

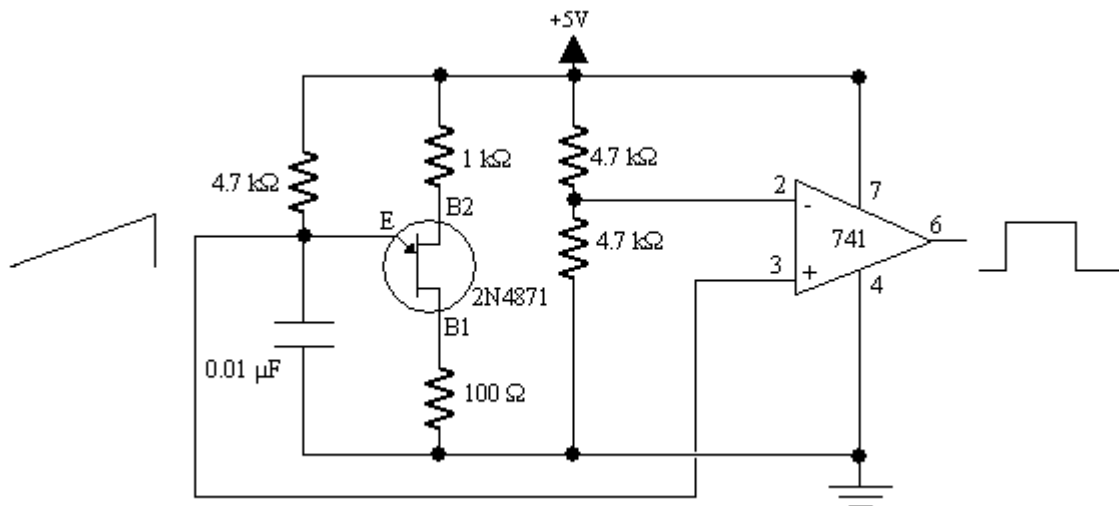
UJT Relaxation Oscillator With Op Amp Pulse Shaper

Parts

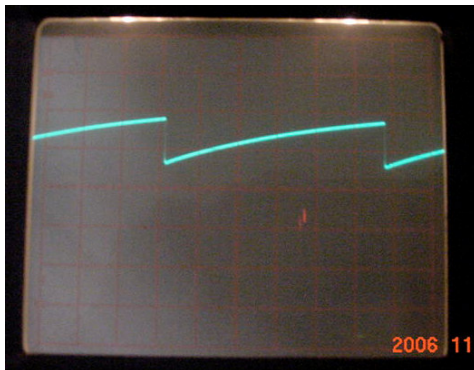
UJT 2N4871 (1) OpAmp LM741CN (1) 100 Ω (1) 4.7 k Ω (3)
1 k Ω (1)

Description and Operation

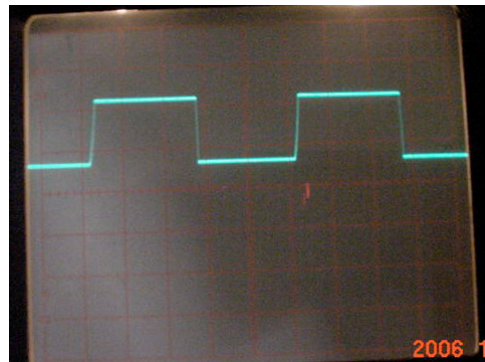
The UJT is configured to generate a sawtooth wave at a frequency of 104 Hz. When the circuit is initially powered up the capacitor begins to charge through the 4.7 k Ω resistor.



When the voltage across the capacitor rises to a certain point the current suddenly flows from the UJT emitter (E) to the UJT Base (B1). This produces a voltage across the 100 Ω resistor which is roughly the same at the output of the UJT relaxation oscillator on the Emitter. The sawtooth waveform is applied to op amp pin 3. Pin 2 of the op amp has a voltage applied from the voltage divider. When the sawtooth is higher than the reference from the divider of 2.5 volts, the op amp produces a positive going output on pin 6. The op amp is configured as comparator.



UJT Output at the Emitter



Op Amp Output

Photo

