



MUSICAL ENVELOPE GENERATOR AND MODULATOR

A gate voltage is applied to initiate the proceedings. When the gate voltage is in the ON state, Q1 is turned on, and so the capacitor C is charged up via the attack pot in series with the 1 k resistor. By varying this pot, the attack time constant can be manipulated. A fast attack gives a percussive sound, a slow attack the effect of 'backward' sounds. When the gate voltage returns to its off state, Q2 is turned on and the capacitor is then discharged via the decay pot and the other 1 k resistor, to ground. Thus the decay time constant of the envelope is also variable.

This envelope is buffered by IC1, a high impedance voltage follower and applied to Q3 which is being used as a transistor chopper. A musical tone in the form of a squarewave is connected to the base of Q3. This turns the transistor on or off and thus the envelope is chopped up at regular intervals, the intervals being determined by the pitch of the squarewave.

The resultant waveform has the amplitude of the envelope and the harmonic structure of the squarewave. IC2 is used as a virtual earth amplifier to buffer the signal and D1 ensures that the envelope dies away at the end of a note.