EMD-immune Electronic Doorbell

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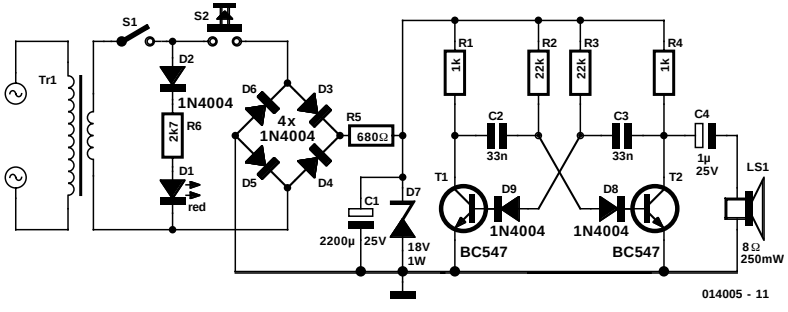

Whenever an antediluvian electric doorbell is used in an apartment building, the rain of sparks that is generated when the Wagnerian hammer pounds against the 'sounding body' infests the bell network with interference pulses. These can significantly disturb electronic doorbells, or even cause them to give up the ghost. If you cannot convince your neighbour to convert to something more modern, or at least to build in a noise suppression network, you can use the electronic doorbell described here, since it is immune to EMD.

This circuit is based on a simple multivibrator stage to which a loudspeaker is connected. Capacitor C4 provides dc isolation between the multivibrator and the loudspeaker (8 Ω, 0.25 W). The frequency is determined by the RC networks R2/C2 and R3/C3; it lies at around 0.7 RC = 2 kHz. The multivibrator stage receives its supply voltage from the bell transformer. For this purpose, the ac voltage must be rectified by D3-D6, and Zener diode D7 prevents the voltage from rising above approximately 18 V. EMD immunity is provided by the lowpass network R5/C1. The bell can also be silenced using switch S2. In this case, the only thing that happens when someone presses on the bell button is that D1 lights up.

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