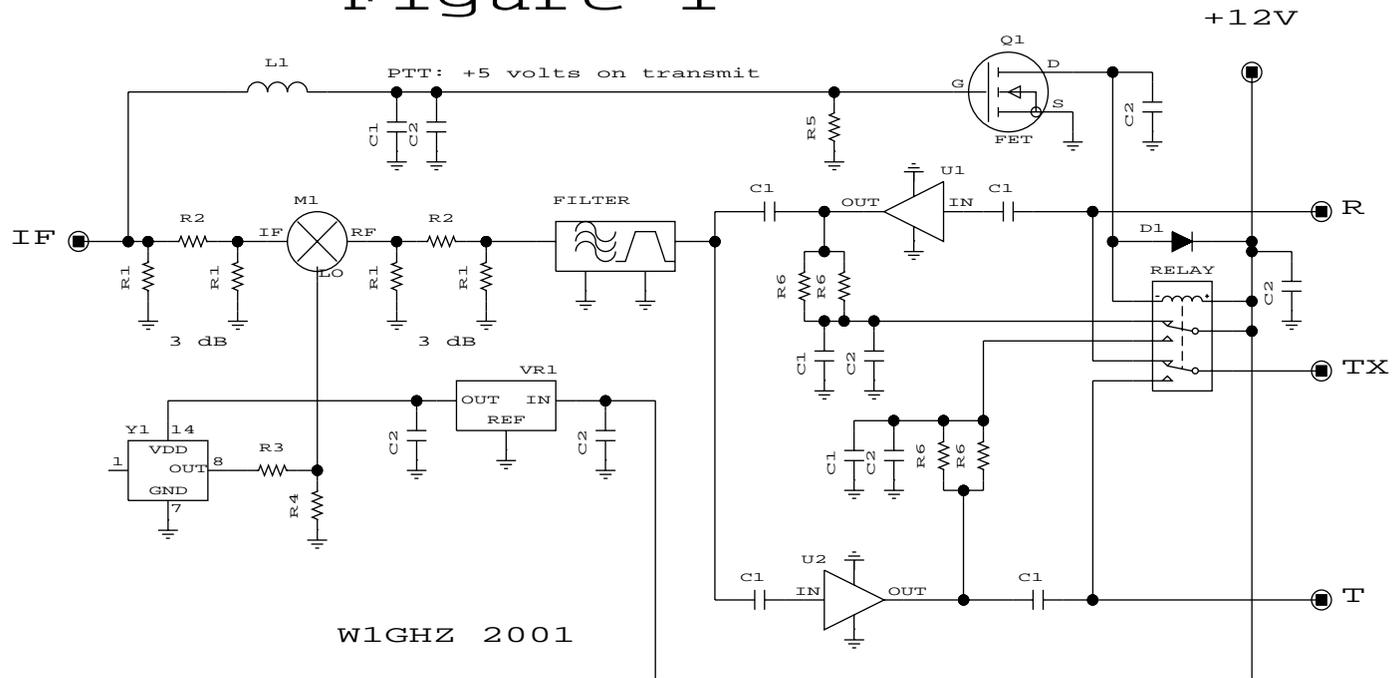


MINI-TRANSVERTER

Figure 1



C1 - 500 to 1000 pf, 0603 chip
 C2 - 0.1 uf, 0603 or 0805 chip
 L1 - 1 uh RF choke
 M1 - TUF-1 mixer
 Q1 - VN2222 or similar FET
 VR1 - 78L05 3-terminal regulator
 U1, U2 - MAR-6 MMIC
 Y1 - 4 pin CMOS oscillator (see text)

R1 - 300 ohms, 0603 chip
 R2 - 18 ohms, 0603 chip
 R3 - 300 ohms, 0603 chip
 R4 - as needed for LO level
 R5 - 100K (not critical), 0603 chip
 R6 - 400 ohms, 1206 chip (1/8 watt)
 Filter - Toko 272MT - 1006A helical
 Relay - Omron G5V-2 or Radio Shark 275-213A