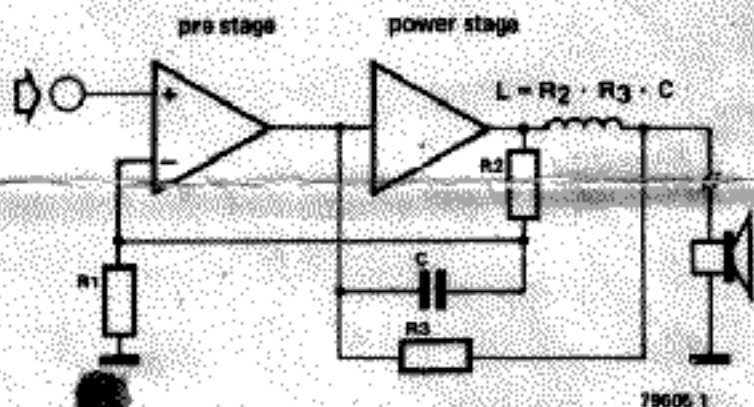


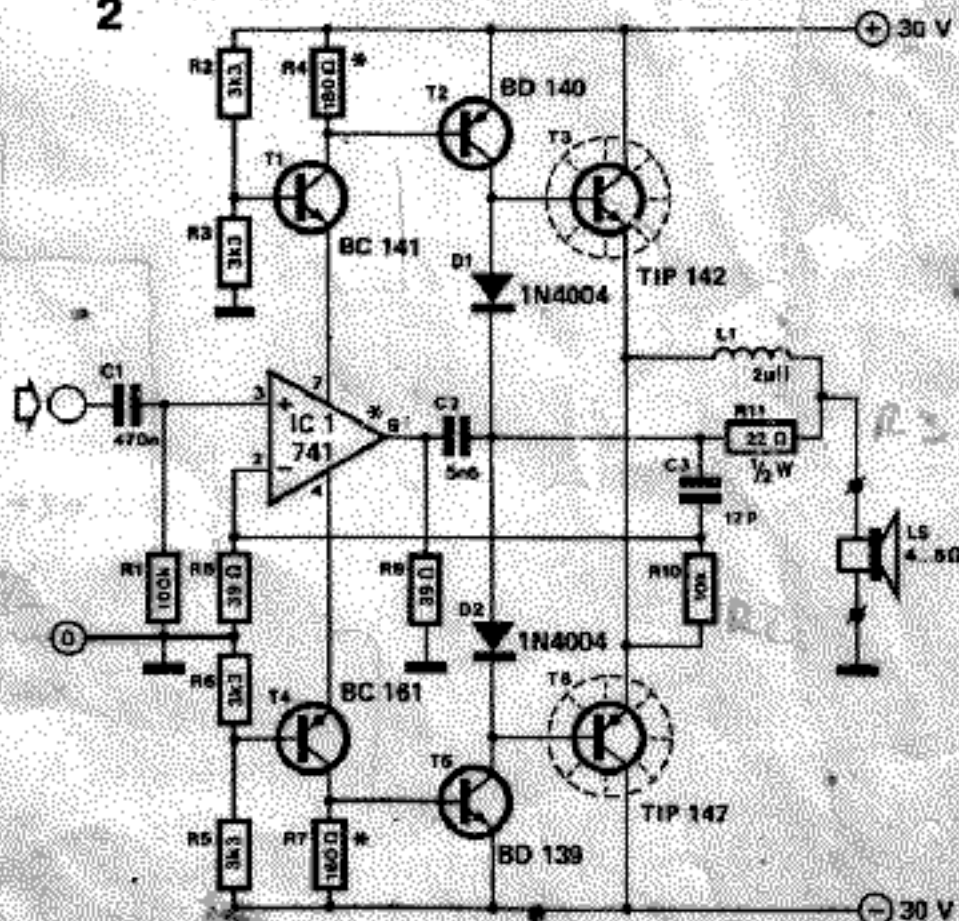
current dumping amplifier

48

1



2



The basic principle of a current dumping amplifier has been described previously in Elektor (see Elektors 8 and 21). To recap briefly, the circuit exploits the fact that, due to the effect of the four passive components, R_2 , R_3 , L and C shown in figure 1, the non-linear characteristic of the output stage becomes unimportant. Thus it is possible to use a Class-B output stage (i.e. the output transistors are biased to their cut-off points so that there is no quiescent output current) with all the advantages and none of the disadvantages (crossover distortion) of that configuration.

The circuit shown in figure 2 functions on the above described current dumping principle. According to the designer it is capable of delivering 100 W into 4 Ω with a claimed harmonic distortion of 0.006% at 1 kHz and 60 W. If one possesses the equipment to make accurate distortion measurements, C_3 can be replaced by a 22 pF variable capacitor, and the latter adjusted for minimum distortion.

The circuit also has a useful extra facility in the form of a dummy load (R_9).

The output stage is driven (via driver transistors T_2 and T_5) by transistors T_1 and T_4 , which are connected in series with the positive and negative supply lines respectively of IC1. In this way the slew rate of the 741 is improved. If, however, a faster op-amp is desired (e.g. the LF 357), then the value of R_4 and R_7 should be altered to provide the correct quiescent current for the IC, so that the output stage draws no current.