RAMP GENERATOR

We present here another application for the versatile 555 timer. In this ramp generator, the 555 functions as a Schmitt trigger that controls the current fed to integrator IC1. Potentiometer R4 determines the frequency of oscillation over the range from 150 to 10,000 Hz. Maximum output amplitude is ± 1.67 volts with respect to ground (3.3 volts peak-to-peak). Potentiometer R1 allows you to trim the amplitude to any desired size. Note that this circuit produces a *very good* ramp waveform with slow descent and a rapid climb back to maximum.

PARTS LIST FOR RAMP GENERATOR

C1,C3,C6—.1uF capacitor
C2,C4—100uf, 16V electrolytic capacitor
C5—.005uF capacitor
IC1—741 op amp
IC2—555 timer
Q1—2N3904 NPN transistor
R1—2,000-ohm linear-taper potentiometer
R2—6,200-ohm, resistor
R3—30,000-ohm, resistor
R4—2-megohm linear-taper potentiometer
R5—10,000-ohm, resistor
R6—3,300-ohm, resistor