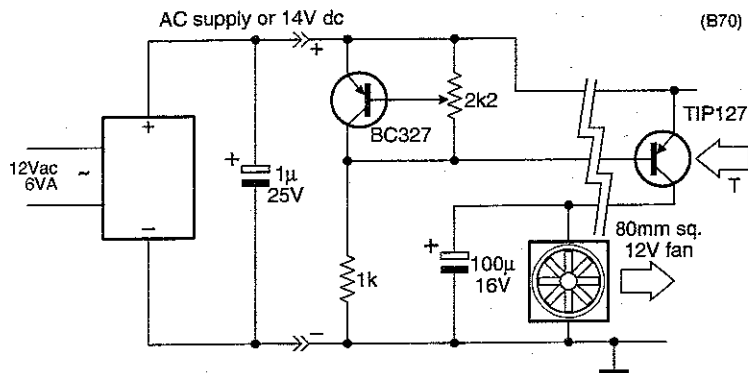


Temperature-controlled heatsink fan

If the TIP127 transistor is mounted on the back of a component that requires cooling, its V_{be} variation with temperature controls power to the 12V, 80mm square fan, from 3.2V at 16°C to 13.2V at 43°C.

Set the fan voltage to 5V dc, so that the fan just runs with both transistors at ambient temperature. There is a slight inertia, caused by a tracking delay, but the circuit is effective and quiet enough to be used with a Class B amplifier at low levels.

G S Maynard
Newtownabbey
Co. Antrim
Northern Ireland
B70



Simple automatic temperature control uses the change in base-emitter voltage of a transistor to control fan voltage.

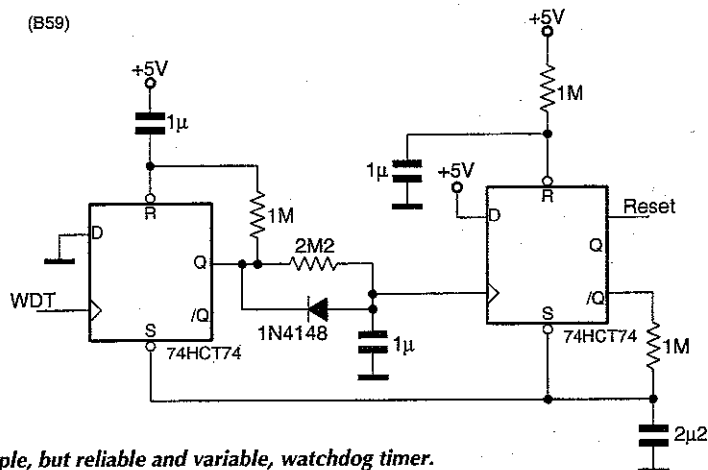
Single-chip watchdog timer

Since the watchdog timer I had decided to use was not available, this circuit took its place. It is, in fact, cheaper and the reset signal's timing may be varied by changing the value of one capacitor.

If the microprocessor does not send a refresh signal to the timer, the second bistable device produces a 2.5ms positive-going pulse every 580ms. When the supply is applied, the circuit provides an initial reset pulse.

Recognition of the refresh input is by its rising edge, which is more reliable than a dependence on level.

Cristóbal Rueda Guerrero
Malaga
Spain
B59



Simple, but reliable and variable, watchdog timer.

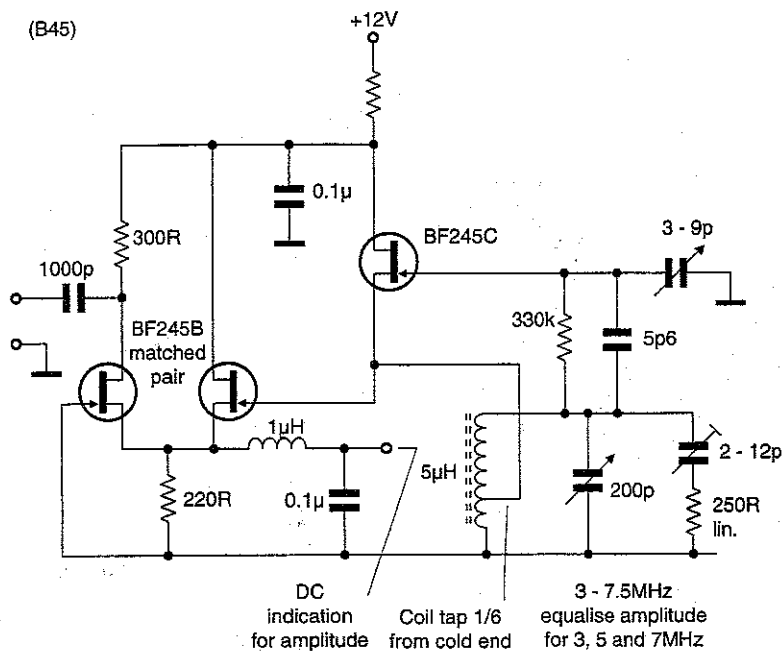
Oscillator has low phase noise

This oscillator covers the 3-7.5MHz range and exhibits low phase noise.

Amplification is low – just over unity – to inhibit $1/f$ noise, which would cross-modulate the signal amplitude, causing associated fm. Adjustable damping maintains the effect over a wide tuning range to provide less than 1dB flatness over an octave. Even harmonics from the isolation amplifier extend the usable range to about 30MHz.

The 5µH coil is tapped 1/6 from the ground end and the output from the amplifier common emitter provides a dc indication of signal amplitude.

Wim de Ruyter
Oudkarspel
Netherlands
B45



Low phase-noise oscillator may be used up to 30MHz.