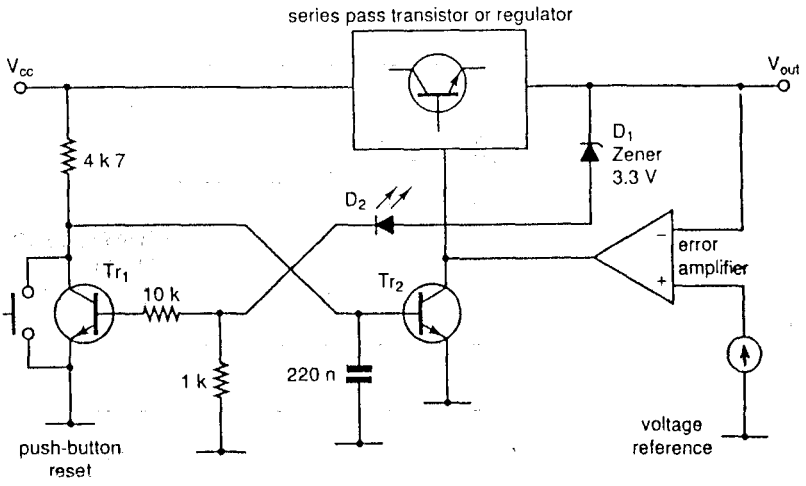
D. Danyuk, G. Pilko. // Flip-flop PSU Protection. // Electronics World + Wireless World. 1994. March. P. 211.

# Flip-flop PSU protection

This circuit will protect a series pass transistor or voltage regulator, which has access to the input of its output stage, against shorts.

Two additional transistors cross-connected in the form of a flip-flop provide the protection. If the regulator output is forced low by a short, zener $D_1$ stops conducting. Transistor $Tr_1$ cuts off and $Tr_2$ is hard on, disabling the regulator, which remains in that condition until, the short having been removed, the push-button is pressed and the circuit returns to normality. The led indicates the state of the circuit.

*D Danyuk and G Pilko*
*Kiev*
*Ukraine*




*Flip-flop disables voltage regulator in the presence of a short-circuit.*

# Noisy video operates relay

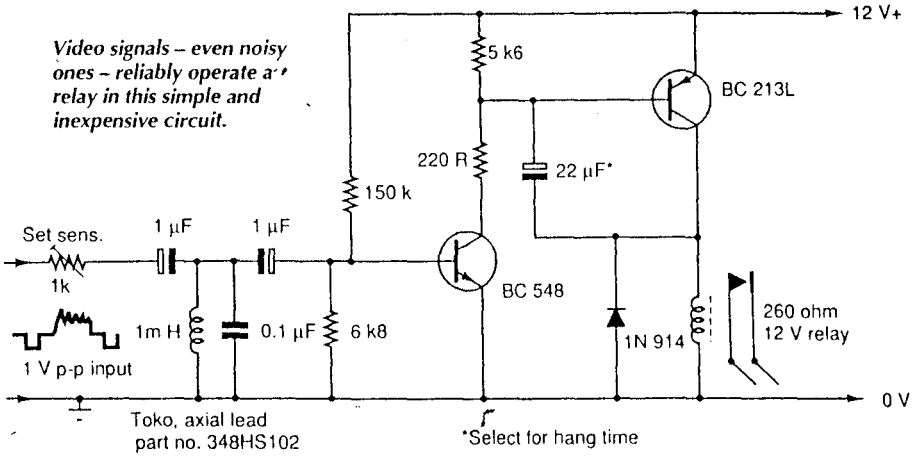
Even when a video signal is almost submerged in noise, this circuit recognises it and operates a relay.

An input tuned circuit selects the 15.625kHz component of the signal, which is then amplified by the *BC548*, charging the 22µF capacitor. After a time determined by that process, at least 1s, the *BC213L* draws enough current to pull in the relay, the delay being necessary to prevent noise on the signal affecting the result.

There is sufficient input impedance to allow parallel connection to a video monitor without trouble. The circuit is less critical than the PLL often used for this purpose.

*John Cronk (GW3ME0)*
*Llanfairfechan*
*Gwynedd*
*North Wales*

*Video signals – even noisy ones – reliably operate a relay in this simple and inexpensive circuit.*

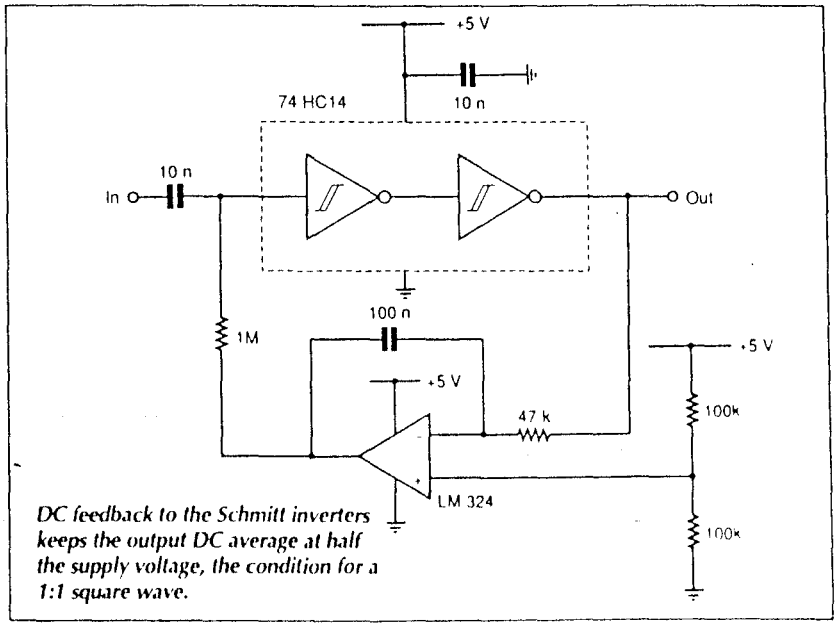



# Even up the marks and spaces

If your application demands a precise 1:1 mark/space ratio from an analogue drive signal of indeterminate waveform, this arrangement for steady-state signals exploits the fact that HC signals approach both supply rails.

It depends on DC feedback to the input of a couple of Schmitt-trigger inverters via an op-amp biased midway between zero and the supply voltage. Maintaining the DC average of the output signal at half the supply voltage gives the condition for a 1:1 square wave.

*Ian Braithwaite*
*St Albans*
*Hertfordshire*




*DC feedback to the Schmitt inverters keeps the output DC average at half the supply voltage, the condition for a 1:1 square wave.*