2to3milebug (2592x3387x2 tiff)

2-3 MILE FM BUG KIT

THIS KIT REQUIRES ABILITY TO WIRE WRAP OR POINT TO POINT ASSEMBLE. THIS MEANS YOU MUST CONNECT EACH COMPONENT TO EACH COMPONENT, NO CIRCUIT BOARD TO ADD SPACE. FOR LOW FREQUENCY DEVICES SUCH AS THESE, WIRE WRAP WORKS MUCH BETTER AND USES LESS SPACE. ONCE FULLY ASSEMBLED AND OPERATING YOU CAN EPOXY COAT OR HOT GLUE COAT THE WHOLE THING TO WATERPROOF IT. WE HAVE ACTUALLY FULLY ASSEMBLED THIS KIT THE SIZE OF A SUGAR CUBE AT A MAX OF 30mW OUTPUT. THIS METHOD ALSO USES LESS SOLDER.

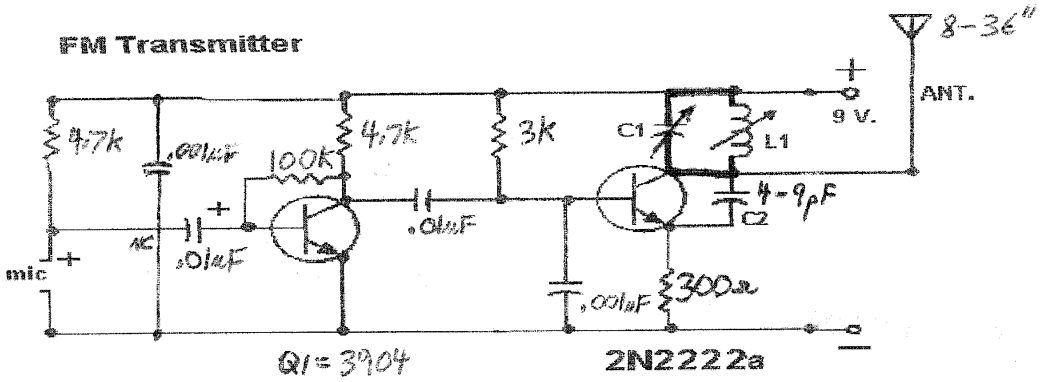
THIS SIMPLE CIRCUIT USES A PREAMP CIRCUIT TO AMPLIFY THE SIGNAL FROM THE ELECTRET MICROPHONE. THIS SIGNAL IS INSERTED INTO THE OSCILLATING SIGNAL THAT IS SET BY USE OF THE VARIABLE CAPACITOR AND INDUCTOR TANK CIRCUIT. THIS TANK CIRCUIT STABILIZES THE FREQUENCY. BY TWEAKING THE INDUCTOR AND ADJUSTING THE CAPACITOR TO ACHEIVE RESONANCE YOU CAN TRANSMIT WELL ABOVE AND BELOW THE FM BAND. NOTE THAT THE CAPACITORS BETWEEN EACH AMP STAGE ACT AS DC FILTERS SO THE DC FROM ONE AMP STAGE DOES NOT MAX OUT THE AMPLITUDE OF THE NEXT STAGE, IT LEAVES THE INPUT AT AROUND ZERO OR SLIGHTLY POSITIVE. A DC FILTER SHOULD BE PLACED BETWEEN EACH AMP OR STAGE INCLUDING THE OPTIONAL 70mW FM BUG SIGNAL BOOSTER AMP KIT, ITEM#70MWBOOSTER.

THE SCHEMATIC IS SIMPLE AND EASY TO UNDERSTAND. NOTE: SOME PARTS MAY BE SUBSTITUTED AND WILL NOT AFFECT PERFORMANCE. ALSO MAKE NOTE THAT THE VARIABLE CAPACITOR AND INDUCTOR MUST BE SOLDERED DIRECTLY TO EACH OTHER WITH NO LAG WIRE.

PARTS:

MAKE NOTE: L1 IS COMPOSED OF 9 TURNS OF #16 BUSS WIRE. THE METAL TRANSISTOR CASE SHOULD BE HEAT SINKED. ANY NPN GENERAL PURPOSE TRANSISTOR WILL WORK IN PLACE OF Q1. ANY HIGH BETA NPN TRANSISTOR WILL WORK IN PLACE OF Q2. CAP LABELED 103 IS .01uF and 102K IS .001uF. THE NEGATIVE LEAD ON THE MIC HAS THE STRIP TO THE CASE.

SCHEMATIC DIAGRAM.



Q2 = 2N222A