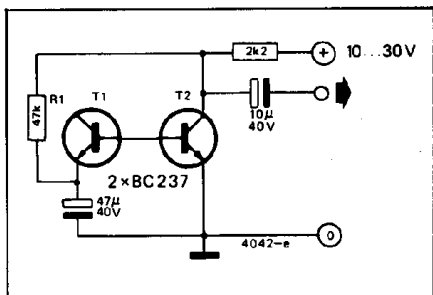


J. Jacobs

noise generator

Despite its simple design, this circuit is a universal noise generator which produces a very high noise amplitude. Transistor T_1 is connected as a zener diode and is connected to the base of the second transistor (T_2). The current through the zener transistor, and hence the amplitude of the noise, is adjusted by resistor R_1 . This noise voltage is then amplified by T_2 .

The supply voltage can be varied over a wide range and, depending on the required output voltage, can be chosen between 10 V and 30 V. At a number of



different supply voltages the following noise output voltages were measured:

$$\begin{aligned}
 +V_b = 12 \text{ V} & - 5 \text{ V}_{\text{p-p}} \\
 +V_b = 15 \text{ V} & - 8 \text{ V}_{\text{p-p}} \\
 +V_b = 20 \text{ V} & - 10 \text{ V}_{\text{p-p}} \\
 +V_b = 25 \text{ V} & - 15 \text{ V}_{\text{p-p}}
 \end{aligned}$$

If required, transistor T_1 serving as the zener diode can, of course, be replaced by a real zener of 6-8 V.

