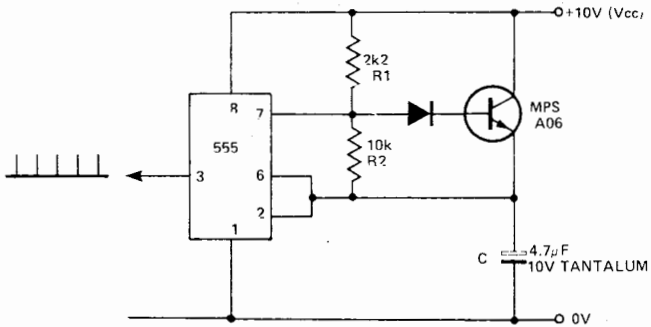
NEEDLE PULSE GENERATOR

This circuit generates very short positive pulses at long time intervals – useful for strobing sample-and-hold circuits etc.

In the discharge part of the cycle, capacitor C discharges slowly through R2, as reset pin falls below 1/3 Vcc, the bistable (internal) switches, and the short between pin 7 and earth is removed. The transistor is then turned hard on by current flowing through R1, and C charges very rapidly – when the voltage across it exceeds 2/3 Vcc the 555 switches again, and the discharge cycle begins again.



The "charge" portion of the cycle is very short, about 120μS, while the discharge time depends entirely on the value of R2. For example, with R2=2M2, a 120μS pulse is produced about every 10 seconds; a mark/space ratio of 100,000 to one!