

Table (a)

List of alternative devices used and outputs

Type No.	Input from txcvt	Output	Remarks
BLY 88	2W	13W	—
BLY 88c	2W	16W	Higher power version
TP 2320	3W	18W	—
2N6083	3W	23W	Best Buy?
CV type	3W	10W	was in box that cost 40p! at junk sale

Please note above are typical outputs at normal drive levels only, it would undoubtedly be possible to produce more than this from these devices if overdriven.

the different devices used and typical output powers.

Fig. 1 shows the circuit biased for linear operation. If you are confident that you will never use the unit on SSB, then it can be built less the biasing and SSB switch components, and this is discussed in the text as necessary. For use in linear applications there are no surprises, as already stated, and a simple form of biasing is used featuring a diode in physical and thus thermal contact with the transistor. Any heating in the transistor alters the characteristics of diode which in turn alters the biasing. Heatsinking is provided by a standard heatink and contributed to by the use of a die-cast box which of course also performs an RF shielding function. The input and output of the unit are matched to 50 ohms, and the RF "VOX" sensor detects and rectifies the incoming RF resulting in the BFY51 switching "on" the TX/RX relay coils as necessary. For use on sideband a suitable "hang" is provided by a 100MFD electrolytic to prevent the relays chattering in and out. The unit is straight through with no power applied and, with reasonable care in construction, has a negligible insertion loss.

A word about choice of components. Purists might quite rightly sit down and with the aid of Ohm's

Law correctly calculate that the wattage of R1 could be reduced to around the 2½ to 3w mark and still be satisfactory. At the 3w level R1 tends to run a bit warm, and this is why the writer prefers to use "overkill", upping the rating to a more comfortable 9w. The relays used in switching were available locally and were originally used in the

Pye Bantam for antenna and power changeover. At just under £1.00 each, they offer a good compromise between power and performance at the power levels and frequency involved. A suitable alternative if these cannot be found is the OM1 from Ambit International.

In construction generally the writer prefers to adhere as far as is possible to the KISS philosophy (keep it simple, stupid!), and adds his own as BIB — build in bits. Modular construction enables the home constructor to test each section out before final assembly. Should a part of the circuit go wrong, then that particular board can be completely rebuilt from scratch at minimal cost if no other method of fault-finding or deglitching proves successful.

Making the PA board

The PA board is made up using PADS of double-sided PCB material stuck to the base with superglue, and the dimensions and layout of the islands so formed are given in Fig 2 a & b together with drilling details for the PCB and the transistor mounting. Note that the physical size of R1 will determine the final position of the strip carrying C5, C6, C7, D1 and L3.

If the PA is to be for FM use only, ie class C, then the strip with the associated bias components R1, C5, C6, C7 and D1 can be

