Smooth Flasher

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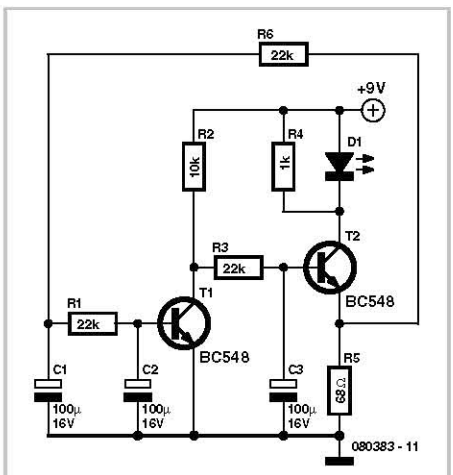
Ordinary LED flashers turn the LED on and off abruptly, which can get a little irritating after a while. The circuit shown here is more gentle on the eyes: the light intensity changes very slowly and sinusoidally, helping to generate a relaxed mood.

The circuit shows a phase-shift oscillator with an adjustable current source at its output. The circuit is capable of driving two LEDs in series without affecting the current. The frequency is set by three RC networks, each of which consists of a 100 µF capacitor and a 22 kΩ resistor.



Operation is largely independent of supply voltage, and the average LED current is set at about 10 mA. The circuit adjusts the voltage across the emitter resistor so that it matches the base voltage of the first transistor (around 0.6 V). The phase shifting network gives rise to the oscillation around this average value.

In the prototype of this circuit we used an ultra-bright red LED.

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