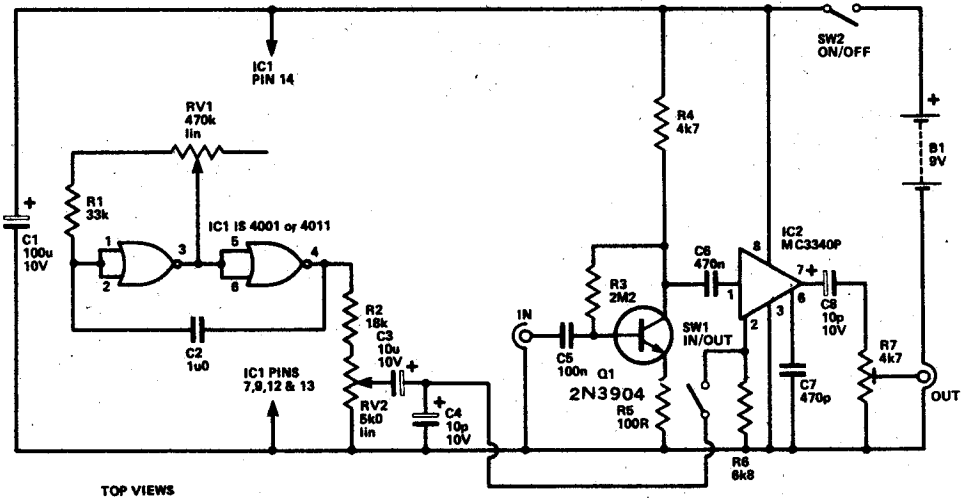
TREMOLO UNIT

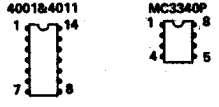
This is one of the most popular types of special effect unit for use with guitars, the operation is to amplitude modulate the input signal with a low frequency signal. Thus a constant input as in (a) would emerge from the tremolo unit varying in amplitude at a low frequency as in (b).

In this circuit the input signal is taken to the input of an electronic attenuator (based on IC2) via a common emitter amplifier using Q1. R6 sets the gain of the attenuator (with zero modulating voltage) at about unity, but the amplification provided by Q1 gives an output level of a few hundred millivolts. This can either feed a high level input of the amplifier, or R7 can be adjusted to attenuate the output to a level which is suitable to drive the ordinary guitar input. It is necessary to have the stage of amplification ahead of the IC2 so that this part of the circuit is handling a fairly high signal level, and gives a good signal to noise ratio.

The gain of IC2 can be varied by applying a control voltage to pin 2. This control signal is generated by a conventional CMOS astable circuit which uses two of the gates



TOP VIEWS



contained in IC1. The operating frequency of the astable can be varied from about 1 to 10 Hz by means of frequency control RV1. A squarewave signal is produced by the astable, and this must be filtered to remove the high frequency components in order to give a smooth and pleasant tremolo effect. This filtering is given by R2 and C4. RV2 controls the amplitude of the modulating singal and acts as the tremolo depth control. SW1 can be used to disconnect the modulation when the tremolo effect is not required.