

# Active PC Loudspeaker

# 035

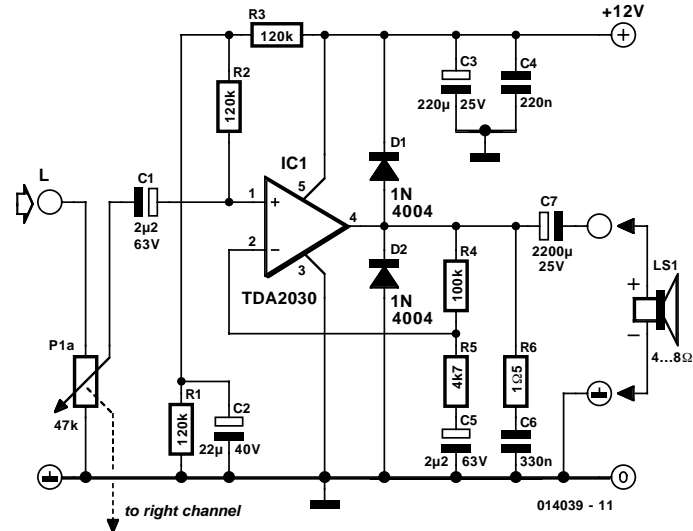
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With the well-known TDA2030V integrated power amplifier in the Pentawatt package, it is easy to 'activate' a PC loudspeaker or upgrade the quality of an inexpensive active loudspeaker. The TDA2030 combines ease of use with low levels of harmonic and crossover distortion, and it is also incorporates short circuit and thermal overload protection.

No creative brilliance is needed to arrive at the circuit shown in **Figure 1**, which is practically the same as the standard application circuit for single-supply operation as shown in the device data sheet from its manufacturer, ST Microelectronics:

<http://us.st.com/stonline/books/pdf/docs/1458.pdf>.

The two resistors R1 and R3 set the operating point of the amplifier, and the non-inverting input is biased via R2. The audio signal reaches the power opamp via C1. The gain is determined by the ratio of R5 to R4. Capacitor C5, like C1, affects the lower roll-off frequency. The two diodes protect the IC against positive and negative spikes in the output signal. The RC network C6/R6 ensures stable operation of



the amplifier in the high frequency range. The load is connected via the output electrolytic capacitor C7. In the data sheet, you can see which parameters change if you 'play around' with the values of the resistors and capacitors. Any individual speaker with an impedance of 4 to 8 Ω or a multi-way loudspeaker can be connected to the output. The maximum achievable power is 6 to 12 W, so a heat sink with a thermal resistance of 8.3 K/W to 4.2 K/W is mandatory.

(014039-1)