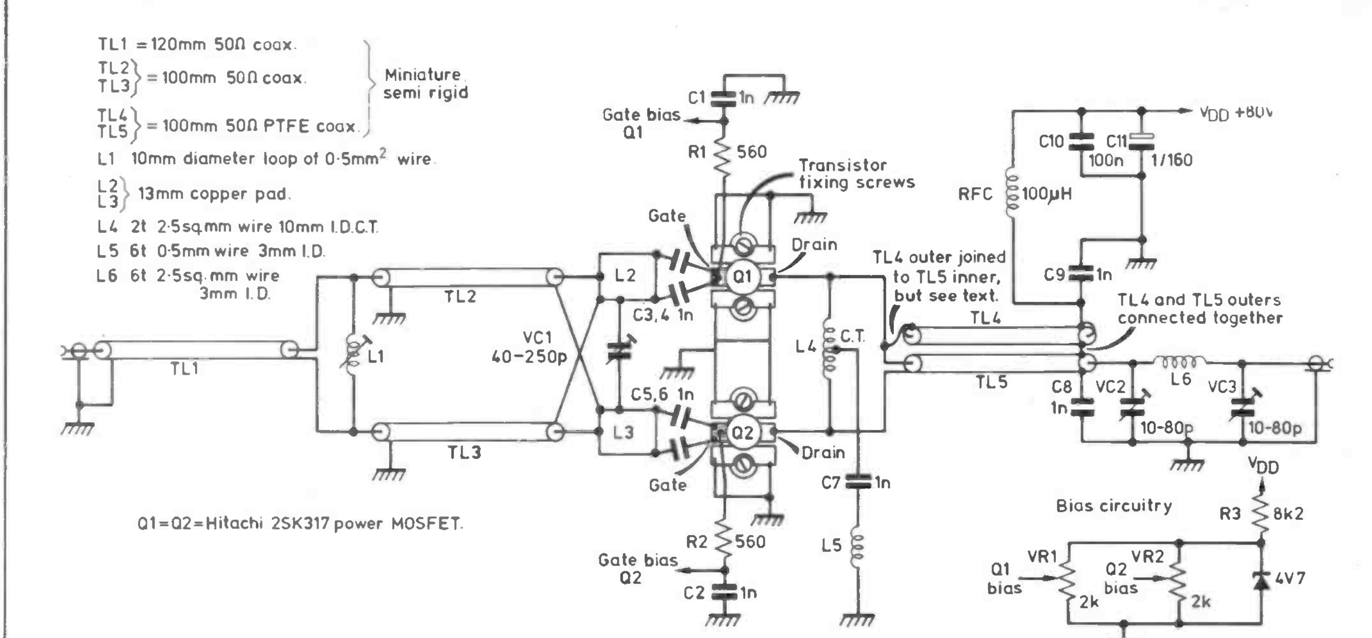
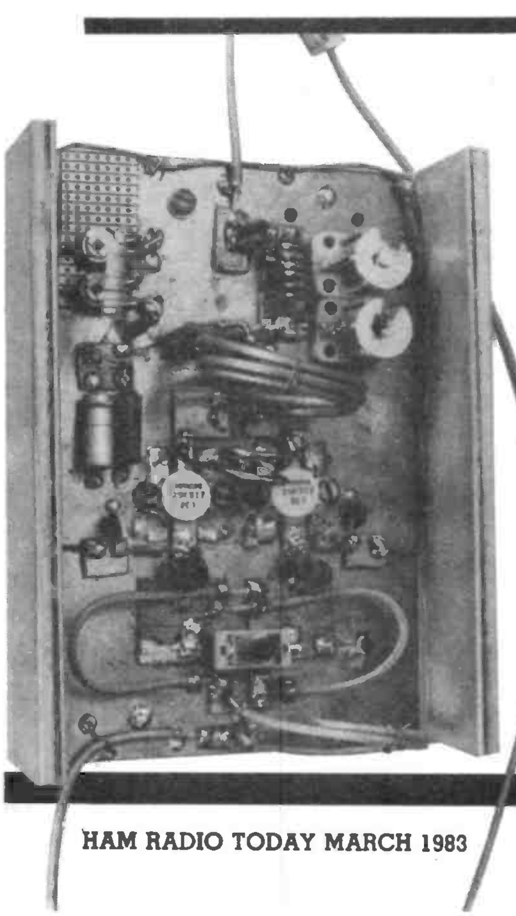


FIG. 5. G4JST development circuit for 250W MOSFET 2m linear amplifier.

The great virtue of the push-pull arrangement is that it virtually eliminates the need for incredibly expensive chip capacitors. The RF currents are all there but they tend to be self cancelling. There are no high circulating currents which require shortcircuiting to ground.

In honesty, it would be a good idea to replace the disc capacitors used to couple Q1 and Q2 to the input circuit with decent Unelco uncased mica caps. The circulating currents at this point are very high. Similarly, VC1 should have been a decidedly better component than I used in my prototype.



So far the transistors and the technology which they represent has lived up to the manufacturer's claims. I have run into one or two problems though. The output balun runs at a fairly high temperature, even at the 80W level. At present I have only a very limited supply of rather thin 50 ohm PTFE or Teflon cable. If anybody out there reading this has anything more substantial to offer me — just a couple of feet would be a great help — please send it to me, Frank Ogden G4JST c/o 2 Mallory Road, Hove BN3 6TB. Likewise, I would appreciate a similar length of 25 ohm PTFE coax to improve the matching on the input baluns. I have no 25 ohm cable whatsoever.

23cm test source

When I am not editing this magazine, playing about with MOSFETs or just simply out boozing, I look towards 23cm as an interesting band. In building some gear for this frequency, I had need for a simple, medium power test source to carry out a bit of 'cold tuning' (tuning circuits for approximate resonance before turning on the supply volts.)

Fig. 6 is the schematic of the oscillator circuit which produces about 20mW of RF in the 23cm band. Stability is surprisingly good although not anywhere near good enough for a precision signal source, for instance as a carrier for narrow band FM. However it is perfectly acceptable for active wavemeter applications. With the base terminal of the BFR34A transistor connecting directly to a feedthrough soldered onto a piece of laminate, the collector of the transistor connects to about an inch of 2.5 sq mm copper wire. The end of this is soldered to another feedthrough at the far end of the piece of board. See **Fig. 6** for the layout. A single 100 ohm resistor is soldered from the emitter of the transistor directly onto the copper laminate. The bias and supply components fit to the other side of the feedthru's.

By trimming the length of the copper line, stable oscillations can be obtained anywhere from about 1200 to 2000MHz. Power is extracted from the earthy end of the line via a small capacitor to SMA socket soldered to the card. The frequency should be checked by running a knife edge down a Lecher wire coupled up with a simple diode detector. The halfwave nodes show very clearly making it possible to work out the frequency within a few percent.

If you don't know about Lecher lines, I will keep the topic for a Technicalities column on another occasion. **G4JST**