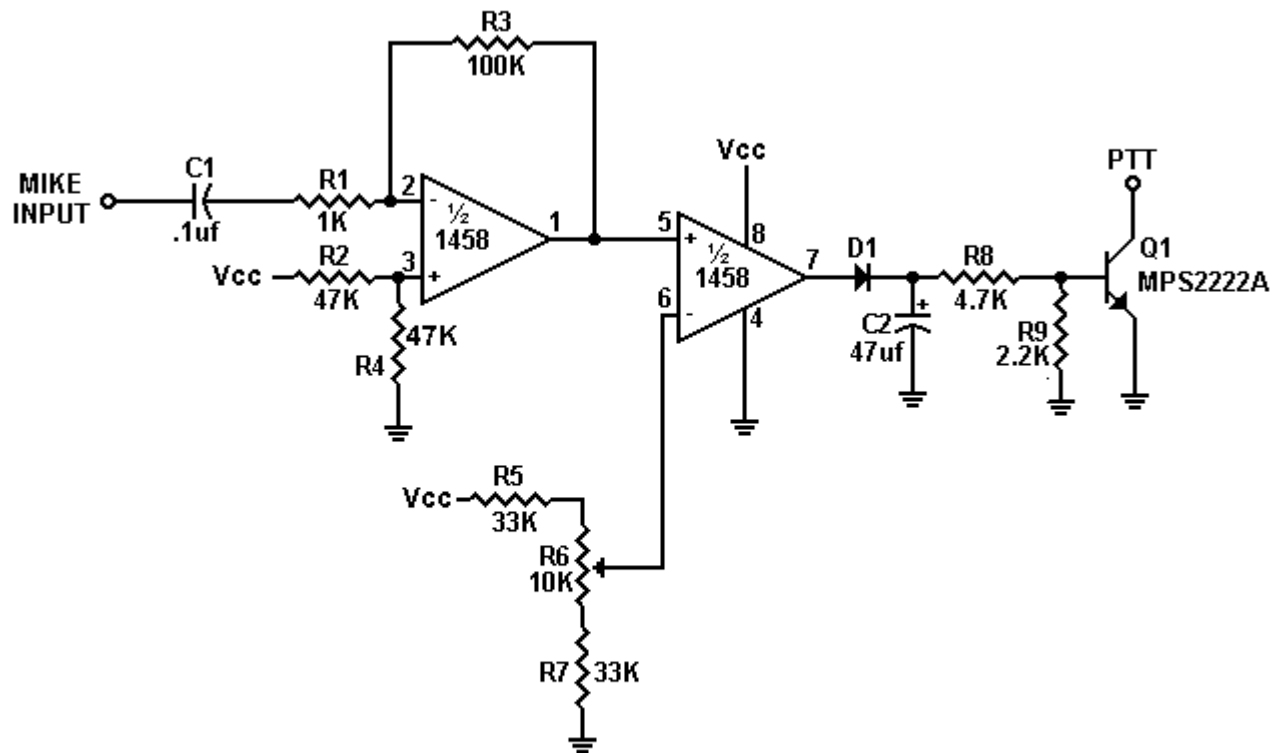
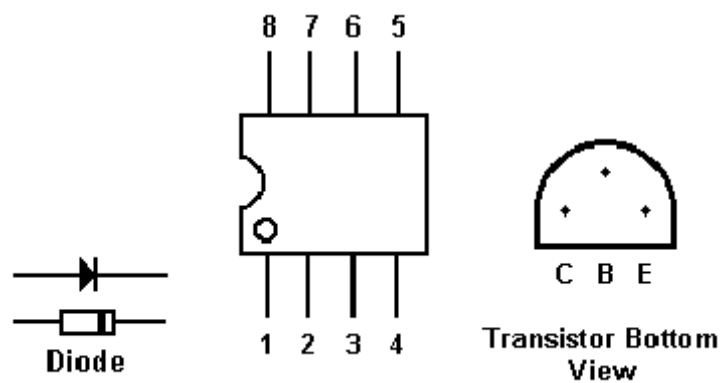


Figure 1



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