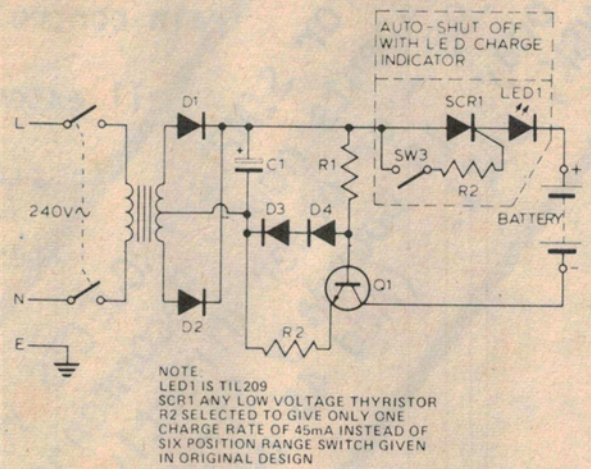
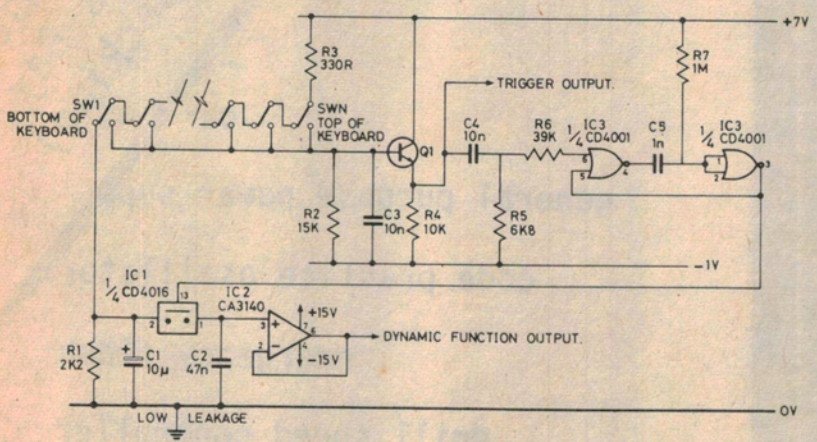
Ideas for experimenters



Ni-Cad Charger Mod.

This modification was made to the ETI 519 Ni-cad charger to protect the cells in case a power cut occurred while the cells were charging. Normally the cells on charge would rapidly discharge through the charging circuitry, causing possible damage.

The modification involved the addition of a low voltage thyristor in series with the battery. If power fails, the battery cannot discharge. When power is reapplied, the battery will not continue to charge until SW3 is closed momentarily.



Touch Keying

A dynamic function (touch sensitivity) greatly increases the flexibility of expression available to the player of a music synthesiser. This circuit achieves the dynamic function by measuring the change over time of the keyboard switches and hence the velocity of the keys.

The circuit is basically composed of three parts: firstly an RC time constant network (R1, C1) controlled by the keyboard switches, a buffer amplifier and monostable (Q1, IC3) and a sample and hold circuit (IC1, C2, IC2).

Normally, C1 is kept charged up to +7V through the chain of closed keyboard switches. When a key is pressed, the chain is broken and C1 discharges through R1. As the key is further depressed, contact is made with the trigger busbar, Q1 is turned on and the monostable triggers. The monostable gives out a 1 millisecond pulse which allows the analogue switch, IC1, to close allowing C2 to charge up to the voltage on C1 at the time. After this, the voltage is stored on C2. Since the input impedance of IC1 is about 1.5 x 10^{12} ohms the delay time of C2 is very long. An output is available from the emitter of Q1 to trigger envelope shapers, etc. To ensure that the response is the same all over the keyboard, the contact wires of the keys should be adjusted to the same spacing.

W Stride