

Circuit description:

MIC is the electret microphone, its role is to sense the weak sound vibrations in the air, and the variation of the output with the same sound signal. Site selection is the high sensitivity of the microphone, usually tens of millivolts above can output audio signals, the signal level high enough modulation frequency of the oscillation signal.

Note: The microphone has positive and negative points, usually connected to the anode and the shell.

R1 is in a very MIC microphone bias resistor, with this resistance, the microphone in order to output audio signals, it is because the MIC microphone itself has a very internal FET amplifier, used to impedance matching and increase output capacity and so on.

Coupling capacitor C5 is the audio signal, the voice of the microphone sensor output signal courier to the next level.

C2 is the Q9018 the base filter capacitor, filter out high frequency noise while the other hand, let Q9018 high-frequency potential of 0, above the high-frequency circuits for 50MHz is, Q9018 is a common-base amplifier circuit, which is finally, can form the basis of oscillation. Because the basic conditions for the oscillation circuit is the need to have a certain gain, and later with the appropriate phase of the feedback (generally positive feedback).

R2 is the Q9018 the base bias resistor, to Q provide a smaller base current, Q will have a large emitter current to over R3. As R2, R3's current role in their resistance on the pressure drop and affect each other, the result will automatically stabilize at a value of the state, this is the book in terms of the emitter follower.

R3 is the Q9018 the emitter resistance, where the role of stabilizing the DC operating point, and C3 also formed a high-frequency signal load resistance, it is also part of the high-frequency oscillation circuit.

C8 and parallel resonant circuit composed of L, choose to play a major role in the oscillation frequency, the capacity to change the C8 or change the shape of L (including the number of turns), you can easily change the transmission frequency.

C7 is a high-frequency signal output coupling capacitors, is designed to allow high-frequency signal into a radio volatility hitting the sky. Therefore, strong vertical antenna on the best, the best length is equal to the wavelength of radio wave frequency (or multiples), four weeks should be open, do not have metal barrier. Note: frequency equal to the reciprocal of wavelength, frequency, wavelength will change, say, the specific length of the antenna circuit with the output impedance of the antenna thickness, and so on, in the case of an amateur, just take a wire on the line. (If you launched in pursuit of the farthest distance we can do this on their own attempts to site after site technical staff component package testing, the effect can easily reach 50 meters away.)

C6 is the feedback capacitance, the circuit start-up of the key components that is it. High-frequency analysis of the circuit state, the collector is the output, the emitter is the input and output signals through C6 to the input side, a strong positive feedback, a naturally oscillate. This is in fact the book is called capacitance three-point oscillator circuit.

C1, C4 is the power supply filter capacitor, to exchange provide loop, reducing the power of the AC resistance.

Performance parameters:

Frequency Range: 80MHz-108MHz

Operating voltage: DC1.5V-9V

Package list:

Part number	Part name	Specification	QTY
R1	Resistance	2.2k	1
R2	Resistance	22k	1
R3	Resistance	220	1
C1 C4 C5	Ceramic capacitors	104	3
C2	Ceramic capacitors	102	1
C3 C7 C8	Ceramic capacitors	30	3
C6	Ceramic capacitors	10	1
Q	Transistor	9018	1
L	Inductance	4-5T	1
X1	Pin (antenna)	1P	1
X2	Pin (power supply)	2P	1
MIC	Electret microphone	10 x 6mm	1
	PCB board	30 x 25mm	1