Figure 1 — Detailed schematic diagram and parts list for the RF portion of the Universal QRP transmitter. Resistors are \( \frac{1}{2} \) W, 5%. A kit of component parts is available from Kangaroo US.

C10 is a VXO capacitor placed in series with the crystal to provide some frequency adjustment around the crystal frequency. Use what you have in your junk box, although smaller capacitance values provide a wider tuning range. We used a small 2 to 19 pF trimmer. TR switching is performed with a relay and additional circuitry shown in Figure 4.

C1-C9 — See Table 1, all 50 V ceramic or mica.
C10 — VXO control, see text.
C11, 12 — 0.08 µF, 50 V metal film or Mylar.
C13 — 4.7 µF, 25 V electrolytic.
C14 — 5-65 pF, compression or plastic dielectric trimmer.
C15-24 — 0.1 µF, 50 V ceramic.
D1 — 1N876B, 43 V Zener diode.
D2 — 1N4148, silicon general purpose diode.
K1A — See Figure 4.
L1, L2 — See Table 1.

Q1, Q6, Q7 — 2N3904, NPN silicon small signal transistor.
Q2, Q3 — 2SC5739 NPN silicon switching power transistor.
Q4, Q5, Q8 — 2N3906, PNP silicon small signal transistor.
R1, R5-R9, R14, R25 — 10 kΩ, carbon film resistor.
R2, R3 — 4.7 kΩ, carbon film resistor.
R4 — 22 kΩ, carbon film resistor.
R10 — 680 Ω, carbon film resistor.
R11 — 3.3 kΩ, carbon film resistor.
R12 — 1 kΩ, carbon film resistor.
R13 — 22 Ω, carbon film resistor.
R15 — 4.7 kΩ, carbon film resistor.
R16 — 1 kΩ, carbon film resistor.
R17 — 250 Ω, potentiometer (a 500 Ω potentiometer in parallel with 270 Ω fixed resistor can be substituted).
R18 — 1.5 kΩ, carbon film resistor.
R19 — 510 Ω, carbon film resistor.
R20, R22 — See Table 1, carbon film resistor.
R21 — 12 Ω, carbon film resistor.
R23, R24 — 2.2 kΩ, metal film resistor.
RFC1 — 3.9 µH, 0.5 A molded RF choke.
In place of a manufactured product, a T68-2 toroid wound with 26 turns of #22 enameled wire can be used.
T1 — See Table 1
T2 — 10 bifilar turns #28 enameled wire on FT-37-43 or FB-43-2401 ferrite toroid core.
T3 — 7 bifilar turns #24 enameled wire on FT-37-43 or FB-43-2401 ferrite toroid core.